

**NATIONAL BUSINESS AND TECHNICAL
EXAMINATIONS BOARD (NABTEB)**

P.M.B. 1747, IKPOBA HILL, BENIN CITY EDO STATE

**CHIEF EXAMINERS'
REPORT**

ON THE

2012 NOV/DEC NBC/NTC ANBC/ANTC
EXAMINATIONS



TABLE OF CONTENT

	Page
Table of content:	ii – iv
Preface:	v
Executive Summary:	vi – viii
 SECTION I: GENERAL EDUCATION	
English Language (001):	2 – 3
Advanced English Language (A01):	4 – 5
Mathematics (002):	6 – 12
Advanced Mathematics (A02):	13 – 17
Economics (003):	18 - 22
Advanced Economics (A03):	23 – 29
Physics (004-1):	30 – 32
Chemistry (005-1):	33 – 36
Chemistry (Alternative to Practical) (005-2):	37 – 39
Biology (006-1):	40 – 43
Biology (Alternative to Practical) (006-2):	44 – 48
Literature-in-English (007-2):	49 – 52
Information and Communication Technology (008-1):	53 – 55
 SECTION II: BUSINESS TRADES	
Typewriting, 35 W.P.M (411):	57 – 62
Office Practice (413):	63 – 66
Advanced Secretarial Duties (417):	67 – 71

	Page
Commerce (421):	72 – 74
Advanced Commerce (428):	75 – 79
Advanced Office Management (427):	80 – 84
Advanced Salesmanship (436):	85 – 89
 SECTION III: TECHNICAL TRADES	
Introduction to Agric Science Materials, Implement and Machines (011-1):	91 – 93
Tractor System (012-1):	94 – 96
Advanced Agricultural Equipment & Implements Mechanic Works (016-1):.....	97 – 101
Motor Vehicle Mechanics Works (021-1):	102 -104
Advanced Electrical Installation & Maintenance Works (046-1):	105 -109
Fabrication and Welding (051 – 1):	110 -112
Advanced Fabrication and Welding (056-1):	113 – 117
Advanced Mechanical Engineering Craft Practice (066-1):	118 - 122
Advanced Electronics Works (076-1):	123 - 127
Instrument Mechanics Works (111-1):	128 - 130
General Metal Works (191-1):	131 - 133
General Wood Works (192-1):	134 – 135
Building/Engineering Drawing (193-2):	136 – 140
Basic Electricity (194-1):	141 – 143
Introduction to Building Construction (211-1):	144 – 146
Blocklaying/Bricklaying & Concreting (212-1):	147 – 149
Furniture Making (231-1):	150 – 151
Advanced Furniture Making (236-1):	152 – 155

	Page
Plumbing and Pipe Fitting (261):	156 – 158
Carpentry and Joinery (221-1):	159 – 161
Advanced Carpentry and Joinery (226-1):	162 - 166
Painting and Decorating (251-1):	167 – 169
Advanced Painting and Decorating (256-1):	170 – 174
Advanced Plumbing and Pipe Fitting (266-1):	175 – 179
Draughtsmanship Craft Practice (271-1):	180 – 181
Printing Craft Practice (361-1):	182 – 184
Advanced Printing Craft (366-1):	185 – 189
Advanced Business/Construction Management (A00):	190 – 194
Advanced Building Drawing (A05):	195 - 200

PREFACE

The Chief Examiners' Report is a post examination analysis on the marking exercise, which contributes greatly to the conduct of NABTEB examinations. It also provides a feedback on the performance of the candidates and their teachers. Two volumes are produced each year, one for May/June NBC/NTC and the other for November/December NBC/NTC and ANBC/ANTC Examinations.

This report for 2012 Nov/Dec. is divided into three sections, namely:

Section I: General Education Subjects;

Section II: Business Trades;

Section III: Technical Trades.

Each Section discusses in detail the general performance of the candidates, their strengths and weaknesses as well as recommendations for improvement.

This report is therefore recommended for use by schools and students taking NABTEB Examinations as it provides a feedback to guide the schools and help correct the lapses identified by the examiners during the marking exercise. It will also be of immense value to individuals wishing to sit for NABTEB examinations.

EXECUTIVE SUMMARY

GENERAL EDUCATION SUBJECTS

Candidates' general performance was good in Advanced Mathematics (A02), Advanced Economics (A03), Chemistry (005-1&2) and Biology (006-1&2). Their performance was fair in both English Language Ordinary level (001) and Advanced English Language (A01), while their performance was better when compared with the previous years in Mathematics (002), Economics (003), Physics (004-1), Literature-in-English (007-2) and Information and Communication Technology (ICT) (008-1).

Candidates' Strengths

- ✓ Correct answers to report writing.
- ✓ Good presentation of questions.
- ✓ Ability to balance chemical equation
- ✓ Ability to use apt quotations to support answers in poetry.

Candidates' Weaknesses

- ❖ Poor grammatical expressions.
- ❖ Poor spellings and punctuations.
- ❖ Inability to summarize passages.
- ❖ Poor usage of decimal points.
- ❖ Poor knowledge of probability.

Suggestions for Improvement

- ◆ Candidates should cultivate the habit of reading journals, novels, magazines etc.
- ◆ Teachers should emphasize the importance of decimal points where applicable.
- ◆ Teaching of probability should be intensified.
- ◆ The importance of drawing/sketching should be emphasized.
- ◆ Laboratories should be well equipped and candidates should be exposed to practical experiences in the laboratories.

BUSINESS TRADES

Candidates' general performance was good in Office Practice (413). Their performance was fair compared to the previous years in Advanced Secretarial Duties (417), Advanced Commerce (428) and Advanced Office Management (427), while poor performance was recorded in Typewriting (411), Commerce (421) and Advanced Salesmanship (436).

Candidates' Strengths

- ✓ Good definition of terms
- ✓ Clear distinction of terminologies
- ✓ Good display of mastery of Office Practice

Candidates' Weaknesses

- ❖ Misinterpretation of questions.
- ❖ Inability to follow rubrics and marginal instructions.
- ❖ Poor presentation of answers.
- ❖ Overtyping.

Suggestions for Improvement

- ◆ Teachers should be encouraged to cover the syllabus
- ◆ Students should read questions well before attempting them.
- ◆ Students should be conversant with the rules of typewriting.
- ◆ Seminars should be organized for teachers of typewriting.

TECHNICAL TRADES

Candidates performed well in Introduction to Agricultural Science Materials Implements and Machines (011-1), Tractor System (012-1), Motor Vehicle Mechanics (021-1), Motor Vehicle, Fabrication and Welding (051-1), Advanced Mechanical Engineering Craft Practice (066-1), General Metal Works (191-1), Building/Engineering Drawing (193-1), Basic Electricity (194-1), Advanced Carpentry and Joinery (226-1), Painting and Decorating (251-1) and Advanced Business/Construction Management (A00).

Average performance was recorded in General Wood Works (192-1). Fair performances was recorded in Advanced Agricultural Equipment and Implements Mechanic works (016-1), Advanced Electrical Installation and Maintenance Works (046-1), Instrument Mechanics (111-1), Introduction to Building Construction (211-1), Furniture Making (231-1), Plumbing and Pipe Fitting (261), Advanced Plumbing and Pipe Fitting (266-1), Printing Craft Practice (361-1), Advanced Printing Craft (366-1) and Advanced Building Drawing (A05).

They performed poorly in Advanced Fabrication and Welding (056-1), Advanced Electronics Works (076-1), Blocklaying/Bricklaying and Concreting (212-1), Advanced Furniture Making (236-1), Carpentry and Joinery (221), Advanced Painting and Decorating (256-1) and Draughtsmanship Craft Practice (271-1).

Candidates' Strengths

- ✓ Proficiency in the knowledge of artificial respiration and types of rocks in Introduction to Agriculture Science Materials, Implements and Machines (011-1).
- ✓ Good knowledge of routine maintenance of a Motor Vehicle in Motor Vehicle Machines Works (021-1).
- ✓ Ability to explain methods of preparing surfaces against corrosion in Advanced Mechanical Engineering craft Practice (066-1)
- ✓ Good understanding of electromotive force and reactive and impedance in Basic Electricity (194-1).
- ✓ Proficiency in drawing and listing of tools and their uses in painting and decorating (251 -1).

Candidates' Weaknesses

- ❖ Wrong spellings.
- ❖ Poor grammatical expressions.
- ❖ Poor drawing and sketching skills.
- ❖ Inability to label diagrams well.
- ❖ Inability to explain an operational sequence.
- ❖ Inability to use correct dimensions in drawing.

Suggestions for Improvement

- ◆ Students should cultivate the habit of reading journals, magazines, etc.
- ◆ Emphasis should be laid on drawing and sketching skills.
- ◆ Teachers in sciences should always relate teaching to activities in various programmes for better understanding.
- ◆ Periodic seminars should be organized for item generators to keep abreast of examination requirements.
- ◆ Advanced candidates should be exposed to practical work before sitting for the examinations.
- ◆ Item generators should follow strictly the table of specification in setting questions.
- ◆ Emphasis should be laid on the mathematical/calculation aspects of the syllabus.
- ◆ The use of English Language should be encouraged.

SECTION 1

GENERAL EDUCATION

ENGLISH LANGUAGE (001)

General Comments

The question covered the syllabus and candidates' performance was generally fair.

Detailed Comments on Each Question

SECTION A – ESSAY WRITING

Question 1

Write a letter to your uncle living abroad, describing any three ways in which 2011 elections affected your country and your family.

Intended Task

The candidates were expected to write an informal letter to an uncle describing three ways in which the 2011 elections had affected the country and their families.

Many candidates performed poorly.

Question 2

Imagine that the local youth club of which you are the secretary is going to hold its annual general meeting in a week's time. Write a report reviewing the year's activities of the club.

Intended Task

The candidates were expected to write a report reviewing the year's activities of a club of which they were secretaries. Many candidates performed well.

Question 3

Write a letter to the Governor of your state telling him about the problems of education in your state and what he should do to solve them.

Intended Task

The candidates were expected to write a compliant letter to the Governor of their States and proffer solutions to the problems identified. Candidates' performance was good.

Question 4

Your school has been invited to participate in a debate titled: 'Democratic Rule is more expensive than Military Rule'. Write your speech for or against the motion.

Intended Task

The candidates were expected to write a speech for or against the motion ‘Democratic Rule’ is more expensive than Military Rule’. Many candidates performed fairly well.

SECTION B - COMPREHENSION

Question 5 and 6

Intended Task

The questions were on comprehension passages that tested candidates’ ability to read and answer the questions that followed the passages. The candidates’ performance was fair.

SECTION C - SUMMARY

Question 7

Intended Task

The question was a reading passage. Candidates were to carefully read the passage and give concise answers to specific questions on the passage.

Candidates were expected to summarize the passage accordingly.

The candidates performed fairly well.

u

Candidates’ Strengths

- ◆ Question on report writing was correctly answered.
- ◆ Candidates responded positively to the question on formal letter.

Candidates’ weaknesses

- ❖ Poor grammatical expressions.
- ❖ Poor spellings and punctuations.
- ❖ Poor identification of figures of speech
- ❖ Inability to tackle questions on informal letter.

Suggestion for Improvement

- Candidates should cultivate the habit of reading journals, novels, magazines, etc

ADVANCED ENGLISH LANGUAGE (A01)

General Comments

The question covered the syllabus. Generally, candidates performed fairly well and better than the previous year.

Detail Comments on Each Question

SECTION A – ESSAY WRITING

Question 1

Write a letter to the Commissioner for Education of your state imploring his Ministry to come to the aid of your school in the provision of Technical Equipment and Infrastructural Amenities.

Intended Task

The candidates were expected to write a formal letter to the Commissioner for Education imploring his Ministry to come to the aid of their school by providing technical equipment and infrastructural facilities. Candidates performed fairly well.

Question 2

Write a speech to be delivered at a public lecture on ‘The place of Technical Education in Nigeria’s quest for Technical Growth and Development’.

Intended Task

The candidates were required to write a speech on the place of Technical Education in Nigeria’s quest for technical growth and development. Candidates performed poorly.

Question 3

You often do the cooking at home, but you will soon be going away to college and your younger sister will have to take your place. Here are some of the dishes you are good at cooking: fried plantain, jollof rice, fish stew, yam pottage. Explain clearly to your sister, how to prepare and cook any one of these dishes.

Intended Task

Candidates were expected to write an explanatory essay on the preparation of a dish from the list given. Many candidates performed fairly well.

Question 4

You have been invited to participate in a debate titled “Our times are better than those of our fore-fathers”. Write out your arguments as the Chief Speaker either proposing or opposing the motion.

Intended Task

The candidates were expected to write a speech on a debate titled “Our times are better than those of our fore-fathers”. They were expected to argue for or against the topic. Candidates performed fairly well.

SECTION B – COMPREHENSION

Question 5 & 6

Intended Task

The questions were on comprehension passages that required candidates’ ability to carefully read the passages and answer the questions that followed.

Many of the candidates lifted verbatim answers from the passage, hence they performed averagely.

Candidates’ Strength

- ◆ Question on the preparation of a dish was answered fairly well.

Candidates’ Weaknesses

- ❖ Poor handwriting.
- ❖ Poor grammatical expressions.
- ❖ Inability to summarise the passages.

Suggestions for Improvement

- Candidates should cultivate the habit of reading novels, magazines, journals, etc.
- Teachers should emphasize the importance of summarizing passages in English Language.

MATHEMATICS 002)

General Comments

The paper met the required standard and candidates performed better compared to the previous years.

Detailed Comments on Each Question

Question 1

- (a) Without using logarithm tables or calculator, evaluate $\log_3^{9 + \log_3 21 - \log_3 1}$
(b) Solve the equation; $3x - 2y = 21$ and $4x + 5y = 5$.

Intended Task

The question required the candidates' knowledge on application of logarithm rules and also their ability to recall some facts on simultaneous equations.
Those who attempted the question performed well.

Question 2

- (a) Simplify $(1 \frac{5}{8} + 1 \frac{3}{5}) \div 5 \frac{3}{8}$
(b) If $2^{1-x} \times 2^{x-1} \div 2^{x+2} = 8^{2-3x}$, find x.

Intended Task

The question required candidates' knowledge of simplification of improper fractions using 'BODMAS'

Those who attempted it performed averagely.

Question 3

- (a) Without using logarithm tables or calculator, evaluate
$$\frac{0.0024 \times 0.064}{0.048}$$

(b) In the diagram below, find the value of y, correct to two decimal places.

Intended Task

The question required candidates' knowledge of logarithm and trigonometric. Candidates' performance was good.

Question 4

- (a) An agent selling Agricultural Machinery is paid a basic wage of N3,000.00 per week. In addition, he is paid a commission of 3% of his sales. In one week, he makes sales totalling N97,500.00. How much is his gross wage?
(b) Convert 542_{six} to a denary number.

Intended Task

The question required candidates' knowledge of commission and binary numbers. Those who attempted the question performed well.

Question 5

The table shows the number of children per family in a community.

Number of children	0	1	2	3	4	5
No. of families	3	5	7	4	3	2

- Find the
- (a) mean
 - (b) mode
 - (c) probability that a family has at least 2 children.

Intended Task

The question required the candidates' ability to calculate the mean, mode and probability. Those who attempted it performed poorly.

Question 6

- (a) Simplify (i) $\frac{x^2 - y^2}{3x + 3y}$
(ii) $(x + y)^2 - 2xy$

(b)

In the diagram, PQRS is a rectangle $|PK| = 15\text{cm}$, $|SK| = |KR|$ and $\angle PKS = 37^\circ$. Calculate, correct to three significant figures.

- (i) $\angle PS/$.
- (ii) $\angle SK/$ and
- (iii) area of the shaded portion.

Intended Task

The question required candidates' knowledge of measurement and quadratic equation. Almost all the candidates attempted it and they performed well.

Question 7

- (a) Calculate the value of x , y and z in the figure. Give reason(s) for each step of your answer.

- (b) The 3rd and 8th terms of an arithmetic progression (A.P), are -9 and 26 respectively. Find the:
 - (i) common difference,
 - (ii) first term, and
 - (iii) sum of the first 10 terms.

Intended Task

The question tested candidates' knowledge of geometrical theory and arithmetic progression. Only a few candidates answered the question and they performed well.

Question 8

Use logarithm table to evaluate

$$\frac{\sqrt{(36.8)^2 \times 67.05}}{0.03581}$$

Intended Task

The question required the candidates' knowledge of logarithm. Many of the candidates attempted the question and they performed well.

Question 9

- (a) A bag contains 3 red balls and 2 green balls. Two balls are drawn, without replacement. Calculate the probability of drawing:
- (i) two red balls,
 - (ii) two green balls,
 - (iii) one red and one green ball, and
 - (iv) two balls of the same colour.
- (b) If $126_n = 86$, find n .
- (c) Simplify $2\sqrt{3} - \frac{6}{2\sqrt{3}} + \frac{3}{\sqrt{27}}$

Intended Task

The question tested candidates' knowledge of probability, surd and rationalization. The candidates that attempted it performed well.

Question 10

- (a) Copy and complete the table for the relation:
 $y = 3x^2 + 5x - 7$ for $-3 \leq x \leq 3$

Y	-3	-2	-1	0	1	2	3
x		-5		-7			35

- (b) Using your table in (a), and on the same axes, draw the graphs of $y = 3x^2 + 5x - 7$ and $y = 2x + 3$. Use a scale of 2cm to 1 unit along the x-axis and 1cm to 2 units along the y-axis.
- (c) Draw the tangents to the curve at $x = 0$ and determine its gradient.
- (d) Use your graph to determine the roots of the equation: $3x^2 + 3x - 10 = 0$.

Intended Task

The question tested candidates' knowledge of graph and quadratic equation. Those who attempted the question performed well.

Question 11

Two points, A and B, on the surface of the Earth are given by their latitudes and longitudes as A (50°S , 35°E) and B (50°S , 95°E), calculate the:

- (a) radius of the parallel of latitude on which A and B lie,
- (b) distance, AB, measured along the parallel of latitude.
- (c) speed, due to rotation of the Earth of point A, assuming that the Earth makes a complete rotation in 24 hours. (Take the radius of the Earth = 6400km).

Intended Task

The question tested candidates’ knowledge of longitude and latitude. Few candidates attempted the question and they performed averagely.

Question 12

- (a) The following table shows the proportion in which Abiola spends his annual salary:

Item	Percentage (%)
Food and Beverages	48
Rent	16
Savings	6
Tax	10
Transport	9
Miscellaneous	11

- (i) Illustrate the information in a pie chart, and
- (ii) If Abiola’s annual income is N50,000.00, calculate how much he spends on Food and Beverages in a month.
- (b) A manufacturer offers a trade discount of 25% and a discount of 5% for prompt payment in cash. How much will a retailer pay for an article marked N50,000.00, if he pays promptly in cash.

Intended Task

The question required candidates’ knowledge of pie chart and trade Discount. Those who attempted it performed fairly well.

Question 13

- (a) The following table indicates a weekly offering of a small church (January – March, 1990).

(b)

Week Month	1 st Week (N)	2 nd Week (N)	3 rd Week (N)
January	69	34	63
February	106	54	34
March	138	46	125

Calculate the 5-week moving average.

- (c) A machine which costs N5,500.00 depreciates by 15% of the reducing balance. How much is the machine worth at the end of 4 years?

Intended Task

The question required candidates' knowledge of moving averages and Depreciation. Candidates performed fairly well in this question.

Question 14

- (a) A shop keeper losses 5% by selling an article at N4,800.00. At what price should he have sold the articles to make profit of 10%.
- (b) A fuel pump costing N20,000.00 was hired at 6% interest per annum. Find the interest the pump would yield in 6 years.
- (c) The rateable value of a house is N540,000. If the government has to estimate for an increase of N16,500.00, what increase in the rates, to the nearest kobo, is necessary?

Intended Task

The question required candidates' knowledge of buying and selling. Candidates performed poorly in the question.

Question 15

- (a) John buys a suite of furniture for N1,920.00. A deposit of 25% is paid and interest at 12% per annum is charged on the outstanding balance. "The balance is paid in 12 monthly installments. Calculate each installment.
- (b) A taxable income is N72,000.00. If tax is paid at 6%, find the amount paid as income tax.
- (c) A man invests N7,000.00 at 6% per annum and another N3,000.00 at 8% per annum. What is the total interest on these investments?

Intended Task

The question required candidates' knowledge of installments, income tax and interest. Those who attempted the question performed averagely.

Candidates' Strengths

- ◆ Good interpretation of questions.
- ◆ Ability to find mode of distribution correctly.

Candidates' Weaknesses

- ❖ Improper use of graph to solve problems.
- ❖ Poor usage of decimal points.
- ❖ Poor knowledge of probability

Suggestions for Improvement

- Assignments involving graph should be given to students.
- Teachers should emphasize the importance of decimal points where applicable.
- Teaching of probability should be intensified.

ADVANCED MATHEMATICS (A02)

General Comments

The paper met the required standard and candidates' performance was good compared to the previous years.

Detailed Comments on Each Question

Question 1

(a) Evaluate using laws of indices: $\frac{3^a - 3^{a-1}}{3^3 \times 3^a - 27 \times 3^{a-1}}$

(b) Express A in terms of B and C in the equation:

$$\frac{B}{\sqrt{7}} = \frac{A}{A-C}$$

Intended Task

The question required candidates' computational skills of indices and subject of formula. Those who attempted it performed excellently.

Question 2

Find the values of x which satisfy the equation: $2^{2x-1} - 15(2^x) = 8$

Intended Task

The question required candidates' knowledge of quadratic equation. The candidates who answered it, performed well.

Question 3

(a) Simplify $\frac{\sqrt{5} - \sqrt{2}}{3\sqrt{3} + 7\sqrt{3}}$

(b) The 3rd and 5th terms of a GP are 32 and 288 respectively. Find the nth term.

Intended Task

The question required candidates' knowledge of rationalization of surd. Those who attempted it performed well.

Question 4

Calculate the:

- (a) length of a chord AB, and
- (b) perimeter of the minor segment cut off by AB, in a circle centre O and radius 5cm. (Take $\pi = 3.142$).

Intended Task

The question required candidates' knowledge of trigonometrics and their ability to recall the cosine and sine formulae. Many candidates who attempted it performed poorly.

Question 5

- (a) Solve for x and z in the following linear equations:

$$2x - 3y + 2z = 2$$

$$x + 2y - 4z = 1$$

$$3x - y + 2z = 2$$

- (b) The vectors \underline{u} and \underline{v} are given as

$$\underline{u} = ai + 2j, \text{ and}$$

$$\underline{v} = -3i + bj$$

If $4\underline{u} - \underline{v} = -i + 5j$ what are the value of a and b?

Intended Task

The question required candidates' ability to simplify simple expression. All the candidates who attempted the question performed poorly.

Question 6

- (a) Draw a table of values for the function $y = 1 + 3 \sin \frac{1}{2} x$, at intervals of $x = 60^\circ$ and for values from 0° to 360° , correct your values to 2 decimals.
- (b) From your table draw the graph of $Y = 1 + 3 \sin \frac{1}{2} x$, using a scale of 1cm to 30° on the x – axis and 2cm to 1 unit on the y – axis.
- (c) Use your graph to solve the equations:
 - (i) $3 \sin \frac{1}{2} x = -1$ and
 - (ii) $1 - 2.71x + 3 \sin \frac{1}{2}x = 0$.

Intended Task

The question required candidates' ability to plot trigonometric graph. Only a few candidates attempted it and they performed poorly.

Question 7

- (a) Find the limit of
- $\frac{2x^2 + x - 10}{x - 2}$ as x approaches 2
 - $\frac{2x^2 - 5}{x^3 + 3x}$ as x approaches infinity
- (b) Find, from the first principles, the differential coefficient of $y = x^{-1}$

Intended Task

The question required candidates' knowledge of limit and differential equation. The candidates who attempted this question performed averagely.

Question 8

- Find the turning points on the curve of $y = x^3 - 6x^2 + 9x - 2$ and distinguish between the maximum and minimum points.
- Find the exact value of $(1.2)^5$ to 3 decimals using the binomial expansion theorem.

Intended Task

The question required candidates' ability to recall some facts on maximum and minimum points of a curve and also to differentiate the two. Those who attempted the question performed poorly.

Question 9

- The 3rd and the 7th terms of an A.P. are -1 and 11 respectively. Find the
 - n^{th} term, and
 - number of terms to have a sum of 10.
- Express $\frac{3+i}{5-i}$ in the form $a + ib$

Intended Task

The question required candidates' knowledge of arithmetic progression. Those who attempted the question performed well.

Question 10

The table below shows the number of people who use ferry weekly in riverine area.

No. of people	10-19	20 - 29	30 - 39	40 - 49	50 - 59	60 - 69	70 - 79	80 - 89
Frequency	1	7	8	15	10	5	3	1

- Represent the data in terms of:
 - class boundaries, and
 - class marks.

- (b) On the same graph draw an/a:
 - (i) Histogram.
 - (ii) Frequency polygon of the distribution.
 - (iii) Estimate the mode from your histogram.
- (c) Draw a cumulative frequency curve of the distribution and use it to estimate the median.

Intended Task

The question required candidate's knowledge of statistics. Those who attempted the question performed well.

Question 11

- (a) The performances of forty candidates in an entrance examination were as follows:

30	45	48	43	33	47	58	15	31	19
54	59	51	46	38	12	18	18	33	41
41	35	23	29	31	37	21	26	48	17
19	31	22	10	36	43	27	55	44	57

- (i) Prepare frequency table using class intervals 10-19, 20-29,...
- (ii) Calculate the (i) mean of the scores, and (ii) Standard deviation.
- (b) Two dice are thrown together once. Find the probability that the sum of the scores is 8 or 10.

Intended Task

The question required candidates' knowledge of standard deviation and their ability to calculate the mean of the scores given. All the candidates who attempted the question performed well.

Question 12

- (a) If N26,800 amounts to N32,400 in $2\frac{1}{2}$ years, find the rate of interest to 2 decimals.
- (b) Ojo paid N120,000.00 for 4% stock at 95 and bought 8000 90k shares at 120k each. If the broker's commission on the stock was $1\frac{1}{2}\%$ and 2% per share on the shares, calculate:
 - (i) the broker's commission on the stock and shares,
 - (ii) the total amount he invested, and
 - (iv) his yearly income.

Intended Task

The question required candidates' knowledge of shares, stocks and commission. Those who attempted it performed poorly.

Question 13

- (a) A wholesaler's catalogue price for an article is N500.00.
This is subject to a trade discount of $12\frac{1}{2}\%$ and a cash discount of 5%.
What will be the cash price to the retailer?
- (b) A banker pays N346,500.00 for a bill of N350,000.00 which has 73 days to run.
Calculate the:
- Banker's rate of discount charged.
 - Actual rate of discount.

Intended Task

The question required candidates' computational skills on discount and commission. Those who attempted it performed well.

Question 14

A man buys a car worth N750,000.00 on Hire Purchase. He pays N200,000.00 on delivery and is to pay the balance at an instalment of N200,000.00 yearly. If interest is charged 5% per annum by the seller, calculate the:

- number of years to complete the payment,
- total interest he pays, and
- amount he pays for the car.

Intended Task

The question required candidates' knowledge of hire purchase. Few candidates attempted it and they performed averagely.

Candidates' Strengths

- ◆ They were able to answer the question on indices and subject formulae.
- ◆ They answered the question on quadratic equation well.

Candidates' Weaknesses

- ❖ Poor computational skills.
- ❖ Improper use of graph to solve problems.
- ❖ Poor knowledge of rationalization of surds.
- ❖ Inability to differentiate between maximum and minimum points
- ❖ Mis-interpretation of questions.

Suggestions for Improvement

- Assignments involving graphs should be given to candidates.
- The teaching of topics like rationalization of surds, maximum and minimum points should be intensified by teachers.
- Students should be taught the right approach to answering questions.

ECONOMICS (003)

General Comments

The questions covered the entire syllabus and candidates' performance was better compared to the previous year.

Detailed Comments on Each Question

Question 1

The table below shows the combination of a number of balls in a bag according to their colours.

Colour	Number of Balls
Blue	25
Brown	15
Green	30
Red	20
Yellow	10

From the table above draw:-

- (a) a pie chart
- (b) a bar chart

Intended Task

The question required the candidates to draw a pie chart and a bar chart.

The candidates performed poorly as they were unable to draw pie chart and bar chart correctly.

Question 2

- (a) Explain the concept of "Equilibrium Price" A market survey reveals the various prices (in naira) of a particular commodity over a given period of time as recorded below. Study the information carefully and answer question (2b) and (2c)
110, 120, 115, 100, 105, 120, 125, 100, 105, 120, 108, 100, 112, 100, 105, 100, 108, 102, 110, 115, 105, 120, 125, 110, 108, 112, 107, 103, 120, 120.
- (b) Present the data in a frequency distribution table.
- (c) Determine the:
 - (i) modal Price
 - (ii) mean price
 - (iii) median Price
 - (iv) the range of the prices.

Intended Task

The candidates were expected to explain the concept of “Equilibrium Price,” present the data in a frequency distribution table and determine the modal, mean, median and range of the prices. Many candidates performed averagely.

Question 3

- (a) Identify and explain the economic system operated in Nigeria.
- (b) State four characteristics of a socialist economy.

Intended Task

The candidates were required to identify and explain the economic system operated in Nigeria and state four characteristics of a socialist economy.

Few candidates attempted this question and performed averagely.

Question 4

- (a) What is production?
- (b) List and explain four factors of production.

Intended Task

The question tested candidates’ knowledge on production. Candidates were required to list and explain four factors of production.

Many candidates answered this question and performed well.

Question 5

- (a) Define the term “Utility”.
- (b) Explain the following utility concepts:
 - (i) marginal utility
 - (ii) average utility
- (c) State the condition under which a consumer will maximize utility when he is consuming:
 - (i) two Commodities only
 - (ii) more than two commodities.

Intended Task

The question required the candidates to define the term utility, explain marginal and average utility and state the condition under which a consumer will maximize utility when he is consuming two commodities only and more than two commodities.

Many candidates did not state the condition under which a consumer will maximize utility for consuming two commodities only and for more than two commodities. However they performed well.

Question 6

- (a) What is labour force?
- (b) Explain four factors that can affect the size of labour force in a country.

Intended Task

The question tested candidates' knowledge on labour force. Candidates were to explain four factors that can affect the size of labour force of a country.

Many candidates attempted the question and performed well.

Question 7

- (a) What is a co-operative society?
- (b) Highlight five advantages that a member can derive from a co-operative society.

Intended Task

The question tested candidates' knowledge on co-operative society. Candidates were to highlight five advantages a member can derive from a co-operative society.

The candidates who answered this question performed well.

Question 8

- (a) Distinguish between supply and elasticity of supply.
- (b) Discuss four factors that influence the supply of agricultural products in Nigeria.

Intended Task

The question tested candidates' ability to differentiate between supply and elasticity of supply. The candidates were asked to distinguish between supply and elasticity of supply as well as discuss five factors that influence the supply of agricultural products in Nigeria.

The candidates who attempted the question were able to state the differences between supply and elasticity of supply. However, they could not give four clear factors that influence the supply of agricultural products in Nigeria. Candidates performed averagely.

Question 9

- (a) Define the term "economic planning" .
- (b) Give five reasons why the government should embark on economic planning.

Intended Task

The question tested candidates' knowledge on economic planning. Candidates were required to define the term "economic planning" and give five reasons why the government should embark on economic planning.

The candidates who answered this question performed well.

Question 10

- (a) State four objectives of OPEC.
- (b) Discuss four problems encountered by OPEC in achieving its aims.

Intended Task

The candidates were required to state four objectives of OPEC and discuss four problems encountered by OPEC in achieving its aims.

Many candidates attempted this question and they performed well.

Question 11

- (a) What is the effect of corruption on the economic development of Nigeria?
- (b) Outline four ways the government of Nigeria has adopted in the fight against corruption.

Intended Task

The question required the candidates to explain the effects of corruption on the development of Nigeria and outline four ways the government has adopted in the fight against corruption.

The candidates who attempted this question were few and performed poorly.

Question 12

- (a) Explain four advantages of international trade.
- (b) State four instruments used in controlling international trade.

Intended Task

The candidates were required to explain four advantages of international trade and four instruments used in controlling international trade.

The candidates who attempted this question performed well.

Candidates' Strength

Ability to understand questions and answer correctly.

Candidates' Weaknesses

- ◆ Poor drawing skills.
- ◆ Poor grammatical expressions.
- ◆ Poor computational skills.
- ◆ Cumbersome definitions among the students.

Suggestions for Improvement

- Teachers should give examples relating to Nigerian context.
- Appropriate text books should be consulted by teachers to identify the easiest way of communicating Economic concepts to students.
- Importance of drawing/sketching should be emphasized.
- The teaching of mathematical application should be intensified,
- Students should cultivate the habit of reading text books and doing assignments to be marked by the teachers.

ECONOMICS ADVANCED (A03)

General Comments

The questions were in line with the syllabus and the candidates performed well in most of the questions.

Detailed Comments on Each Question

Question 1

- (a) Define skewness
- (b) Outline the types of skewness with relevant illustrations.

Intended Task

The candidates were required to define skewness and outline the types of skewness with relevant illustrations. The candidates only defined skewness without illustration or drawings. Hence, they performed poorly.

Question 2

List two advantages and two disadvantages of capitalism.

Intended Task

The candidates were required to list two advantages and two disadvantages of capitalism. Many candidates could not differentiate between advantages and disadvantages from characteristic of capitalism. Hence, they performed poorly.

Question 3

Differentiate between exchange rate and foreign exchange.

Intended Task

Candidates were to differentiate between exchange rate and foreign exchange. Many candidates who attempted this question performed poorly.

Question 4

List four instruments of government debt.

Intended Task

Candidates were expected to list four instruments of government debt. Many candidates who attempted this question performed well.

Question 5

Outline four mathematical averages relating to the mean.

Intended Task

Candidates were required to outline four mathematical averages relating to the mean. Many candidates who attempted the question performed poorly.

Question 6

Distinguish between firm supply and market supply.

Intended Task

Candidates were expected to differentiate between firm supply and market supply. Candidates who attempted this question performed poorly.

Question 7

Outline four of the basic economic problems faced by all economies.

Intended Task

The question tested the ability of the candidates to outline four of the basic economic problems faced by all economies.

Candidates who attempted this question performed well.

Question 8

Differentiate between secondary and tertiary production with examples.

Intended Task

Candidates were required to differentiate between secondary and tertiary productions with examples. Candidates who attempted this question were unable to give examples of secondary and tertiary productions, hence, they performed averagely.

Question 9

What are the necessary and sufficient conditions for the equilibrium of the perfectly competitive firm in the short-run?

Intended Task

Candidates were expected to explain the necessary and sufficient conditions for the equilibrium of the perfectly competitive firm in the short-run. Many candidates could not state the conditions for equilibrium. Hence, they performed poorly.

Question 10

What is the difference between economic growth and economic development?

Intended Task

Candidates were expected to distinguish between economic growth and economic development. Many candidates could not tell the difference hence, they performed poorly.

Question 11

The marginal Utility and Price Schedules of two commodities, bread (B) and Coca Cola (C) consumed by a consumer are given in the table below:

Q	MU _B	P _B (₦)	MU _B P _B	MU _C	P _C	MU _C P _C
1.	-	30	-	-	10	-
2.	90	30	3	40	10	4
3.	90	30	3	30	10	3
4.	90	30	3	25	10	2.5
5.	90	30	3	20	10	2
6.	90	30	3	15	10	1.5
7.	90	30	3	10	10	1

If the budget of the consumer which must be exactly exhausted is ₦240.00,

- What quantity of each commodity will be consumed?
- How does he allocate his budget on the two commodities?
- What is the condition for the equilibrium of the consumer?

Intended Task

The candidates were given a marginal utility and price schedules of two commodities (bread and cocoa cola) from which they were to find the quantity of each commodity that will be consumed, the allocation of budget to be made to the two commodities and what the condition for the equilibrium of the consumer will be if the budget of the consumer that must be exactly exhausted is N240.00

Many candidates performed poorly due to their poor mathematical knowledge and skills.

Question 12

Study the following table carefully and answer the questions that follow:

Fixed Factor Acres of land	Variable factor Units of Labour	Total Product (kg)	Average Product (kg)	Marginal Product (kg)
2	1	8	8	-
2	2	(a)	9	10
2	3	36	(b)	(d)
2	4	48	12	(e)
2	5	55	11	7
2	6	60	(c)	5
2	7	60	8.6	5
2	8	56	7	(f)

- (i) Calculate the missing values in (a), (b), (c), (d), (e), and (f)
- (ii) Draw the total and marginal product curves on the same graph.
- (iii) From the graph, explain the relationship between the total and marginal product curves.
- (iv) Explain the law of production the table illustrates.

Intended Task

The candidates were required to study the table, calculate the missing values in a, b, c, d, e, and f, draw a total and marginal product curves, explain the relationship between the total and marginal product curves and explain the law of production, the table illustrates.

Many candidates did not draw the graph on graph sheet. However, they performed well.

Question 13

Given that:

$$Q = 50 - 0.5p \text{ (Demand function)}$$

$$C = 50 + 40Q \text{ (Cost function)}$$

- (i) Determine the profit maximizing output.
- (ii) What is the price per unit?
- (iii) From the graph, explain the relationship between the total and marginal product curves..
- (iv) Calculate the total revenue at this output.

Intended Task

Candidates were required to determine the profit maximizing output, calculate the total cost and revenue at the profit maximizing output and find the price per unit of the given demand and cost function

Many candidates who attempted this question performed poorly.

Question 14

- (a) What are Millennium Development Goals (MDGs)?
- (b) Identify an education related goal on MDGs
- (c) Discuss what the Nigerian government is doing to achieve the goal.

Intended Task

Candidates were expected to state the Millennium Development Goals, identify an education related goal and discuss what Nigerian government is doing to achieve the goal.

Many candidates performed poorly as they could not identify education related goals.

Question 15

Write short notes on the following international organizations:

- (i) The World Bank.
- (ii) The International Monetary fund.
- (iii) African Development Bank.

Intended Task

Candidates were required to write short notes on the World Bank, International Monetary Fund and African Development Bank.

Many candidates who attempted this question performed well.

Question 16

Discuss the economic and socio-economic characteristics that are common to developing countries.

Intended Task

The question tested the candidates' knowledge on economic and socio-economic characteristics of developing countries. Candidates were required to discuss the economic and socio-economic characteristics that are common to developing countries.

Many candidates who attempted this question performed well.

Question 17

- (a) Discuss three characteristics of the perfectly competitive firm.
- (b) With the aid of relevant illustrations, show that a perfectly competitive firm in short-run equilibrium may not make excess profit.

Intended Task

Candidates were expected to discuss three characteristics of the perfectly competitive firm and give illustrations to show that perfectly competitive firm in short-run equilibrium may not make excess profit.

The candidates who answered this question performed well.

Question 18

Discuss five sources of finance open to the public limited company.

Intended Task

Candidates were expected to discuss five sources of finance open to the public limited company.

The candidates who attempted this question performed well.

Question 19

- (a) What are the likely benefits your country will derive from ECOWAS?
- (b) What problems are faced by the community?

Intended Task

The candidates were required to state the likely benefits of their country from ECOWAS and the problems faced by the ECOWAS community.

Many candidates who attempted this question performed poorly as they could not express themselves.

Question 20

- (a) With the aid of relevant illustration, distinguish between a 'change in quantity demanded' and a 'change in demand'.
- (b) What are the likely causes of change in demand for soft drinks in Nigeria?

Intended Task

The question tested the candidates' knowledge on demand and supply. Candidates were required to distinguish between a 'change in quantity demanded' and a 'change in demand' using illustrations and give likely causes of change in demand of soft drinks in Nigeria.

Many candidates who answered this question performed well.

Candidates' Strength

- ◆ Ability to interpret questions and answer correctly.

Candidates' Weaknesses

- ❖ Poor mastery of basic economic concepts and principles.
- ❖ Poor grammatical expressions.
- ❖ Poor mathematical background.

Suggestions for Improvement

- Teachers should be encouraged to draw graphs on graph sheets.
- Students should cultivate the habit of copious reading of materials on Economics in a sustainable manner.
- Before candidates register for Advanced Level, there must be evidence of passing Ordinary Level Economics.
- Candidates should be taught how to answer short structured questions before the Examinations.
- Teachers should be encouraged to teach all aspects of the syllabus.
- Candidates should practice drawing of diagrams and calculations before examination period.

PHYSICS (004-1)

General Comments

The questions covered the syllabus and candidates' general performance was good and better than the previous year.

Detailed Comments on Each Question

Question 1

- (a) (i) What is meant by a machine?
- (ii) List two examples of a simple machine.
- (iii) Explain the statement "the velocity ratio of a machine is 5".
- (b) (i) Define the efficiency of a machine.
- (iii) Explain why a machine can never be 100% efficient.
- (c) A screw jack 25% efficient and having a screw of pitch 0.4cm is used to raise a load through a certain height. If in the process the handle turns through a circle of radius 40.0cm, calculate the
 - (i) Velocity ratio of the machine.
 - (ii) Mechanical advantage of the machine.
 - (iii) Effort required to raise a load of 1000N with the machine (Take $\pi=3.14$)

Intended Task

The question tested candidates' knowledge on a simple machine. Candidates performed well.

Question 2

- (a) (i) State five assumptions of the kinetic molecular theory of gases.
- (ii) Using the kinetic theory, explain expansion in solids.
- (b) With the aid of diagram, describe an experiment to show that water is a bad conductor of heat.
- (c) A uniform capillary tube closed at one end contains dry air trapped by a thread of mercury 8.5×10^{-2} m long. When the tube was held horizontally the length of the air column was 5.0×10^{-2} m, when it was held vertically with the closed end downward, the length was 4.50×10^{-2} m. Determine the value of the atmospheric pressure.

$$[g=10\text{m/s}^2, \text{ density of mercury} = 1.36 \times 10^4\text{Kg m}^{-3}]$$

Intended Task

The question tested candidates' knowledge on Kinetic Theory. Candidates performed poorly.

Question 3

- (a) Define the following terms as applied to convex mirror:
- (i) Principal focus.
 - (ii) Pole.
 - (iii) Radius of curvature.
- (b) (i) State one advantage and one disadvantage of using convex mirror as a driving mirror.
- (ii) Draw a clearly labeled diagram to illustrate how two converging lenses may be arranged to form a compound microscope.
- (c) An object 2.5mm long is viewed through a converging lens of focal length 10.0cm held close to the eye. A magnified image of the object is formed 30.0cm from the lens. Determine the:
- (i) distance of the object from the lens.
 - (ii) size of the image
 - (iii) power of the lens.

Intended Task

Candidates were tested on their knowledge of a convex mirror. Candidates performed well as they were able to define the principal focus of a convex mirror. Many of the candidates also stated one advantage and one disadvantage of using a convex mirror as a driving mirror.

Question 4

- (a) (i) Explain the following terms:
- (a) electrolyte.
 - (b) electroplating.
- (ii) What is meant by the statement “The electrochemical equivalent of copper is 3.0×10^{-4} g/coul”?
- (b) (i) Classify the following substances as electrolytes and non-electrolytes: sugar solution, grape, paraffin, salt solution and fruit juice.
- (c) (i) State Faraday’s first law of electrolysis.
- (ii) Calculate the time taken to deposit 1.56g of nickel using a current of 2.34A in a nickel – plating process, assuming that 1.20g of nickel are deposited per ampere hour.

Intended Task

The question tested candidates’ knowledge on electrolyte. Many of the candidates who attempted the question performed well.

Question 5

- (a) Briefly explain the term “Emission line spectrum.”
- (b) Draw a labeled diagram showing the structure of a simple type of photo-cell and explain its mode of operation.
- (c) State two:
- (I) reasons to show that X-rays are waves.
 - (II) uses of X-rays other than in medicine.
 - (III) An electron jumps from an energy level of -1.6eV to one of -10.4eV in an atom. Calculate the:
 - (a) Energy of the emitted electron.
 - (b) Wavelength of the emitted radiation.
- [$h = 6.6 \times 10^{-34} \text{ JS}$, $c = 3.0 \times 10^8 \text{ m/s}$ $ev = 1.6 \times 10^{-14}$]

Intended Task

The question tested candidates' knowledge on emission line spectrum, type of photo - cell and its mode of operation, as well as electron.

Many candidates who attempted the question performed well except a few that could not solve the calculation aspect of the question.

Candidates' Strengths

- ◆ Candidates answered questions on simple machine correctly
- ◆ Many candidates were able to define principal focus of a convex mirror, the pole and the radius of curvature.
- ◆ Candidates answered the questions on X-rays correctly.
- ◆ Candidates were able to classify the given substance as electrolytes and non electrolytes.

Candidates' Weaknesses

- ❖ Poor computational skills.
- ❖ Inability to attempt questions on kinetic molecular theory.
- ❖ Poor drawing skills.

Suggestions for Improvement

- Teachers should involve candidates in calculative topics.
- Teachers should emphasis the teaching of kinetic molecular theory of gas.
- Teachers to intensify in the teaching of graphical work.

CHEMISTRY (005-1)

General Comments

The questions covered the syllabus and the candidates' performance was generally good.

Detailed Comments on Each Question

Question 1

(a) Define the following terms:

(i) A mixture

(ii) A compound

(b) Give three differences between a (i) and a(ii)

(c) Use the following portion of the periodic table to answer questions (i-v).

I	II	III	IV	V	IV	VII	VIII
A							B
	C	D					
E						F	G

Which of the letter(s):

(i) Belong(s) to the Halogens

(ii) Is/are alkaline metal(s)

(iii) Can form a trivalent ion

(iv) Is/are chemically unreactive

(v) Name the type of chemical bond that can be formed between elements E and G.

(d) Analysis of a sample of an organic compound showed that it contains 39.9% carbon, 6.9% hydrogen and the rest is oxygen.

(i) Determine its empirical formula.

(ii) If the relative molecular mass is 60, determine the molecular formula of the compound.

(C = 12; H 1; O = 16).

(e) Mention two information you cannot derive from a chemical equation.

(f) Give the reason why water gas is a better fuel than producer gas.

Intended Task

Candidates were required to give the definition of a mixture, a compound and to show their understanding of empirical formula. Many candidates performed averagely.

Question 2

- (a) (i) State the Faradays' first law of electrolysis.
(ii) Show graphical representation of the Faraday's first law.
(iii) State three factors which influence electrolytic deposition.
- (b) (i) Outline two differences between electrolytic and galvanic cells.
(ii) An element has mass number 23 and atomic number 11, show the arrangement of its electrons on the energy sub-levels.
- (c) (i) What are catalysts?
(ii) Outline three properties of catalysts.
- (d) State three major agricultural significances of radiations.
- (e) State two major divisions of chemical industries giving two examples of each.

Intended Task

The question required candidates to state the Faraday's first law and show its graphical representation. The candidates were equally required to explain what catalysts and radiation are.

Candidates performed fairly well.

Question 3

- (a) (i) Define basicity of an acid.
(ii) Copy and complete the table below:

	Acids	Basicity
I.	HCOOH	-
II.	H ₃ PO ₄	-
III.	H ₂ SO ₄	-

- (b) Use the list of the compounds mentioned below to answer question b(i-v)
NaH₂PO_{4(aq)}¹, Na₂CO₃¹, 10H₂O, Ca(NO₃)_{2(ac)}¹
Silical gel, Na₂Zn(OH)_{4(ac)}¹
Conc. H₂SO₄, Zn(OH)₄²₁
(NH₄)₂ FeSO₄, 12H₂O

Which of the compounds above is/are:

- (i) an acid salt.
(ii) a basic salt.
(iii) a normal salt.
(iv) a double salt.
(v) a drying agent for all gases.
(vi) an efflorescent substance.
(II) Mention two methods that can be used to prepare an insoluble salt.
- (c) (i) What is the pH of a solution whose hydroxide ion, OH is 0.003m?
(ii) Mention two importance of pH.

- (d) (i) List two metals extracted by electrolysis.
 (ii) Mention three products obtained during the electrolysis of brine using carbon electrodes.
 (iii) Write an equation for the reaction at the cathode (dii) above.

Intended Task

The question required candidates' knowledge of basicity of an acid and classification of compound into:

- (i) an acid salt.
 (ii) a basic salt.
 (iii) a normal salt.
 (iv) a double salt.
 (v) a drying agent for all gases.
 (vi) an efflorescent substance.

The performance of candidates was generally good.

Question 4

- (a) (i) Give an expression for the Gibbs free equation, defining all the terms used.
 (ii) In the reaction: $3\text{Fe}_{(s)} + 4\text{H}_2\text{O}_{(l)} \rightleftharpoons \text{Fe}_3\text{O}_{4(s)} + 4\text{H}_2\text{O}_{(g)}$.
 Show the equilibrium constant in terms of concentration.
- (b) (i) List three isotopes of hydrogen.
 (ii) What is meant by the term reversible reaction?
- (c) (i) List three examples of petrochemical products.
 (ii) Use a labelled diagram to illustrate catalysis in a typical exothermic reaction.
- (d) (i) State the first law of thermodynamics.
 (ii) The pressure of 4 atmosphere acted on 8 moles of an ideal gas at -23°C . What volume in dm^{-3} will the gas occupy at the same temperature?

Intended Task

The question required candidates' knowledge of Gibbs free equation, isotopes of hydrogen, petrochemical product, catalysis in a typical exothermic reaction and the first law of thermodynamics. Candidates' performed averagely.

Question 5

- (a) (i) With a labelled diagram only show how a few sample of trioxonitrate (V) acid is prepared in the laboratory.
 (ii) Name three oxides of nitrogen.
- (b) (i) Draw the two stable configurations of benzene.
 (ii) State two uses of benzene.
- (c) (i) Write the structure and IUPAC name of one primary alkanol and one secondary alkanol with the same molecular formula $\text{C}_4\text{H}_{10}\text{O}$:

- (iii) Name the term used to describe the relationship that exists between the alkanols in c(i) above.
- (iv) State the classes of organic compounds formed when:
- (i) alkanols are hydrated.
 - (ii) alkanols react with alkanolic acids.
 - (iii) secondary alkanols are oxidized.
- (d) Name the crystalline allotropes of sulphur.

Intended Task

The question required candidates' knowledge of trioxonitrate (V) acid and alkanolic. Candidates performed averagely.

Candidates' Strengths

- ◆ Many candidates gave good explanation of the concept "basicity"
- ◆ Many candidates kept to IUPAC naming procedure.
- ◆ The candidates got the graphical illustration correctly.

Candidates' Weaknesses

- ❖ There was poor responses by candidates to electronic configuration.
- ❖ Many candidates lack skills in the writing of structures of organic compounds and putting the accompanying bond property correctly.

Suggestions for improvement

- There should be adequate coverage of syllabus.
- Emphasis should be laid on the practical aspect of Chemistry.
- Relevant textbooks and seminar papers should be made available to the candidates.
- Emphasis should be laid on teaching of English Language.

CHEMISTRY (ALTERNATIVE TO PRACTICAL) (005-2)

General Comments

The question covered the syllabus and the candidates' performance was generally good.

Detailed Comments on Each Question

Question 1

G is a solution containing 4.90g of tetraoxosulphate VI acid per dm^3

H is a solution containing 6.00g of impure sodium hydroxide per dm^3 25.0 cm^3 portion of solution H neutralized 20.40 cm^3 of solution G using phenolphthalein as indicator.

- (a) (i) State the colour change of the indicator during the titration. _
- (ii) Write a balanced equation for the reaction.
- (b) Using the information above, calculate the:
- (i) concentration of G in mol dm^{-3} , (H = 1.00; S = 32.0; O = 16.0, Na = 23.0)
- (ii) Concentration of pure sodium hydroxide solution in H, in mol dm^{-3} and hence the concentration in g dm^{-3}
- (iii) Percentage of impurity of H.
- (iv) Give one source of impurity of sodium hydroxide

Intended Task

Candidates were required to explain the following concepts: titration, calculation and give the meaning of balance equation. Candidates performed averagely.

Question 2

(a) Copy and complete the table below showing the results of a qualitative analysis of a mixture J.

Test	(9) Observation	Inference
(i) J+Water+Filteration	partially soluble, given colourless filterate and black residue	
(ii) Filterate + litmus paper	changes blue litmus paper to red	
(iii) Filterate + Acidified -----K ₂ Cr ₂ O ₇ solution	Changes from orange to green colour	
(iv) Filterate + saturated NaHCO ₃ solution		CO ₂ from
(v) Residue + dil, HCl		H ₂ indicating the presence of a metal
(vi) Residue + dil, HCl+ Nh ₃ (aq) in drops + in excess		Fe ²⁺
		Fe ²⁺

Deduce the metal in the mixture J.

(c) A colourless organic liquid E, was burnt in excess air to give two colourless and odourless gases, F and G, as products. E does not decolorize bromine liquid; F turns lime water milky while G turns blue cobalt (ii) chloride paper pink.

- (i) Identify F and G;
- (ii) Name the class of organic compounds E belongs;
- (iii) Using a named organic liquid E, write a balanced equation between E and excess air. (6 marks)

Intended Task

The question required candidates to copy and compute the table given above showing the result of a qualitative analysis of a mixture. They were also expected to give their understanding of organic compound. Candidates performed poorly.

Question 3

- (a) You are required to prepare 250cm³ of Na₂CO₃ of 0.500 mol dm⁻³ Na₂CO₃ solution.
- (i) Calculate the mass of the Na₂CO₃ that would be required to prepare the 250cm³ of 0.500 mol dm³ solution. (Na₂CO₃ = 106g mol⁻¹)

(3 marks)

- (ii) Outline the laboratory procedure used to prepare the 250cm³ of 0.500 mol dm⁻³ Na₂CO₃ solution indicating the apparatus use.

Intended Task

Candidates were required to prepare 250cm² of mol dm³ Na₂CO₃ of 0.500 mol dm³ Na₂CO₃ solutions. They were also expected to outline the Laboratory procedure used to prepare the 250cm³ of 0.500 mol dm³ Na₂CO₃ solution indicating the apparatus used.

Candidates performed averagely

Candidates' Strengths

- ◆ Many of the candidates were able to balance the chemical equation between NaOH and H₂SO₄ solutions.
- ◆ Many of the candidates answered question No. 1 correctly.

Candidates' Weaknesses

- ❖ Poor presentation of answers.
- ❖ Poor knowledge of practical experience in the laboratory

Suggestions for Improvement

- Candidates should be exposed to practical experience in the laboratory.
- More qualified teachers should be employed to teach the subject, especially in private schools.

BIOLOGY (006-1)

General Comments

The questions covered the syllabus and the candidates' performance was good.

Detailed Comments on Each Question

Question 1

- (a) Define:
 - (i) Osmosis
 - (ii) Diffusion
- (b) Explain why simple diffusion is an efficient means of gaseous exchange in lower organisms.
- (c) (i) List four excretory organs in living organisms.
 - (ii) Mention one substance excreted by each of the organs listed in c(i) above.

Intended Task

The candidates were required to define osmosis, diffusion and explain why simple diffusion is an efficient means of gaseous exchange in lower organism. They were also to list four excretory organs in living organisms and mention one substance excreted by each of the organs listed above.

Candidates performed fairly well in this question.

Question 2

- (a) Define the term "Dispersal of Seeds".
- (b) State two advantages of dispersal of seeds.
- (c) (i) Mention three agents of dispersal
 - (ii) How is each of the following adapted to its mode of dispersal?
 - (i) Coconut fruit
 - (ii) Tridax
 - (iii) Cotton
 - (iv) Water lily.

Intended Task

Candidates were expected to define dispersal of seeds, and state two advantages of dispersal of seed. They were also to mention three agents of dispersal and how coconut fruit, tridax, cotton and water lily adapt to its mode of dispersal.

The candidates performed well.

Question 3

- (a) Define:
 - (i) Macronutrients
 - (ii) Micronutrients
- (b) Mention two examples of:
 - (i) Macronutrients
 - (ii) Micronutrients.
- (c) State one symptom associated with the deficiency of the following elements:
 - (i) Magnesium.
 - (ii) phosphorus.
 - (ii) Nitrogen.

Intended Task

Candidates were expected to define macronutrients, micronutrients, mention two examples of each of them and state one symptom associated with the deficiency of magnesium, phosphorus and Nitrogen elements.

Candidates who attempted the question performed well.

Question 4

- (a) State one function of the following parts of the female reproductive system.
 - (i) Fallopian tube
 - (ii) Uterus
 - (iii) cervix
- (b) Define the following terms:
 - (i) Fertilization
 - (ii) Gestation
 - (ii) Lactation
- (c) Mention two animals in each of the following classes:
 - (i) Herbivore
 - (ii) Carnivore.

Intended Task

The candidates were required to state one functions of fallopian tube, uterus, cervix as parts of the female reproductive system and define the terms fertilization, Gestation and Lactation. They were also to mention two animals each that are Herbivore and carnivore.

Some candidates found it difficult to satisfactorily define gestation and lactation and also the function of the cervix as part of the female reproductive system.

They therefore performed poorly.

Question 5

- (a) Define the term “Dentition”
- (b) State three characteristics of enzymes.
- (c) Mention the end product of digestion of the following food nutrients:
 - (i) Starch
 - (ii) Protein
 - (iii) Lipid

Intended Task

The question required the candidates’ knowledge of dentition, enzymes and the end product of digestion in starch, protein and Lipid.

Candidates performed fairly well in this question.

Question 6

- (a) Define each of the following terms as used in Ecology:
 - (i) habitat
 - (ii) ecosystem
 - (iii) predation
 - (iv) competition
 - (v) population
- (b) Mention two instruments that can be used to determine the size of a population.
- (c) (i) Give reasons why tertiary consumers are fewer in number than secondary consumers in an ecosystem.
 - (ii) State one ecological use of each of the following instruments:
 - (i) barometer
 - (ii) secchi disc
 - (iii) pooter

Intended Task

Candidates were required to define these terms used in ecology: habitat, ecosystem, predation, competition and population. They were to mention two instruments that can be used to determine the size of a population and give reasons why tertiary consumers are fewer in number than secondary consumers in an ecosystem. Candidates were further required to state one ecological use of barometer, secchi disc and pooter.

Many of the candidates could not give reasons why tertiary consumers are fewer in number than secondary consumers in an ecosystem. They also found it difficult to define population.

Candidates performed fairly well.

Candidates' Strength

- ◆ Most candidates answered questions relating to definitions correctly.

Candidates' Weaknesses

- ❖ Poor grammatical skills.
- ❖ Wrong approach in answering questions.
- ❖ Wrong spelling of technical and biological terms.
- ❖ Poor identification of key ecological instruments.

Suggestions for Improvement

- Teachers should encourage reading culture among students.
- Recruit qualified and dedicated teachers.
- Use of instruments and materials as teaching aids should be cultivated.
- At least one diagram is necessary in Biology essay.

BIOLOGY (ALTERNATIVE TO PRACTICAL) – 006-2

General Comments

The questions covered the syllabus but the language in the question was ambiguous and not so straight forward. However, the candidates performed well.

Detailed Comments of Each Question

Question 1

- (i) Name the two physical processes that control transportation of materials in plants.
- (ii) Mention two factors on which the system of classification devised by carolus linnaean is based.
- (iii) State the two divisions of a living cell.
- (iv) Name two protozoan diseases in man.
- (v) Name the blood vessel which carries blood from the alimentary canal to the liver.
- (vi) Mention three types of skeleton found in invertebrates.
- (vii) State two functions of the mammalian ear.
- (viii) Mention two control measures of diarrhoea and dysentery.
- (ix) State two relationships between competition and succession.
- (x) Mention two types of ecological composition found in an ecosystem.
- (xi) Mention two types of host parasite relationships with suitable examples.
- (xii) State two ways by which malaria fever can be controlled.
- (xiii) Mention two ways by which HIV(AIDS) can be transmitted.
- (xiv) Mention two symptoms associated with cholera.
- (xv) Name the four main groups of micro-organisms that cause diseases.

Intended Task

The questions required candidates' knowledge and ability to recall some biological terms. Many of the candidates seemed to be confused on what the question on the two divisions of living cell was referring to. Generally, candidates performed well.

SECTION B

Question 2

Figure 1

- (i) Name the part of bone in figure 1.
- (ii) Label the parts a – f
- (iii) The part labeled a in the diagram is for the attachment of bone called.
- (iv) Name the bone that forms a joint at the point labeled e.
- (v) Copy and complete the table below:

	Type of joint	Location in the body
a.	Ball and socket	-
b.	-	Elbow/knee
c.	Sliding/gliding	-
d.	-	Neck

Intended Task

The candidates were required to name and label the parts in the diagram. They were also to name the types of joint and their location in the body.

Candidates performed fairly well in this question.

Question 3

- (i) Label the parts a – j
- (ii) Name two parts of respiration in mammals.
- (iii) Using descriptive equation (in words), describe the respiration that takes place during strenuous exercises in human.

- (iv) State three differences between photosynthesis and respiration.
- (v) Name the structure through which air circulates round plant tissues during respiration.

Intended Task

The candidates were required to label the various parts in the diagram and demonstrate their knowledge of respiration in mammals. They were also to state the differences between photosynthesis and respiration and name the structure through which air circulates round plant tissues during respiration.

Those who attempted the question performed well.

Question 4

- (i) Identify specimens A and B without reasons.
- (ii) In a tabular form state three differences in external features between specimens A and B.
- (iii) Explain how four observable Features of specimen A adapt the organism to life in water.
- (iv) List two structural modifications of specimen B which adapt it to feed on
 - (a) Nectar
 - (b) Flesh.....
- (v) To which class of animals do specimens A and B belong?

Intended Task

The questions required candidates' knowledge and ability to identify the specimens, state their differences, how they adapt to life in water and the class of animals they belong to.

Many of the candidates were able to state the differences between both specimens and place them in the classes they belong to. However specimen A looked like a toad as well as a frog, which got most candidates confused.

Candidates performed fairly well in this question.

Question 5

- (a) Use the organisms listed below to construct a simple food chain.
 - (i) Toad
 - (ii) Mucuna
 - (iii) Grasshopper
 - (iv) Snake
 - (v) Hawk
- (b) (i) Mention two transmittable characters in plants.
 (ii) State two functions of auxin in plants.
- (c) State one reason why mucor and spirogyra are grouped as thallophyta.
- (d) State the class to which each of the organisms listed below belong.
 - (i) Frog
 - (ii) Lizard
 - (iii) Parrot
 - (iv) Rabbit

Intended Task

The questions required candidates' knowledge on food chain, transmittable characters in plants and the reason why mucor and spirogyra are grouped as thallophyta. They are also required to state the classification of organisms.

Most candidates who attempted the questions were able to draw food chain correctly, they were also able to mention the transmittable characters and place the various organisms into their different classes correctly. Hence, they performed well.

Candidates' Strength

- ◆ Most candidates answered question five correctly and they performed well.

Candidates' Weaknesses

- ❖ Poor grammatical expressions.
- ❖ Spelling mistakes in technical terms.
- ❖ Poor knowledge on some biological concepts and terminologies.
- ❖ Poor drawing and labeling.
- ❖ Inability to interpret the questions.

Suggestions for Improvement

- Qualified English teachers should be employed to teach English language in all technical and vocational schools.
- Teachers of Biology should lay more emphasis on the fundamental concepts, terminologies and definitions of biological phenomena.
- Practical lessons should regularly be attended by candidates.
- The drawing of each specimen should be clear and devoid of ambiguity.

LITERATURE –IN-ENGLISH (007-2)

General Comments

The questions covered the syllabus and candidates performed fairly compared to the previous year.

Detailed Comments on Each Question

Question 1

FEMI OSOFISAN Women of Owu

Discuss the character and roles of Erelu Afin in the play Women of Owu.

Intended Task

The question required candidates to discuss one character and role of Erelu Afin. Candidates performed fairly.

Question 2

The gods and goddesses have “hands in the tragedy of the Owu” Discuss.

Intended Task

The question required candidates to prove whether or not the gods and goddesses had hands in the tragedy of Owu.

Candidates performed fairly well.

Question 3

KOBINASEKYI: The blinkards

Discuss incidents that show the theme of clash of African and European cultures in The Blinkards

Intended Task

The question required candidates’ ability to discuss incidents showing the theme of clash of African and Europeans cultures.

Candidates performed fairly well.

Question 4

Compare the character of Mrs. Brofusem with that of Lawyer Onyindzi.

Intended Task

The question required candidates to compare the character of Mrs. Borofusem with that of Onyindzi.

Candidates performed fairly well.

NON-AFRICAN DRAMA

Question 5

GEORGE BERNARD SHAW: Arms and the Mean

Comment on the prevailing situation that led to the entry into Raina's room by a Serbbian solder. What it significance in Raina's life?

Intended Task

The question required candidates to comment on the prevailing situation and its significance in Raina's life.

Candidates performed fairly well.

Question 6

What is the status, role and relationship between Nicola and Lonka in Arms and the Man?

Intended Task

The question required candidates to discuss the status, role and relationship between Nicola and Lonka.

Candidates performed fairly well.

Question 7

OSCARWILDE: The Importance of Being Earnest

With close reference to the text, examine the satirical elements in Oscar Wilde's The importance of Being Earnest

Intended Task

The question required candidates to examine the satirical element in the play.

Candidates performed fairly well.

Question 8

Discuss Wilde's dramatic style of using mistaken identity and how it contributed to the development of the play.

Intended Task

The question required candidates to discuss the dramatic style of the use of mistaken identity and its contribution to the play development.

Candidates performed fairly well.

Question 9

Examine the images employed in Sola Owonibi's "Homeless Not Hopeless".

Intended Task

The question required candidates to examine the images employed in Sola Owonibi's Homeless Not Helpless.

Candidate performed fairly well.

Question 10

What is the importance of the reference to 'mother' in Oswald Mtshal's "Boy on a Swing"?

Intended Task

The question required candidates to discuss the importance of the reference to 'mother' in Oswald Mtshal's Boy on a swing."

Candidates performed fairly.

Question 11

How does the poet condemn the works of astrologers in "Upon a Honest Man's Fortune".

Intended Task

The question required candidates to explain how the poet condemned the works of astrologers in “Upon a Honest Men’s Fortune”. Candidates performed fairly.

Question 12

To what extent is “Daffodils” by William Wordsworth a nature poem?

Intended Task

The question required candidates to explain what extent “Daffodils” by William words worth is a nature poem.

Candidates performed fairly.

Candidates’ Strengths

- ◆ Few candidates grasped the demands of the questions and gave a fair account of the questions.
- ◆ Few candidates were able to use apt quotations to support their answers in poetry.
- ◆ Many candidates were able to give a fair account of African drama.

Candidates’ Weaknesses

- ❖ Poor grammatical expressions.
- ❖ Misinterpretation of the questions.
- ❖ Poor usage of quotation from the poems.

Suggestions for Improvement

- Candidates need to read and study the selected textbooks and other reference materials.
- Candidates should make efforts to read a lot of novels etc in order to improve on their vocabulary and language power which is essential for good mark.
- The Board should send the syllabus and Literature textbooks to schools early enough to enable both teachers and the students get prepared for the examinations.
- The syllabus on Literature should be made available to external candidates of the Board to enable them give adequate coverage to the texts before coming forward for the examination.

INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) 008-1

General Comments

The questions covered the syllabus and candidates performed well compared to the previous years.

Detailed Comments on Each Question

Question 1

- (a) State two uses of each of the following in an ICT laboratory.
- (i) System Unit
 - (ii) UPS
 - (iii) Stabilizer
 - (iv) Satellite dish
 - (v) Port
- (b) Write short explanatory notes on:
- (i) Info bot
 - (ii) Online data base

Intended Task

The question required candidates' ability to recall some facts about ICT laboratory.

Those who answered the question performed well.

Question 2

- (a) List and explain three hardware device problems.
- (i) What is system tool?
 - (ii) List and explain three types of software.

Intended Task

The question required candidates' knowledge of hardware device.
Those who answered it performed averagely.

Question 3

- (a) (i) Differentiate between document window and window desktop.
(ii) State four advantages of Ms-word.
- (b) Explain the steps involved to set margin, paper size and page orientation.

The question required candidates' knowledge of MS-word.

Those who attempted it performed fairly well.

Question 4

- (a) Explain the following terms as being used in Ms-Excel.
 - (i) Workbook
 - (ii) Worksheet
 - (iii) Formula bar
- (b) State the commands to place a border in Ms-Excel.

Intended Task

The question required candidates' knowledge of MS-Excel.

Those who attempted it performed well.

Question 5

- (a) State the uses of the following in Power Point window.
 - (i) Menu bar
 - (ii) Standard tool bar
 - (iii) Drawing tool bar
- (b) Differentiate between slide view and outline view

Intended Task

The question required candidates' ability to recall some facts on power point window.

Many of the candidates attempted the question and they performed well.

Question 6

- (a) What is database?
 - (i) List three examples of a database.
 - (ii) Explain the term sorting in database.
 - (ii) List and explain three types of sorting in database.
- (b) List and explain three types of sorting in database.

Intended Task

The question required candidates' knowledge of database.

Almost all the candidates attempted the question and they performed well.

Question 7

- (a) Explain the steps involved in printing a drawing in AutoCAD.
- (b) List three features that can be seen in AutoCAD screen and their uses.

Intended Task

The question required candidates' knowledge of AutoCAD.

Those who attempted it performed averagely well.

Candidates' Weaknesses

- ❖ Poor grammatical expressions.
- ❖ Mis-interpretation of questions.
- ❖ Inadequate knowledge of the use of AutoCAD.
- ❖ Inadequate knowledge of the use of computer.

Suggestions for Improvement

- Teachers should intensify the teaching of English Language.
- Teaching of AutoCAD should be intensified.
- Students should read and understand questions before attempting them.
- More qualified ICT teachers should be employed to schools.

SECTION II

BUSINESS TRADES

TYPEWRITING 35 W.P.M. (411)

General Comments

The questions met the required standard. The candidates performed fairly well compared to the previous years.

Detailed Comments on Each Question

Task 1: Speed and Accuracy Test

Type one copy of the following passage in double-line spacing on plain A4 paper. The use of eraser is not allowed.

Why do so many visitors to Britain include their tour a visit to “leafy Warwickshire”? This is a well-wooded area, nearly in the centre of England, and has a maze of narrow, winding lanes of great beauty. In the summer it is leafy in all truth, as one would expect when one recalls that it is all that is left of the once great forest of Arden. This forest was once of great size, and the woods were so thick that they became the home of hosts of robbers, who made the journeys of merchants full of danger. Even now many ancient trees are to be found trees which have lived for many times the span of a man’s life.

The Romans, who had landed on the south shores of the country, slowly forced their way into the centre of the land, and many signs of their occupation can still be found in the country. Four great Roman roads enter the district at different points – Watling Street, Icknield Street, the Ridgeway, and the Fosseway – all of which can still be traced. It is easy to follow, at least for parts of these roads, the course along which Roaman soldiers marched forth into the unknown.

There are 2 great feudal castles within its borders – that at Warwick from the outside scarcely change since the Middle Ages, and that at Kennilworth, once a great regal building, but now just a heap of ivy clad ruins.

Intended Task

The candidates were expected to type and copy the above passage in double-line spacing on a plain A4 paper. The candidates performed fairly well in this question.

Task 2

Type a copy of the following letter on A4 Headed Paper. Make carbon copy with today’s date,

Intended Task

The candidates were expected to type and make a carbon copy with today's date. Many candidates attempted this question but failed to put date, though they performed fairly well.

Task 3

Type the manuscript below on A4 Headed Paper. Make a carbon copy.

Intended Task

The candidates were expected to type the given manuscript and make a carbon copy of the manuscript. The candidates performed fairly well.

Task 4

Type the following on a memorandum paper provided.

Intended Task

The candidates were expected to type the above on a memorandum paper. The candidates performed fairly well.

Task 5

Type a copy of the following tabulation on A4 plain paper.

Intended Task

The candidates were expected to type a copy of the following Tabulation on A4 plain paper. The candidates performed fairly well.

Candidates' Strengths

- ✓ 60% of candidates displayed proficiency in typing.
- ✓ Many candidates were able to meet the speed of accuracy.
- ✓ 70% of the candidates attempted the entire task.

Candidates' Weaknesses

- ◆ Over typing.
- ◆ The candidates failed to follow rubric and marginal instructions.

Suggestions for Improvement

- ❖ Students should be conversant with the rules of typewriting.
- ❖ Seminars should be organized for teachers of typewriting.

OFFICE PRACTICE (413)

General Comments

The question met the required standard and candidates' performance was better than the previous years.

Detailed Comments on Each Question

Question 1

- (a) What is Office Practice?
- (b) State five reasons why we study Office Practice.

Intended Task

The question required candidates' knowledge of Office Practice. They were expected to define Office practice and give five reasons why we study office practice. The candidates dwelt mainly on definition of Office Practice and failed to give reasons why we study Office Practice, hence they performed poorly.

Question 2

- (a) What is office layout?
- (b) State five benefits of a good office layout.

Intended Task

The question required candidates' ability on how to recall office layout. They were expected to define Office layout and also to state five benefits of a good office layout. The candidates could not state correctly the benefits of a good office, hence, they performed poorly.

Question 3

- (a) What is organization chart?
- (b) What is the difference between line and line and staff organization?
- (c) Explain three advantages and three disadvantages of an organizational chart to the public.

Intended Task

The candidates were expected to define what organizational chart is and to differentiate between line and line and staff organization, as well as to explain three advantages and three disadvantages of an organizational chart to the public.

The candidates could not state correctly the three advantages and three disadvantages of an organizational chart to the public hence the candidates performed poorly.

Question 4

- (a) List five factors determining the choice of office communication.
- (b) Mention four features of a good business letter.
- (c) Explain with relevant examples the following forms of communication.
 - (i) Oral/verbal.
 - (ii) Written.

Intended Task

The questions required the candidates to list five factors determining the choice of office communication and also to mention four features of a good business letter. They were also expected to explain with relevant examples these forms of communication:

- (i) Oral/Verbal,
- (ii) Written.

The candidates failed to give features of a good business letter, while they neglected question on forms of communication like oral/verbal and written. They however, performed fairly.

Question 5

- (a) State five steps in dealing with incoming mail.
- (b) State the services provided by each of the following office machines:
 - (i) Sealing Machine.
 - (ii) Photocopier.
 - (iii) Franking machine.
 - (iv) Stampling machine,
 - (v) Guillotine

Intended Task

The candidates were required to state five steps in dealing with incoming mail and to state the services provided by each of the office machines.

Candidates could not give correct steps in dealing with incoming mail, neither were they knowledgeable as regards the series provided by each of the office machines. Hence, they performed poorly.

Question 6

- (a) What is a postage book?
- (b) Mention three differences each between the following pairs”
 - (i) Postage book and remittance book.
 - (ii) Dispatch book and outward correspondence.

Intended Task

The questions required candidates' knowledge on postage book. They were expected to define postage book and to mention three differences each between postage book and remittance book, dispatch book and outward correspondence. The candidates found it difficult to give the right answers. They however, performed fairly.

Question 7

- (a) Define filling.
- (b) List five types of indexing.
- (c) Arrange the following names as in alphabetical order of filling:
 - (i) H.M. Olatunde.
 - (ii) D.O. Olakampu.
 - (iii) S.O. Olamide.
 - (iv) J.M. Oladele.
 - (v) S.N. Olaniyan.

Intended Task

The questions required the candidates' ability to recall filling and also to list five types of indexing as well to arrange the names in alphabetical order of filling. The candidates were able to define filling and give five types of indexing. Many candidates answered this question correctly and they performed well.

Question 8

- (a) State five advantages of office machine.
- (b) What machine are used for each of the following processes:
 - (i) Pinning papers together.
 - (ii) Reproducing many copies of a document.
 - (iii) Arranging document.
 - (iv) Preparing employees payroll.
 - (v) Trimming papers.
 - (vi) Producing a few copies of a document.
 - (vii) Recording proceedings at meetings.
 - (viii) Reproducing a few copies of a document.
 - (ix) Printing postal impressions.
 - (x) Analyzing and storing mass data.

Intended Task

The question required the candidates to state five advantages of office machine and also to name the machine used for the above following processes. The candidates could not state correctly the five advantages of office machine due to poor grammatical expressions and they could not write the names of processing machine very well, hence they performed poorly.

Question 9

- (a) What is a 'bill of exchange'?
- (b) State four similarities between a cheque and a bill of exchange.
- (c) Mention four reasons for dishonouring cheque.

Intended Task

The question required candidates' knowledge of 'Bill of Exchange'. They were to state four similarities between a cheque and a bill of exchange, as well as to mention four reasons for dishonouring a cheque. Most candidates were able to define bill of exchange. However, they could not state correctly the similarities between a cheque and bill of exchange. Their performance was fair.

Question 10

Explain briefly the following terms in connection with meeting procedure:

- (i) Resolution.
- (ii) Ultravires.
- (iii) Proxy.
- (iv) Teller.
- (v) Quorum

Intended Task

The question required the candidates to briefly explain the terms in connection with meeting procedures. Many candidates displayed absolute lack of understanding for this question. They seemed not to be conversant with the terms in connection with meeting procedures. Hence, they performed poorly.

Candidates' Strengths

Good definition of terms.
Good display of mastery of the subject.

Candidates' Weaknesses

- ◆ Poor preparation for the examinations.
- ◆ Poor grammatical expressions.
- ◆ Inability to interpret the questions.

Suggestions for Improvement

- ❖ More academic programmes should be sponsored by NABTEB.
- ❖ Emphasis should be laid on passing English Language before promotion to the next class.

ADVANCED SECRETARIAL DUTIES (417)

General Comments

The question met the required standard and candidates' performance was fair compared to the previous years.

Detailed Comments on Each Question

Question 1

List four functions of a Confidential Secretary.

Intended Task

The candidates were expected to list four functions of a Confidential Secretary.

They were able to list four functions of a confidential secretary, thereby performing well.

Question 2

Define the term 'Receptionist'

Intended Task

The question required the candidates to define the term "Receptionist". The candidates answered the question on Receptionist well.

Question 3

Give four reasons why dispatch book is important in an organization.

Intended Task

The question required the candidates to give four reasons why dispatch book is important in an organization.

They could not explain very well the reasons why dispatch book is important, hence they performed poorly.

Question 4

List four essential qualities of a good report.

Intended Task

The candidates were expected to list four essential qualities of a good report. Many candidates answered this question correctly and they performed well.

Question 5

Distinguish between job specification and job description.

Intended Task

The candidates were expected to distinguish between job specification and job description. They could not distinguish correctly between job specification and job description. They performed poorly.

Question 6

Define 'Memory Aid'.

Intended Task

The question required the candidates to define 'Memory Aid'. Candidates were able to define it. They performed well in this item.

Question 7

Explain the term "resolution" as used in a meeting.

Intended Task

The candidates were expected to explain the term "resolution" as used in a meeting. The candidates displayed absolute lack of understanding for this question. They seemed not to be conversant with the meeting terms hence, they performed poorly.

Question 8

Mention four types of office machine.

Intended Task

The question required the candidates to mention four types of office machine. Many candidates answered this question correctly and they performed well.

Question 9

Define the term “Insurance”.

Intended Task

The question required the candidates to define insurance. Many candidates answered this question correctly and they performed well.

Question 10

State two advantages and two disadvantages of a Computer.

Intended Task

The question required the candidates to state two advantages and two disadvantages of a computer. Many of the candidates could not give expected answers, hence many of them who attempted this question performed averagely.

Section B

Question 11

- (a) Explain three reasons for cordial relationship between a Secretary and a Boss.
- (b) Why are receptionists important in an organization?

Intended Task

The question required the candidates to explain three reasons for cordial relationship between a Secretary and a Boss and why receptionists are important in an organization. Those who attempted it performed well.

Question 12

- (a) State and explain four barriers to an effective communication.
- (b) As Secretary to a senior executive, you are contacted by the firm’s telephonist, whenever people wish to speak to him on the telephone. How would you deal with these calls?

Intended Task

The question required the candidates to state and explain four barriers of an effective communication as well as to explain how to deal with calls as a Secretary to a Senior Executive when contacted by the firms telephonist.

Those who answered the question performed fairly.

Question 13

- (a) Explain four reasons why filing is important in an organization.
- (b) Give two of the advantages and three of the disadvantages of the use of memory aids.

Intended Task

The question required the candidates to explain four reasons why filing is important in an organization and also to give two of the advantages and three of the disadvantages of the use of memory aids. Those who answered the question performed poorly.

Question 14

- (a) Outline with explanation four of the qualities expected of a human relations officer in order to promote efficiency in the office.
- (b) State two duties of a Secretary before, during and after meeting.

Intended Task

The candidates were expected to outline four qualities expected of a human relations officer in order to promote efficiency in the office and also to state two duties of a Secretary before, during and after meeting. Those who attempted the question performed poorly.

Question 15

- (a) Explain four methods of recruiting staff into an organization.
- (b) Distinguish between insurance and assurance.

Intended Task

The question required candidates' ability to explain four methods of recruiting staff into an organization and also to distinguish between insurance and assurance. Most candidates who attempted the question performed poorly.

Question 16

- (a) Define advertisement.
- (b) Name and explain four types of advertisement.

Intended Task

The question required candidates to define advertisement and to name and explain four types of advertisement. Many candidates attempted it and they performed well.

Question 17

- (a) Differentiate between imprest system and cash float.
- (b) Explain five reasons why organizations operate petty cash book.

Intended Task

The candidates were to differentiate between imprest system and cash float and also to explain five reasons why organizations operate petty cash book. Those who attempted it performed fairly.

Candidates' Strength

- ✓ Clear distinction of terminologies.

Candidates' Weaknesses

- ◆ Poor grammatical expressions.
- ◆ Poor spellings.

Suggestions for Improvement

- ❖ Teachers should lay emphasis on English language.
- ❖ Students should cultivate the habit of reading novels, journals, dailies, magazine etc.
- ❖ Teachers should try and cover the syllabus.

COMMERCE (421)

General Comments

The questions covered the syllabus and the candidates' performance was generally poor.

Detailed Comments on Each Question

Question 1

Explain the purpose of any five of the following documents:

- (a) Invoice;
- (b) Advice Note;
- (c) Consignment Note;
- (d) Perform Invoice;
- (e) Consular Invoice;
- (f) Debit Note.

Intended Task

The candidates were expected to explain the main purpose of any five of the above documents. Those who attempted it could not explain the documents hence, they performed poorly.

Question 2

- (a) What do you understand by visible and invisible trade?
- (b) List and explain any three ways in which a country can restrict the importation of goods.

Intended Task

The candidates were expected to recall the concept of visible and invisible trade, and explain ways in which a country can restrict the importation of goods.

The candidates could not answer the question well, hence, they performed poorly.

Question 3

State three arguments for and two against public enterprises.

Intended Task

The candidates were expected to state three arguments for and two against public enterprises. Many candidates listed the points but could not explain hence, they performed poorly.

Question 4

- (a) What is trade?
- (b) Name and explain four auxiliaries to trade showing how each assist trade.

Intended Task

The candidates were expected to define trade, name and explain auxiliaries to trade. Candidates attempted it, and they performed poorly.

Question 5

Mention and explain any five principles upon which insurance is based.

Intended Task

The candidates were expected to explain the principles upon which insurance is based. Many candidates could not answer this question hence, they performed averagely.

Question 6

- (a) Define the term production.
- (b) List the three major branches of production.
- (c) Explain the three branches and give the example of each.

Intended Task

The candidates were expected to recall the concept of production, then list major branches of production and explain the branches as well as give examples.

Many candidates could not answer the question hence, they performed poorly.

Question 7

- (a) Explain each of the following:
 - (i) Chamber of Commerce,
 - (ii) Trade Association,
- (b) Explain three functions of Chambers of Commerce.

Intended Task

The candidates were asked to give details about Chamber of Commerce, trade association and also give three functions of Chambers of Commerce.

Many candidates could not give a proper explanation to what was asked, hence, they performed poorly.

Question 8

- (a) What is marketing?
- (b) Explain any four reasons why a manufacturer may sell directly to consumers.

Intended Task

The candidates were expected to define marketing and as also explain four reasons why a manufacturer may sell directly to consumers. Candidates could not give sufficient answers to the question asked, though they performed averagely.

Question 9

- (a) Distinguish between nationalization and indigenization.
- (b) State any three advantages of nationalization and two advantages of indigenization.

Intended Task

The candidates were expected to distinguish between nationalization and indigenization. Also they were to state three advantages of nationalization and two advantages of indigenization.

Many candidates could not answer the question well, though they performed fairly well.

Question 10

Explain five types of business environment.

Intended Task

The candidates were expected to recall and explain five types of business environment. The candidates could not explain nor give the type of business environment hence, they performed poorly.

Candidates' Weaknesses

- ◆ Poor presentation of answers.
- ◆ Poor grammatical expressions.
- ◆ Lack of computational skills.

Suggestions for Improvement

- ❖ Students should adequately prepare for examination.
- ❖ Teachers/students should endeavour to cover syllabus.
- ❖ Students should read questions well before attempting them.

ADVANCED COMMERCE (428)

General Comments

The questions met the required standard and candidates' performance was fair compared to the previous years.

Detailed Comments on Each Question

Question 1

Highlight four environments that affect marketers.

Intended Task

The question required candidates to highlight four environments that affect marketers. They could not highlight four environments that affect marketers. Therefore, they performed poorly.

Question 2

Marketing has been severally criticized. State two of these criticisms against marketers.

Intended Task

The question required candidates to state two criticisms against marketers. The question was well answered hence, they performed well.

Question 3

Enumerate two functions of the Standard Organization of Nigeria (SON).

Intended Task

The question required candidates to enumerate two functions of the Standard Organization of Nigeria. The question was answered very well hence, they performed well.

Question 4

State four sources of data collection available to a market researcher.

Intended Task

The question required candidates to state four sources of data collection available to a market researcher. The question was answered very well hence, they performed well.

Question 5

Highlight four problems of international marketing

Intended Task

The question required candidates to highlight four problems of international marketing. Most of them could not give the proper highlight. Therefore, they performed fairly.

Question 6

What is the difference between import and export trade?

Intended Task

The question required candidates to differentiate between import and export trade. The candidates did not give the straight forward answers, hence, they performed fairly well.

Question 7

List four media used by marketers to advertise their products.

Intended Task

The question required candidates to list four media used by marketers to advertise their products. The question was well answered hence, they performed well.

Question 8

State four sources of finance available to a producer.

Intended Task

The question required candidates to state four sources of finance available to a producer. Most of the candidates who attempted it answered very well hence, they performed well.

Question 9

State two importance of working capital to a businessman.

Intended Task

The candidates were expected to state two importance of working capital to a businessman. Many candidates who attempted the question were able to state clearly the importance of working capital to a businessman hence, they performed well.

Question 10

Distinguish money market from capital market.

Intended Task

The question required candidates to distinguished money market from capital market. Those who attempted could not distinguish very well hence, they performed fairly well.

Question 11

- (a) What is packaging?
- (b) State three advantages and two disadvantages of packaging.

Intended Task

The question required candidates' ability to recall what packaging is. They were also to state three advantages and two disadvantages of packaging. The questions were answered very well hence they performed well.

Question 12

State six reasons that may make a marketer deal directly with the customers.

Intended Task

The question required candidates to state six reasons which could make a marketer deal directly with the consumers. The candidates could not state very well how marketers deal with the consumers hence, they performed fairly.

Question 13

- (a) Differentiate advertising from personal selling.
- (b) Outline four advantages of advertising product.

Intended Task

The question required candidates to differentiate advertising from personal selling and outline four advantages of advertising a product. The candidates could not differentiate advertising from personal selling properly. Hence, they performed fairly.

Question 14

State and explain four factors influencing buyer's behaviour in an economy.

Intended Task

The question required candidates to state and explain four factors influencing buyer's behaviour in an economy. The question was answered very well hence, they performed well.

Question 15

- (a) List and explain three functions of a merchant bank to business organization.
- (b) State three functions of a discount house to businessman.

Intended Task

The question required candidates to list and explain three functions of a 'Merchant Bank' to business organization. They were also to state three functions of a discount house to a businessman. Many candidates attempted it and they performed well.

Question 16

- (a) What is budget?
- (b) Explain five sources of funds available to government to finance her various activities.

Intended Task

The candidates were to define budget and explain five sources of funds available to government to finance her various activities. Many candidates who attempted the question were not able to explain the sources of funds available to government to finance her various activities hence, they performed averagely.

Question 17

List and explain four methods of payment in foreign trade.

Intended Task

The question required candidates to list and explain four methods of payment in foreign trade. Many candidates who attempted the question were able to list and explain the methods of payment in foreign trade hence, they performed well.

Question 18

Despite the huge potentials of international marketing, it is still faced with problems. List and explain four of these problems associated with international marketing.

Intended Task

The question required candidates to list and explain four of the problems associated with international marketing despite the huge potentials of international marketing. Many candidates attempted it and they performed well.

Question 19

Write short notes on the following highlighting their importance in business.

- (i) Consular Invoice;
- (ii) Export Credit Insurance;
- (iii) Letter of Inquiry;
- (iv) Bill of Landing.

Intended Task

The question required candidates to highlight the importance in business on the terms mentioned. The candidates could not highlight well hence, they performed fairly.

Question 20

Explain six sources of information for a Nigerian firm wishing to enter international market.

Intended Task

The question required candidates to explain six sources of information for a Nigeria firm wishing to enter international market. Those who attempted it performed well.

Candidates' Weaknesses

- ◆ Poor grammatical expressions.
- ◆ Poor spellings.
- ◆ Poor organization.

Suggestions for Improvement

- ❖ Teachers should try to cover the syllabus.
- ❖ Teachers should lay emphasis on the teaching and learning of English Language.
- ❖ Candidates should learn how to read novels, journals, etc.

ADVANCE OFFICE MANAGEMENT (427)

General Comments

The question covered the syllabus and candidates' performance was fair compared to the previous years.

Detailed Comments on Each Question

SECTION A

Question 1

State four functions of an office in an organization.

Intended Task

The question required the candidates to state four functions of an office in an organization. Many candidates answered the question correctly and they performed well.

Question 2

State the concept of demand and supply.

Intended Task

The question required the candidates to state the concept of demand and supply. Most of the candidates could not illustrate with diagram therefore, they performed fairly.

Question 3

State two conditions necessary for rapid economic growth and development.

Intended Task

The question required the candidates to state two conditions necessary for rapid economic growth and development. The candidates answered the question correctly and they performed well.

Question 4

Mention four methods of motivating office employees

Intended Task

The questions required candidates to mention four methods of motivating office employees. The candidates answered the question very well hence, they performed well.

Question 5

Enumerate four factors to be considered in the location of business concern.

Intended Task

The question required candidates to enumerate four factors to be considered in the location of business concern. Those who attempted it performed well.

Question 6

Mention four disadvantages of using a computer

Intended Task

The candidates were expected to mention four disadvantages of using a computer. The candidates could not write well on this hence, they performed poorly.

Question 7

List two major roles of entrepreneurship in business organization.

Intended Task

The question required candidates to list two major roles of entrepreneurship in business organization. Those who attempted it performed well.

Question 8

State four features of a good organization structure.

Intended Task

The question required candidates to state four features of a good organization structure. The candidates could not state the features well enough hence, they performed fairly.

Question 9

What is stratified sampling?

Intended Task

The question required candidates' ability to recall what stratified sampling is. Those who attempted it performed well.

Question 10

Mention four factors that contribute to good human relations.

Intended Task

The question required candidates to mention four factors that contribute to good human relations. The candidates answered the question correctly and they performed well.

SECTION B

Question 11

- (a) Distinguish between filing and indexing.
- (b) Mention and explain three qualities of filing and two types of indexes

Intended Task

The candidates were required to distinguish between filing and indexing, mention and explain three qualities of filing and two types of indexes. Those who attempted it could not answer well hence, they performed poorly.

Question 12

State and explain five methods of motivating office employees.

Intended Task

The question required candidates to state and explain five methods of motivating office employees. Those who attempted it performed well.

Question 13

Discuss the necessary steps to be taken towards the appointment of an applicant by the personnel department.

Intended Task

The candidates were expected to discuss the necessary steps to be taken towards the appointment of an applicant by the personnel department. The candidate could not discuss the necessary step well hence, they performed poorly.

Question 14

Discuss five roles of Personnel Administration in an organization.

Intended Task

The candidates were to discuss five roles of Personnel Administration in an organization. The candidates who attempted this question discussed it well hence, they performed well.

Question 15

- (a) What is meant by ‘barter system’?
- (b) Explain five problems created by barter system in the exchange process.

Intended Task

The question required candidates to define “barter system” and also explain five problems created by barter system in the exchange process. A few candidates attempted this question and they performed poorly.

Question 16

Discuss five economic functions of government in the development of industries in Nigeria.

Intended Task

The question required the candidates’ ability to discuss five economic functions of government in the development of industries in Nigeria. Those who attempted it performed well.

Question 17

Explain five functions of a Central Bank.

Intended Task

The candidates were expected to explain five functions of a central bank. Most of the candidates who attempted it performed well.

Question 18

30 candidates scored the following marks in JAMB examination:

145	163	149	152	16	156	159	139	145	141
150	158	150	149	143	159	154	167	146	147
152	162	144	169	162	150	173	160	167	171

- (a) Taking class intervals of 135 – 144, 145 – 1534, construct table of frequencies.
- (b) Calculate the mean scores.

Intended Task

The candidates were to construct the table of frequencies and also to calculate the mean scores. Many candidates could not attempt it well because of computation skills involved hence, they performed fairly well.

Question 19

Write short notes on the following:

- a. accidental sampling;
- b. sampling errors.
- c. target population.
- d. sampling frame.
- e. measure of central tendency.

Intended Task

The question required the candidates to write short notes on the above list. The questions were answered very well hence, they performed well.

Question 20

- (a) State the differences between sample and population.
- (b) State five reasons why sampling is necessary.

Intended Task

The question required candidates to state the differences between sample and population and also to state five reasons why sampling is necessary. Many candidates could not differentiate between sample and population hence, they performed fairly.

Candidates' Weaknesses

- ◆ Poor grammatical expressions.
- ◆ Poor spellings.
- ◆ Poor computation skills.

Suggestions for improvement

- ❖ Teachers should lay emphasis on English Language.
- ❖ Teachers should try to cover the syllabus.
- ❖ Teachers should teach the candidates how to present their work.

ADVANCED SALESMANSHIP (436)

General Comments

The questions met the required standard. The candidates performed poorly.

Detailed Comments on Each Question

SECTION A

Question 1

Define the term 'Distribution.'

Intended Task

The candidates were expected to define the word 'Distribution'. The candidates did not understand the question hence, they performed poorly.

Question 2

State two types of distribution channel.

Intended Task

The candidates were expected to recall two types of distribution channel. Many candidates performed poorly in this question.

Question 3

Explain the importance of middlemen.

Intended Task

The candidates were expected to recall the importance of middlemen. They could not understand the question, hence they performed poorly.

Question 4

Enumerate three factors that influence the choice of middlemen.

Intended Task

The candidates were expected to explain three factors that influence the choice of middlemen. Many candidates performed averagely in this question.

Question 5

What is conventional “Distribution System”?

Intended Task

The candidates were expected to recall the meaning of “Conventional Distribution System”. Many candidates could not understand the question hence, they performed poorly.

Question 6

Give three qualities of a customer.

Intended Task

The candidates were expected to state three qualities of a customer. The candidates performed fairly well in this question.

Question 7

State the use of print media in customer relationship.

Intended Task

The candidates were expected to recall the use of print media in customer relationship. Many candidates could not understand the question, hence, they performed poorly.

Question 8

List the tools for customer acquisition.

Intended Task

The question required the candidates to recall tools for customer acquisition. Those who attempted it performed poorly.

Question 9

State three forms of customer reaction.

Intended Task

The candidates were expected to recall three forms of customer reaction. The candidates performed well in this question.

Question 10

What is the meaning of globalization?

Intended Task

The candidates were expected to explain globalization. The candidates performed poorly in this question.

SECTION B

Question 11

List and explain the requirements for a good channel of distribution.

Intended Task

The question required candidates' ability to recall the requirements for a good channel of distribution. The candidates performed poorly.

Question 12

Explain the functions of middlemen in the distribution of goods in Nigeria.

Intended Task

The question required the candidates to explain the functions of middlemen in the distribution of goods in Nigeria. Those who attempted it performed poorly.

Question 13

- (a) State the services expected by customers.
- (b) Explain the strategies to improve customer service.

Intended Task

The question required the candidates to state the services expected by customers and also to explain the strategies to improve customer services. Those who attempted it performed poorly.

Question 14

- (a) State the modes of transportation in Nigeria.
- (b) Explain the importance of transportation in Nigeria.

Intended Task

The question required the candidates to state the modes of transportation and explain its importance in Nigeria. Those who attempted it performed poorly.

Question 15

- (a) List the types of internet selling.
- (b) What are the objectives of web-based selling and internet selling?

Intended Task

The question required the candidates to list the types of internet selling and to state the objectives of web-based selling and internet selling. The candidates performed poorly.

Question 16

Explain the factors to be considered in preparing distribution schedule.

Intended Task

The question required the candidates to explain the factors to be considered in preparing distribution schedule. Those who attempted it performed poorly.

Question 17

- (a) State types of carriers.
- (b) Discuss the importance of transportation in Nigeria.

Intended Task

The question required the candidates to state types of carriers and explains the importance of transportation in Nigeria. The candidates could not understand the question, hence they performed poorly.

Question 18

- (a) Explain the concept of network selling.
- (b) Give the origin of internet selling.

Intended Task

The candidates were expected to recall the concept of network selling and to give the origin of internet selling. The candidates performed poorly.

Question 19

Describe the nature and importance of market deregulation.

Intended Task

The candidates were expected to explain the nature and importance of market deregulation. The candidates performed fairly well.

Question 20

- (a) Explain the meaning of skilled customer relationship.
- (b) State the factors that determine demand for customer relationship.

Intended Task

The candidates were expected to explain the meaning of skilled customer relationship and to state the factors that determine demand for customer relationship. Many candidates performed averagely.

Candidates' Weaknesses

- ◆ Poor understanding of basic concepts.
- ◆ Poor grammatical expressions.

Suggestions for Improvements

- ❖ The teachers should intensify the teaching of English Language
- ❖ Laboratories should be well equipped so as to improve the teaching and learning of practicals.

SECTION III

TECHNICAL TRADES

INTRO TO AGRIC-SCIENCE MATERIALS, IMPLEMENT AND MACHINES (011 – 1)

General Comments

The question covered the syllabus and candidates' performance was generally good.

Detailed Comments on Each Question

Question 1

- (a) List three agents of pollination.
- (b) Differentiate between sexual and asexual propagation.
- (c) Explain the following plant propagation methods:
 - (i) Budding
 - (ii) Grafting
 - (iii) Layering

Intended Task

The candidates were asked to list three agents of pollination, differentiate between sexual and asexual propagation and explain budding, grafting and layering. The candidates were able to answer the question correctly. Hence, they performed well.

Question 2

- (a) Draw a fully labeled flowering plant.
- (b) List three types of rocks.
- (c) Define the Term “micronutrients.”

Intended Task

The candidates were requested to draw a fully labeled flowering plant, list three types of rocks and define the term “micronutrients”. They responded to the question well enough, thereby, performing well.

Question 3

- (a) State three ways in which weeds can be controlled.
- (b) List three advantages of poultry farming.
- (c) State two differences between pollination and photosynthesis.

Intended task

It was expected of the candidates to state three ways in which weeds can be controlled, list three advantages of poultry farming and state two differences between pollination and photosynthesis. They attempted the question correctly. Therefore, they performed well.

Question 4

- (a) What is calibration as it applies to sprayers?
- (b) With the aid of diagram, describe the section of an elevator digger

Intended Task

The candidates were asked what calibration is as it applies to sprayers and to describe the section of an elevator digger with the aid of diagram. They answered the question correctly. Hence, they performed well.

Question 5

- (a) Identify three protective devices provided on balers and where they are located
- (b) Discuss the following combine harvester parts:
 - i. Straw walker
 - ii. Rear beater
 - iii. Grain tank.

Intended Task

The candidates were asked to identify three protective devices provided on balers and where they are located. They were also requested to discuss straw walker, rear beater and grain tank. The question was well responded to by the candidates. They performed well.

Question 6

- (a) With the aid of sketches, describe the following agricultural implements:
 - i. Pruning shear
 - ii. Pick axe
 - iii. Fork
- (b) Define the following terms and give two examples of each:
 - i. Primary tillage
 - ii. Secondary tillage

Intended Task

The candidates were requested to describe pruning shear, pick axe and fork with the aid of sketches. They were also asked to define primary tillage, secondary tillage and give two examples of each. They performed well.

Question 7

- (a) Explain the term respiration.
- (b) What is the difference between artificial and natural respiration?
- (c) List sequentially, the steps in artificial respiration.

Intended Task

The candidates were asked to explain the term respiration, state the differences between artificial and natural respiration and list the steps in artificial respiration. They were able to answer the question correctly. Hence, they performed well.

Candidates' Strengths

- ◆ The difficulty indexes of questions 2, 3, 1 and 6 are relatively high to the extent that almost all the candidates attempted those questions correctly.
- ◆ In question 3, majority of the candidates answered ways in which weeds can be controlled correctly.
- ◆ The agents of pollination were listed correctly.
- ◆ Methods of propagation were also explained correctly.
- ◆ Types of rocks were correctly listed by many of the candidates.
- ◆ Many of the candidates defined the meaning of micronutrients very well.
- ◆ Advantages of poultry farming were answered correctly.
- ◆ The candidates who answered question on artificial respiration showed proficiency in the steps involved in carrying out artificial respiration.

Candidates' Weaknesses

- ❖ Wrong spellings.
- ❖ Poor grammatical expressions.
- ❖ Poor sketching and drawing skills.

Suggestions for Improvement

- Candidates should be serious about their studies.
- Government should equip libraries with current and modern textbooks.
- Internet facilities should be installed in accessible places.
- Teachers should be advised to visit the internet to assess new information all the time.
- Seminars and workshops could be organized by NABTEB for both the subject officers and the examiners.
- Items generated in the past years should be subjected to review to ensure that they serve the functions for which they were developed (Test Evaluation), so that the test would be valid and reliable.
- Teachers and invigilators should be aware of the high incidence of cheating in examinations and should endeavour to stop it.

TRACTOR SYSTEM (012 -1)

General Comments

The paper covered the syllabus and the performance of the candidates was better compared with the previous year.

Detailed Comments on Each Question

Question 1

- (a) State one function of the following tractor components :
 - (i) Dip stick
 - (ii) Front weight
 - (iii) Quadrant lever
 - (iv) Foot throttle
- (b) Use a labeled diagram only to explain the working principles of an oil bath air cleaner .

Intended Task

The candidates were required to state one function of some tractor components listed above. They were equally required to use a labeled diagram only to explain the working principles of an oil bath air cleaner. The candidates performed fairly well.

Question 2

- (a) What is petrol lubrication?
- (b) Using a labeled sketch, explain the working principles of a splash lubricating system .

Intended Task

The candidates were required to define petrol lubrication and to explain using a labeled sketch the working principles of a splash lubricating system. The candidates performed fairly well.

Question 3

- (a) Draw the schematic diagram of an injector nozzle.
- (b) Name three types of injector nozzles used in an agricultural tractor.

Intended Task

The candidates were required to draw the schematic diagram of an injector nozzle and name three types of injector nozzles used in agricultural tractor. The candidates performed well.

Question 4

- (a) State two differences between the inline and distributor injection pumps.
- (b) Explain the following terms:
 - (i) calibration
 - (ii) phasing

Intended Task

The candidates were required to state two differences between the inline and distributor injection pumps and to explain the terms calibration and phasing. The questions were answered correctly by all the candidates.

Question 5

- (a) State five advantages of a two-stroke over a four-stroke petrol engine.
- (b) Explain the working principles of a two-stroke petrol engine.

Intended Task

The candidates were required to state five advantages of a two-stroke over a four stroke petrol engine and to explain the working principles of a two-stroke petrol engine. The question was quite understood by the candidates because they performed well.

Question 6

- (a) Explain the direct injection system.
- (b) With the aid of a line diagram, explain the indirect injection system.

Intended Task

The candidates were required to explain the direct injection system and the indirect injection system with the aid of a line diagram. The candidates performed well.

Question 7

- (a) State one function of the following tractor components:
 - (i) tractometer
 - (ii) drawbar
 - (i) hand throttle
 - (ii) tyre lug
 - (iii) shut-off knob
- (b) Draw a typical piston of an agricultural tractor and label four parts.

Intended Task

The candidates were required to state one function each of some tractor components listed above. They were equally asked to draw a typical piston of an agricultural tractor and label four parts. The questions were answered correctly and the piston in 'b' was properly drawn and labeled. Hence, they performed well.

Candidates' Weaknesses

- (i) Candidates were deficient in explaining the working principles of a splash lubricating system.
- (ii) They could not explain the distinct events above and below the piston.
- (iii) They could not draw and label the line diagram.

Suggestion for Improvement

- (i) Efforts should be made by instructors, teachers in the various technical and vocational schools and colleges to lay emphasis on drawings and sketching which are very vital to the explanation of principles of components of operations.

***ADVANCED AGRICULTURAL EQUIPMENT AND IMPLEMENTS MECHANIC WORKS
(016-1)***

General Comments

The questions covered the syllabus and the candidates' performance was generally fair.

Detailed Comments on Each Question

Question 1

Define the term "Horse Power"

Intended Task

The candidates were expected to recall the definition of "Horse Power". The candidates performed fairly well on this question.

Question 2

Identify the work of overrunning clutch and its purpose.

Intended Task

The candidates were expected to recall the application of overrunning clutch and its purpose. The candidates did not state some of the processes in the work of overrunning clutch and as a result they performed poorly.

Question 3

Define the term "Agricultural Finance".

Intended Task

The candidates were required to define Agricultural Finance. Many candidates answered this question correctly. Hence, they performed well.

Question 4

Explain the following terms:

- (i) brake horse power
- (ii) draw bar horse power

Intended Task

The candidates were required to explain some terms related to horse power. The candidates performed fairly well in this question.

Question 5

A tractor is to be checked for road worthiness. List five essential parts to be checked as an Agricultural mechanic.

Intended Task

The candidates were expected to list five essential parts of a tractor to be checked for road worthiness. The candidates performed poorly in this question as they could not list the parts of a tractor.

Question 6

List four safety precautions to be considered on the Agricultural mechanic section of the mechanic workshop.

Intended Task

The candidates were required to recall safety precautions to be considered on the Agricultural mechanic section of the mechanic workshop. The candidates performed poorly as they did not understand the question.

Question 7

What is hydraulic Power?

Intended Task

The candidates were expected to recall the concept of hydraulic power. The candidates performed well in this question.

Question 8

Distinguish between vacuum gauge and technometer.

Intended Task

The candidates were expected to distinguish between a vacuum gauge and a technometer. The candidates performed fairly well in this question.

Question 9

List and explain three health hazards in the workshop.

Intended Task

The question required the candidates to list and explain three health hazards in the workshop. The candidates performed fairly well in this question.

Question 10

Differentiate between direct cost and indirect cost.

Intended Task

The candidates were expected to differentiate between direct and indirect cost. The candidates performed fairly well in this question.

Question 11

- (a) What is communication?
- (b) State four characteristics of good communication.

Intended Task

The candidates were expected to recall the concept of communication and the characteristics of good communication. The candidates performed well in this question.

Question 12

- (a) List four factors which affect the choice of a workshop site.
- (b) Briefly explain the use of a good administrative and service facilities.

Intended Task

The candidates were expected to recall the factors which affect the choice of a workshop site and explain the use of a good administrative and service facility. The candidates performed well in part 'a' but poorly in part 'b'.

Question 13

- (a) Explain three essential factors that contribute to effective personnel management.
- (b) What is personnel management?

Intended Task

The candidates were expected to recall the concept of personnel management and the factors that contribute to it. The candidates performed poorly in this question.

Question 14

Explain the following different sources of pollution:

- (i) fume
- (ii) dust
- (iii) noise
- (iv) solid and liquid waste

Intended Task

The candidates were expected to explain some sources of pollution. The candidates performed fairly well in this question.

Question 15

- (a) Show with the aid of a diagram only, the construction and features of a typical tractor hydraulic system.
- (b) Explain the operations of the following testing equipment:
 - (i) Compression tester
 - (ii) Analyzer

Intended Task

The candidates were expected to show the construction and features of a typical tractor hydraulic system and explain the operations of some testing equipment. The candidates performed fairly well in this question.

Question 16

- (a) State two factors which influence the need for power assisted steering on certain types of vehicles.
- (b) Sketch the layout and describe the functioning of a hydraulically operated power assisted steering system.

Intended Task

Candidates were expected to recall factors which influence the need for power assisted steering and sketch the layout and to describe the functioning of a hydraulic operated power assisted steering system. The candidates performed poorly in this question.

Question 17

- (a) List three types of Governors.
- (b) Sketch one type of governor used on compression ignition engines and explain how it functions as the engine speed varies.

Intended Task

The candidates were expected to recall types of governors and sketch one type of governor used on compression ignition engines and explain how it functions as the engine speed varies. The candidates performed fairly well.

Candidates' Strength

- ◆ The candidates answered questions on definition of terms and concepts impressively.

Candidates' Weaknesses

- ❖ Poor grammatical expressions.
- ❖ poor computational skills.
- ❖ Poor approach to task.
- ❖ Poor sketches.

Suggestions for Improvement

- The teaching of Mathematics/Physics should be emphasized.
- Drawing/sketching should be practiced.
- Attending English Language classes should be compulsory.
- The candidates should be exposed to practical concepts so as to aid their understanding of questions.

MOTOR VEHICLE MECHANICS WORKS (021-1)

General Comments

The paper covered the entire syllabus. Candidates' performance was good.

Detailed Comments on Each Question

Question 1

- (a) Neatly draw a motor car chassis layout.
- (b) Explain the functions of any three main components.

Intended Task

The question assessed candidates' knowledge on motor car chassis layout and the components. Candidates performed poorly.

Question 2

- (a) List four routine maintenance to be carried out daily on a motor vehicle.
- (b) List three symptoms of an over charged battery.
- (c) Sketch a connecting rod and label two parts.

Intended Task

The question required candidates' knowledge of an over charged battery, routine maintenance on a motor vehicle and listing two parts of a connecting rod. Candidates performed fairly well.

Question 3

- (a) Explain the following fuel oil terms:
 - (i) volatility
 - (ii) viscosity
 - (iii) flash point
- (b) State three safety precautions to be observed when preparing an electrolyte.
- (c) Draw the instrument used to measure gravity of a battery.

Intended Task

The candidates were expected to explain volatility, viscosity, flash point and state the precautions to be observed when preparing an electrolyte and draw instrument connecting battery. Candidates performed poorly.

Question 4

- (a) State two purposes of multi-drive axle.
- (b) State your reasons why it is preferable to employ two or more propeller shafts on long vehicle.
- (c) Using simple sketches, differentiate between over slung multi-drive axles.

Intended Task

The question expected the candidates to satisfactorily state: purpose of multi-drive axle, reasons why two or more persons should be employed in a propeller shafts on longer vehicles and differentiate between over slung multi-drive axis. Candidates performed averagely.

Question 5

- (a) With the aid of sketches, explain what takes place in the cylinder during each of the four stroke of petrol engine.
- (b) State the firing orders of a four stroke engine.

Intended Task

The candidates were required to explain in details, what takes place in the cylinder during the four stroke of petrol engine. Candidates performed poorly.

Question 6

- (a) List two types of rear axle casing.
- (b) Draw a differential unit and label four parts.
- (c) State two types of spanners that are commonly used in the motor vehicle workshop.

Intended Task

The candidates were asked to list two types of car axle casing, label four parts of differential unit and list two types of spanners used in the motor vehicle workshop. Candidates performed well.

Question 7

- (a) Define:
 - (i) phasing
 - (ii) calibration
- (b) List five differences between C.I. and S. I. engine.
- (c) With the aid of simple sketches, differentiate between a direct and indirect combustion chamber shapes.

Intended Task

The candidates were asked to define phasing calibration and list five differences between C. I and S. S. and to differentiate between direct and indirect Combustion chamber shapes. Candidates performed poorly.

Candidates' Strength

- ◆ Many of the candidates answered question 2 correctly.

Candidates' Weakness

- ❖ Poor drawing skills.

Suggestions for Improvement

- Candidates should cultivate the habit of reading text books.
- Teachers should lay emphasis on the teaching of drawing in technical schools.
- Teachers should advice students on good use of school library.

ADVANCED ELECTRICAL INSTALLATION AND MAINTENANCE WORKS (046-1)

General Comments

The questions covered the syllabus and the general performance of the candidates was fair.

Detailed Comments on Each Question

SECTION A (Short Structures)

Question 1

State Kirchoff's current law.

Intended Task

The question tested candidates' ability to recall Kirchoff's current law. Many candidates answered the question correctly.

Question 2

Explain the term 'Phone difference'.

Intended Task

Candidates were expected to give explanation of the term 'phone difference'. Many candidates were unable to explain the term 'phone difference'.

Question 3

Differentiate between iron loss and copper loss.

Intended Task

Candidates were expected to distinguish between iron loss and copper loss. Many candidates performed well.

Question 4

Define momentum.

Intended Task

The question required candidates' ability to recall what momentum really means. The question was answered correctly by the candidates.

Question 5

List two classifications of semi – conductors.

Intended Task

Candidates were expected to mention two classifications of semi-conductors. Candidates performed well.

Question 6

What happens to like charges?

Intended Task

The question required candidates' ability to explain what happens to like charges. Candidates answered the question correctly.

Question 7

State two reasons why earthing is required in an electrical installation.

Intended Task

Candidates were expected to give two reasons why earthing is required in an electrical installation. Candidates performed well.

Question 8

Explain the term 'Synchronization'.

Intended Task

Candidates were expected to give detailed information about the term 'Synchronization' Candidates answered the question correctly.

Question 9

What is parallax error in measuring instrument?

Intended Task

The question is testing candidates' knowledge of parallax error in measuring instrument. Candidates performed well in this question.

Question 10

List two induction motor starters

Intended Task

Candidates were expected to list two induction motor starters. Candidates answered the question correctly.

SECTION B

Question 11

- (a) List two methods of synchronizing alternatives.
- (b) An a.c. voltage of rms value 110v is connected in series with a junction diode and a load resistor of $1.1k\Omega$ find:
- (i) the peak current through the diode
 - (ii) the peak output voltage
- Assuming that:
- (a) the diode is ideal.
 - (b) the diodes forward resistance Ω is 15 and the forward voltage drop across it is 0.7v.

Intended Task

The candidates were required to mention two methods of synchronizing alternatives and to calculate both the current through the diode and the peak output voltage in two ways:

- (i) when the diode is ideal and
- (ii) when the diode's forward resistance is 15 Ω and the forward voltage drop across it is 0.7v based on the specification given: ac voltage of rms = 110v & load resistors for $1.1k\Omega$). Many candidates made computational errors on diode and so performed poorly.

Question 12

- (a) What is meant by uniform circular motion?
- (b) A satellite travels in a circular orbit 3.59×10^4 km above the earth with a speed of 1.11×10^4 km/h. What is the period of the satellite's motion? The radius of the earth is 6.38×10^3 km

Intended task

The candidates were expected to define uniform circular motion and calculate the period of a satellite motion whose circular orbit is 3.59×10^4 km above the earth and its speed is 1.11×10^4 km while the earth's radius is 6.38×10^3 km. Many candidates were able to define uniform circular motion but made computational errors on satellite's motion and so performed poorly.

Question 13

- (a) Three coils each with resistance 45ohms and with inductance 0.2 Henry are connected to a 415v.3 phase supplying as 50Hz
- (i) in mesh
 - (ii) in star

Calculate for each method of connection:

- (b) list four methods of cooling transformers.
- (c) the current in each coil, the total power in the circuit.

Intended Task

The question required candidates' mathematical ability to calculate for mesh and star connections the current in each coil and the total power in the circuit, following with the specifications of the 3 coils each with resistance 45 ohms and with inductance 0.2 Henry thus connecting to a 415v.3 phase supply at 50Hz. Also, they were expected to mention four methods of cooling transformers.

Many candidates were able to mention methods of cooling transformers but performed poorly on mesh and star calculations.

Question 14

- (a) What is the purpose of interpole?
- (b) Sketch how interpoles are connected.
- (c) What is commutation?

Intended Task

The question required candidates' ability to recall the usefulness of interpole, draw a sketch of how interpoles are connected and define the term 'Commutation'.

Many candidates performed well.

Question 15

- (a) Sketch an hysteresis loop for magnetic material indicating and explaining at least four of its parts.
- (b) State three I.E.E. regulations on motor.

Intended Task

Candidates were expected to draw an hysteresis loop for magnetic material indicating at least four of its parts followed by explanations. They were also to give 3 I.E.E regulations on motor. Candidates were able to give I.E.E regulations on motor but failed to sketch hysteresis loop for magnetic material and so performed poorly.

Question 16

- (a) Sketch a theoretical circuit diagram of three points of lights connected in series.
- (b) State two factors that determine whether lightning protection is required in an installation.
- (c) List two functions a tuning circuit is required to perform.

Intended Task

The question required candidates' ability to draw a theoretical circuit diagram of 3 parts of lights connected in series and give two factors that determine whether lightning protection is required in an installation. Also, they were to give two functions a turning circuit is required to perform. Candidates performed well.

Question 17

- (a) Sketch and label a depletion layer.
- (b) Draw a graph of the total characteristics of a diode.
- (c) Describe the causes of corrosion and the methods of minimizing corrosion.

Intended Task

Candidates were expected to draw and label a depletion layer. Also, they were to draw a graph of the total characteristics of a diode and discuss the causes of corrosion and methods of curbing it. Candidates answered the question poorly.

Candidates' Strengths

- ◆ Many candidates stated Kirchoff's current law.
- ◆ Candidates were able to differentiate between iron loss and copper loss.
- ◆ The term 'momentum' was defined correctly.
- ◆ They were able to define uniform circular motion correctly.
- ◆ Candidates answered the question on interpolate correctly.

Candidates' Weaknesses

- ❖ Poor computational skills.
- ❖ Poor drawing skills.

Suggestions for Improvement

- Teachers should lay emphasis on computational skills.
- Students need to improve on their drawing skills.

FABRICATION AND WELDING (051 -1)

General Comments

The paper covered the syllabus and the performances of the candidates were better compared with the previous year.

Detailed Comments on Each Question

Question 1

- (a) State two reasons why flux should be used before soft soldering operations .
- (b) List two corrosive flux and two non corrosive flux .
- (c) State the main difference between corrosive flux and non corrosive flux .

Intended Task

The candidates were required to state two reasons why flux should be used before soft soldering operations, list two corrosive flux and two non-corrosive flux and to state the main differences between corrosive flux and non-corrosive flux. Candidates performed fairly well.

Question 2

- (a) What is corrosion?
- (b) State four causes of corrosion.
- (c) Explain two methods by which corrosion can be prevented.

Intended Task

The candidates were tested on their knowledge of corrosion and its causes and they were to explain two methods by which corrosion can be prevented. The candidate performed poorly.

Question 3

- (a) Explain briefly two of the following terms:
 - (i) annealing
 - (ii) workhardning
 - (iii) carburizing
 - (iv) pickling
- (b) List four methods by which we protect the surface of a metal from being corroded.
- (c) Explain briefly one of the methods mentioned in question three (a) above.

Intended Task

The candidates were required to explain two among given terms. They were also to list four methods by which we protect the surface of a metal from being corroded and explain briefly one of the methods mentioned in question three (a) above. The candidates performed poorly.

Question 4

- (a) State two materials from which template can be made for structural steel work .
- (b) With the aid of sketches distinguish between:
 - (i) Tensile stress
 - (ii) Compressive stress
 - (iii) Shear stress.

Intended Task

The candidates were required to state two materials from which template can be made for structural steel work and to distinguish with the aid of sketches tensile stress, Compressive stress and shear stress. The candidates performed poorly.

Question 5

- (a)
 - (i) List three safety precautions to be observed when carrying out operations in arc welding process and
 - (ii) three precautions in gas welding operation.
- (b) Give two methods used in detecting defects in:
 - (i) Destructive test
 - (ii) Non destructive test

Intended Task

The candidates were required to list three safety precautions to be observed when carrying out operations in arc welding process and three precautions in gas welding operation. Moreover, they were to give two methods used in detecting defects in destructive test and non-destructive test. The candidates performed fairly well.

Question 6

Sketch and name the parts of two of the following tools:

- (i) Hand lever shear
- (ii) Anvil
- (iii) Hack saw frame with fixed blade.

Intended Task

The candidates were required to sketch and name the parts of two of given tools. The candidates performed fairly well.

Question 7

(a) State any two faults that could be found in each of the following joining process:

- (i) welding
- (ii) riveting
- (iii) bolting

(b) Explain how each of the faults in 7(a) above can be prevented.

Intended Task

The candidates were required to state any two faults that could be found in given joining process. They were also to explain how each of the faults given can be prevented. The candidates performed poorly.

Candidates' Weaknesses

- ❖ Poor sketching skills
- ❖ Poor level of expressions

Suggestions for Improvement

- Teachers should endeavour to cover all aspects of the syllabus before the examination.
- Teachers should lay more emphasis on the teaching of free hand sketching.
- Teachers in the sciences should always relate their teaching to activities in the various programmes for better understanding.

ADVANCED FABRICATION AND WELDING (056 -1)

General Comments

The questions covered the syllabus and the performance of the candidates was poor compared with that of the previous year.

Detailed Comments on Each Question

Question 1

- (a) Define gas tungsten arc Welding (GTAW).
- (b) Name two basic parts of a gas tungsten arc welding set.

Intended Task

The candidates were required to define gas tungsten Arc welding (GTAW) and to give two basic parts of a gas tungsten arc welding set. Candidates performed fairly well.

Question 2

List four gas welding outfit.

Intended Task

The candidates were expected to list four gas welding outfit. Their performance was poor.

Question 3

State four hazards relating to gas shield arc welding.

Intended Task

Candidates were required to state four hazards relating to gas shield arc welding. Many candidates could not state the hazards relating to gas shield arc welding hence, they performed poorly.

Question 4

- (a) What length of rivet should protrude through the work to form the correct head?
- (b) Rivet may be worked hot or cold. State when and why.

Intended Task

The candidates' knowledge were required on the length of rivet that should protrude through the work to form the correct head and to state when and why a rivet may work hot or cold. The

candidates could not state the difference between hot and cold riveting. Hence they performed poorly.

Question 5

- (a) What is a solder?
- (b) State three principles of solder.

Intended Task

The candidates' knowledge were required of a solder and the three principles of solder. The candidates performed poorly.

Question 6

- (a) Define arc blow.
- (b) State two methods of correcting arc blow.

Intended Task

The candidates' knowledge were required on an arc blow and the methods of correcting arc blow. The candidates performed fairly well.

Question 7

- (a) List four different kinds of shear, both for thin and thick sheet.

Intended Task

The candidates were required to list four different kinds of shear, both for thin and thick sheet. The candidates performed poorly.

Question 8

List four causes of explosion when using gases in the workshop.

Intended Task

The candidates were required to list four causes of explosion when using gases in the workshop. The candidates performed poorly.

Question 9

- (a) When is it necessary for a welder to identify metals.
- (b) List three metals that can be identified with their colours.

Intended Task

The candidates were required to state when it was necessary for a welder to identify metals and to list three metals that can be identified with their colours. Candidates performed poorly.

Question 10

- (a) From what metals is an anvil made?
- (b) What is the square hole in the face of the anvil used for and what is it called?

Intended Task

The candidates were required to state the type of metals from which anvil is made and to equally state what the square hole in the face of anvil is used for and what it is called. The candidates performed fairly well.

Question 11

With a neat sketch, identify a circuit diagram of an alternating current arc welding set.

Intended Task

The candidates were required to identify a circuit diagram of an alternating current arc welding set using a sketch. They all failed to sketch, hence, they performed poorly.

Question 12

- (a) State the first two essential safety requirements when using gas welding process.
- (b) Where is the heat required for gas welding and cutting derived.

Intended Task

The candidates were required to state the first two essential safety requirements when using gas welding process and to state where the heat required for gas welding and cutting is derived. The candidates' performance was poor.

Question 13

The diagram below is a copper rectangular prisms A and B:

- (i) calculate the volume of Prism A.
- (ii) calculate the volume of Prism B.
- (iii) calculate the total volume.

Intended Task

The candidates were required to calculate the volume of Prism A, B and the total volume using the diagram above of copper rectangular prism A and B. Candidates performed poorly.

Question 14

- (a) State the three methods of pattern development.
- (b) Which of the methods is used for the pattern of square to round transformer .

Intended Task

The candidates were required to list the three methods of testing the hardness of material and to explain the wedge principle. The candidates could not explain the wedge principle, hence they performed poorly.

Question 15

- (a) List the three methods of testing the hardness of material.
- (b) Explain the wedge principle.

Intended Task

Candidates were required to list three methods of testing the hardness of material and to also explain the wedge principle. The candidates also performed poorly.

Question 16

Explain the uses of the following threads:

- (i) square thread
- (ii) acme thread
- (iii) buttress thread
- (iv) B. A. Thread

Intended Task

The candidates were required to explain the uses of square thread, acme thread, buttress thread and B.A. thread. They could not explain the uses of the thread, hence, they performed poorly.

Question 17

- (a) Identify the ground colour of the following gas cylinders:
 - (i) hydrogen
 - (ii) argon
 - (iii) air
 - (iv) coal gas
- (b) List the four gases typically used for welding and cutting.

Intended Task

The candidates were required to identify the ground colour of hydrogen, argon, air and coal gas. They were equally required to list four gases typically used for welding and cutting. Candidates performed poorly.

Candidates' Weaknesses

- ❖ They were unable to answer the questions adequately.
- ❖ Poor sketching skills.
- ❖ They were unable to differentiate between causes and hazards.

Suggestions for Improvement

- The learning of sketching should be emphasized.
- the setting of questions should be on 50/50 basic for both welding and fabrication.
- The use of English language should be encouraged.

ADVANCED MECHANICAL ENGINEERING CRAFT PRACTICE (066-1)

General Comments

The questions covered the syllabus and the general performance of the candidates was good.

Detailed Comments on Each Question

SECTION A: Short structures

Question 1

Mention four protective devices used during production in 'die making' and sketch one .

Intended Task

Candidates were expected to list four protective devices used during production in 'die making' and draw one of them. Many candidates performed poorly.

Question 2

- (a) Differentiate between boring and coring.
- (b) State the precaution necessary when performing counter boring operation.

Intended Task

The question required candidates' ability to distinguish between boring and coring. They were also to give necessary precautions when performing counter boring operations. Candidates answered the question correctly.

Question 3

List four causes of tool hazards.

Intended Task

Candidates were expected to list four causes of tool hazards. Many candidates performed well.

Question 4

Mention three operations that can be performed on horizontal boring.

Intended Task

Candidates were to enumerate three operations that can be performed on horizontal boring. Many candidates answered the question correctly.

Question 5

- (a) Differentiate between forming and generating.
- (b) Mention the functions of a guide pillar during blanking operation.

Intended Task

The question is testing candidates' ability to distinguish between forming and generating. Candidates performed well.

Question 6

List two advantages and disadvantages of boring bar over a forged tool.

Intended Task

Candidates were expected to mention two advantages and disadvantages of boring bar over a forged tool. The question was answered correctly by candidates.

Question 7

Write short notes on the following:

- (i) Stamping
- (ii) Pressing
- (iii) Embossing
- (iv) Coining

Intended Task

The question required candidates' ability to give explanation on each of the above listed terms. Candidates performed well.

Question 8

State four methods of preparing surfaces against corrosion.

Intended Task

Candidates were expected to give four methods of preparing surfaces against corrosion. The question was answered correctly by candidates.

Question 9

- (a) Mention two methods of preventing fluid leakage.
- (b) List two functions of a valve.

Intended Task

Candidates were expected to list two methods of preventing fluid leakage and give two functions of a valve. Candidates' performed well.

Question 10

- (a) Differentiate between disc and abrasive wheels.
- (b) State 2 reasons for wheel breakage.

Intended Task

Candidates' ability to distinguish between disc and abrasive wheels and state two reasons for wheel breakage was tested in this question. Many candidates answered the question correctly.

SECTION B (ESSAY)

Question 11

- (a) Use simple line diagram to discuss the cutting action of a die and punch during a blanking operation.
- (b) What is the effect of too small a clearance between a punch and a die?

Intended Task

The question required candidates' ability to use simple line diagram to give explanation on cutting action of a die and punch during a blanking operation. Also, they were expected to state the effect of too small a clearance between a punch and a die. Many candidates responded well to the question.

Question 12

With the aid of diagram, illustrate how a work piece may be held using each of these clamps:

- (a) latch
- (b) button
- (c) two – way

Intended Task

The question required candidates' ability to draw diagrams and illustrate how a work piece may be held using latch, button and two way clamps. Many candidates answered the question correctly.

Question 13

- (a) Describe the installation and leveling of a new horizontal boring machine
- (b) State the purpose of jigs and fixtures in manufacturing.

Intended Task

Candidates were expected to give details of installation and leveling of a new horizontal boring machine. Also, they were to give the purpose of jigs and fixtures in manufacturing. Candidates performed well.

Question 14

- (a) Give five non-mechanical hazards and discuss two.
- (b) List three conditions necessary for effective performance of machineries.

Intended Task

The question required candidates' ability to mention five non-mechanical hazards and give details of two was tested. They were also to give three conditions necessary for effective performance of machineries? Candidates answered the question correctly.

Question 15

- (a) List six types of materials used for bearing.
- (b) Write few notes on these valves:
 - (i) crate;
 - (ii) globe;
 - (iii) safety.

Intended Task

Candidates were expected to name six types of materials used for bearing and write few notes on the above listed valves. The question was answered correctly by the candidates.

Question 16

- (a) Discuss four processes of gravity feed into a split metal die.
- (b) Mention three basic steps in making a hole.

Intended Task

The question required candidates' ability to give details of four processes of gravity feed into a split metal die and enumerate three basic steps in making a hole. Candidates performed well.

Question 17

- (a) Mention four lubricating systems and discuss one.
- (b) List two methods of testing sand.
- (c) Use a sketch to explain the function of a fly press.

Intended Task

Candidates were to list four lubricating systems and give explanation of one of them. Also, they were expected to name two methods of testing sand and draw a sketch to explain the function of a fly press. Candidates answered the question correctly.

Candidates' Strengths

- ◆ Many candidates answered the question on boring and coring correctly.
- ◆ Candidates answered the question on farming and generating well.
- ◆ Methods of preparing surfaces against corrosion was answered correctly by candidates.
- ◆ Candidates answered the question on disc and abrasive wheels well.
- ◆ Candidates answered the question on lubricating system correctly.

Candidates' Weaknesses

- ❖ There were grammatical errors in some candidates' presentation of ideas.
- ❖ Many candidates failed to state the protective devices used in production of die making.
- ❖ Some candidates couldn't label diagrams well.

Suggestions for Improvement

- Teachers should lay emphasis on the teaching of English Language
- Candidates should cultivate the habit of reading journals, periodicals, magazine, novels, etc.
- Candidates should improve on their study habits.

ADVANCED ELECTRONICS WORKS (076-1)

General Comments

The question covered the syllabus and the candidates' performance was poor.

Detailed Comments on Each Question

SECTION A

Question 1

Explain vestigial sideband transmission and state the reasons for its use in television system.

Intended Task

The candidates were expected to explain vestigial sideband transmission and state the reasons for its use in TV system. The candidates performed fairly well in this question.

Question 2

State two (2) effects of encoding in colour television system.

Intended Task

Candidates were expected to state the effects of encoding in colour television system. Candidates performed poorly.

Question 3

State four (4) functions of the colour decoder.

Intended task

Candidates were expected to state the functions of the colour decoder. Many of the candidates who attempted the question performed fairly.

Question 4

Define an aerial and describe how it can be used to correct the problem of ghost image in a television receiver.

Intended Task

The question required candidates' knowledge on aerial and description of how it can be used to correct the problem of ghost image in a television receiver. Those who attempted the question performed fairly well.

Question 5

State the purpose of using regaussing coil in television receiver.

Intended Task

The question required candidates' knowledge on the purpose of using regaussing coil in a television receiver. Those who answered it performed fairly well.

Question 6

Show that the resonant frequency of a radio receiver is given
$$f_r = \frac{1}{2\pi\sqrt{LC}}$$

Intended Task

The question required candidates' ability to show the resonant frequency of a radio receiver. Those who attempted this question got poor derivation and so performed poorly.

Question 7

State four differences between monochrome and colour television receiver

Intended Task

The question required candidates' knowledge on the difference monochrome and colour television receivers. Those who attempted the question performed fairly well.

Question 8

Briefly describe the operation of record/playback head of a tape recorder.

Intended Task

Candidates were required to describe the operation of record/playback head of a tape recorder. Many of the candidates were unable to describe the operation. They performed fairly.

Question 9

What is pattern generator? How is it helpful in television testing?

Intended Task

Candidates were required to recall pattern generator and how it can be helpful in television setting. Those who attempted the question performed fairly well.

Question: 10

Name the three primary colours and state their properties.

Intended Task

The question required candidates to name three primary colours and state their properties. Candidates performed fairly well.

SECTION B**Question 1**

- (a) Calculate the image frequency of a receiver whose intermediate frequency is 455KHz and a desired frequency of 1000KHz.
- (b) Make a sketch of a TV channel bandwidth of 7MHZ showing the locations of picture, colour and sound carrier frequencies.

Intended Task

Candidates were required to calculate the image frequency of a receiver and sketch TV channel bandwidth of 7MHZ showing the locations of pictures, colours and sound carrier frequencies. Many of the candidates who attempted this question performed poorly.

Question 2

Write short notes on the following:

- (a) Gamma circuit
- (b) R.G.B. Matrix
- (c) Colour bar generator
- (d) Comb filter

Intended Task

The question required candidates' knowledge on Gamma circuit, R.G.B. matrix, colour bar generator and comb filter. Candidates who attempted the question had poor understanding of the points hence, they performed poorly.

Question 3

- (a) With the aid of a suitable block diagram, describe the action of tape recorder.
- (b) Define erasing in relation to a tape recorder and describe how the process is carried out.

Intended Task

The question required candidates' ability to draw and describe the action of a tape recorder and to define erasing in relation to a tape recorder and also describe how the process is carried out. Many of the candidates attempted it and they performed fairly well.

Question 4

Distinguish between the following:

- (a) Static and dynamic convergence.
- (b) Secondary and complementary colours.
- (c) Chrominance and luminance signal.
- (d) Adjacent channel interference and ghost interference.

Intended Task

The question required candidates' ability to distinguish between static & dynamic convergence, secondary and complementary colours, chrominance and luminance signal, adjacent channel interference and ghost interference. Those who attempted the question performed fairly well.

Question 5

- (a) Identify the probable cause of the following faults in a television receiver and suggest the necessary remedies for the correction of the fault:
 - (i) Drifting colours or colour bars
 - (ii) One colour missing
 - (iii) Snowing or weak picture, sound and raster okay
 - (iv) Distorted sound output
- (b) State four (4) functions of the RF tuner Circuit of a television receiver.

Intended Task

The question required candidates' ability to identify the probable cause of drifting colour or colour bars, one colour missing, snowy or weak picture, sound and raster okay, distorted sound output faults in a television receiver and suggest the necessary remedies for the correction of the faults. The question was well answered and the candidates performed very well.

Question 6

Draw the block diagram of a monochrome television receiver circuit and show the various waveform(s) associated with each section.

Intended Task

The question required the candidates' ability to draw the block diagram of a monochrome television receiver circuit and show the various waveform(s) associated with each section. Those who attempted the question performed poorly.

Question 7

- (a) Identify three functions of the RF amplifier in a radio receiver
- (b) Explain the following in relation to a radio receivers:
 - i. Selectivity
 - ii. Sensitivity
 - iii. Fidelity
 - iv. Emphasis
 - (v) De-emphasis

Intended Task

The question required the candidates' knowledge on the functions of the RF amplifier in a radio receiver and the explanation of selectivity, sensitivity, fidelity, emphasis and de-emphasis in relation to radio receivers. Those who attempted it performed fairly well.

Candidates' Strength

- ◆ Candidates answered the questions correctly on definition of terms.

Candidates' Weaknesses

- ❖ Poor drawing/sketching skills.
- ❖ Poor grammatical expressions.
- ❖ Poor interpretation of questions.

Suggestions for Improvement

- Teachers/instructors should lay emphasis on drawing/sketching that are related to the trade.
- Teachers/Instructors should emphasize on skills of answering/interpretation of questions.

INSTRUMENT MECHANICS WORKS (111-1)

General Comments

The question met the required standard. Candidates performed fairly compared to the previous year.

Detailed Comments on Each Question

Question 1

- (a) State three safety measures to be taken while working in the workshop.
- (b) Draw a well labeled diagram of level measuring instrument.
- (c) Define temperature and name its units.

Intended Task

The question required candidates' ability to write three safety measures to be taken while working in the workshop. They were also expected to draw a well labeled diagram of level measuring instrument and define temperature and name its units. Candidates performed fairly well.

Question 2

- (a) Draw three electrical symbols and their uses.
- (b) Draw a well labeled diagram of thermocouple and explain its functions.

Intended Task

The question required candidates' ability to draw three electrical symbols and their uses. They were also to draw a well labeled diagram of thermocouple and explain its functions. Candidates performed fairly well.

Question 3

- (a) Define pressure and its units.
- (b) Mention two instruments used for flow rate.
- (c) State the definition of speed and its units.

Intended Task

The question required candidates to define pressure and its units and mention two instruments used for flow rate. They were to state the definition of speed and its unit. Those who attempted the question performed fairly well.

Question 4

- (a) What is a wattmeter?
- (b) Explain the functions of iron core in the wattmeter.
- (c) State the functions of signal generator.

Intended Task

The question tested candidates' knowledge of wattmeter and they were to explain the functions of iron in the wattmeter. They were also to state the functions of signals generator. Candidates performed fairly.

Question 5

- (a) State the functions of an amplifier in a circuit.
- (b) What is a transducer?
- (c) Explain electromagnetic solenoid.

Intended Task

The question required candidates' ability to state the functions of an amplifier in a circuit and define transducer? They were also to explain electromagnetic solenoid. Candidates performed fairly.

Question 6

- (a) Explain the following terms:
 - i. transfer lag
 - ii. deviation
 - iii. two step control
- (b) Explain the following actions:
 - i. integral action
 - ii. derivative action
 - iii. proportional action

Intended Task

The question required candidates' ability to explain the following terms: transfer lag, deviate, two step control and also to explain the following actions: integral action, derivative action and proportional action. Candidates performed fairly well.

Question 7

- (a) Explain the operations of a grinding machine.
- (b) List grinding machine accessories.
- (c) State two advantages and two disadvantages of cylindrical grinder.

Intended Task

The question required candidates' ability to explain the operations of a grinding machine and list grinding machine accessories. They were also to state two advantages and two disadvantages of cylindrical grinder. Those who attempted the question performed fairly.

Candidates' Weaknesses

- ◆ Poor grammatical expressions.
- ◆ Poor computational skills.

Suggestions for Improvement

- Candidates should practice drawing.
- Candidates should learn definitions.
- The units of the four variables should be known by the candidates.
- Operation sequence of all the instruments should be known by the candidates.
- Drawing/sketching should be emphasized in technical colleges.

GENERAL METAL WORKS (191-1)

General Comments

The questions covered the syllabus and the candidates' performance was generally good.

Detailed Comments on Each Question

Question 1

- a. What is Safety?
- b. State two safety on each of the following items:
 - (i) Tool safety
 - (ii) Workshop safety
 - (iii) Machine safety

Intended Task

The question tested candidates' knowledge of safety and to state some safety terms. Candidates performed fairly well.

Question 2

- (a) State two properties of these metals:
 - (i) Lead
 - (ii) Cast iron
 - (i) Copper
 - (ii) Steel
- (b) Outline two uses of each of the metals.

Intended Task

The question tested candidate's knowledge of metals. Candidates were expected to state the properties as well as the uses of metals. Candidates performed well.

Question 3

- (a) Classify the tools listed below according to marking, driving and cutting purposes:
 - (i) scribe
 - (ii) file
 - (iii) punch
 - (iv) spanner
 - (v) divider
 - (vi) drill
 - (vii) Screw driver

- (b) State the metal in which the following tools are made:
 - (i) drill
 - (ii) files
 - (iii) screw drivers

Intended Task

The question required candidates' ability to classify these tools: scriber, file, punch, spanner, divider, drill & screw drivers into marking, driving and cutting purposes and to state the metal in which drill, files & screw drivers are made. Candidates performed well.

Question 4

- (a) Write short notes on the following processes:
 - (i) upsetting
 - (ii) annealing
 - (ii) health forge
- (b) Explain an operational sequence of a funnel.

Intended Task

The candidates were expected to write short notes on upsetting, annealing and health forge. They were also to explain an operational sequence of a funnel. Candidates performed fairly well.

Question 5

- (a) Neatly sketch a drill and label its parts.
- (b) State two reasons for using coolant when turning.

Intended Task

The question tested the candidates' practical knowledge of a drill. The candidates who attempted these questions were unable to draw a good diagram as required. Candidates performed poorly.

Question 6

- (a) Briefly explain the following:
 - (i) clearance fit.
 - (ii) temporary joint.
 - (iii) draw filling (Support with necessary diagrams). The candidates were expected to have the knowledge of clearance fit, temporary joint and draw filling. Candidates performed well.

Intended Task

The candidates were expected to state ways in which the operational size of a lathe machine can be determined. They were also to list and explain types of flame and its uses. Candidates performed fairly well.

Question 7

- (a) State three ways in which we can determine the operational size of the lathe machine.
- (b) List and explain the three types of flame and their uses.

Intended Task

The candidates were expected to state ways in which the operational size of a lathe machine can be determined. They were to list and explain types of flames and their uses. Candidates performed fairly well.

Candidates' Strengths

- ◆ Many candidates answered questions on safety correctly.
- ◆ Candidates answered questions on metal correctly.
- ◆ Candidates answered questions on marking, driving and cutting purpose correctly.
- ◆ Candidates answered questions on clearance fit, temporary joint and drew filling correctly.
- ◆ Candidates answered questions on types of flames and their uses correctly.

Candidates' Weaknesses

- ❖ Candidates failed to answer questions on tool safety, workshop safety & machines safety correctly.
- ❖ Candidates failed to explain an operational sequence of a funnel.
- ❖ Poor grammatical expressions.
- ❖ Poor drawing skills.

Suggestions for Improvement

- Assignments involving drawing/sketching should be given more frequently to candidates.
- Candidates should be exposed to tools, machines and equipment within their syllabus.

GENERAL WOOD WORKS (192-1)

General Comments

The question covered the syllabus and the candidates' performance was fairly good.

Detailed Comments on Each Question

Question 1

Write short notes on the following:

- (i) knots
- (ii) shakes
- (iii) interlocked grain
- (iv) decay
- (v) working of wood

Intended Task

The candidates were expected to write short notes on knots, shakes, interlock grain, decay and working of wood. Candidates performed fairly well.

Question 2

- (a) Explain two methods of drying timber.
- (b) A log from a freshly felled tree has been sawn into 50mm thick boards; show by neat sketch how the boards would be stacked for air seasoning.

Intended Task

The question tested candidates' ability to recall methods of drying timber. Candidates performed fairly well.

Question 3

Make a neat sketch of the cross section of a trunk and indicate the following parts :

- (i) pith
- (ii) cambium layer
- (i) growth ring
- (ii) medullary rays
- (iii) bark

Intended Task

The candidates were expected to show with neat sketches, the cross section of a trunk indicating the following parts: pith, cambium layer, growth ring, medullary rays and bark. Candidates performed poorly.

Question 4

- (a) What is meant by conversion of timber?
- (b) Name three methods of converting logs into planks. Illustrate your answer with sketches.

Intended Task

The question tested candidates' ability to recall and explain conversion of timber, methods on how logs can be converted into planks illustrating their answers with diagram. Candidates failed to draw or sketch the conversion method listed above. However, candidate performed well.

Question 5

Sketch and state the uses of any three of the following tools:

- (i) coping Saw
- (ii) mallet
- (iii) gee Cramp
- (iv) panel Saw
- (v) sliding bevel.

Intended Task

Candidates were to make a sketch of these tools and state their uses: Coping Saw, Mallet, Gee Cramp, Panel Saw and Sliding bevel. Candidates were unable to sketch the tools listed above. However, candidates performed fairly well.

Candidates' Strengths

- ◆ Candidates answered questions on method of drying timber correctly.
- ◆ Candidates answered questions on conversion of timber correctly.

Candidates' Weaknesses

- ❖ Poor sketching skills.
- ❖ Lack of appropriate use of technical terminologies.

Suggestion for Improvement

- Teachers should give the students more drills on sketching and drawing.

BUILDING/ENGINEERING DRAWING (193-2)

General Comments

The question covered the syllabus and candidates' performance was generally good.

Detailed Comments on Each Question

Question 1

The diagram below shows the orthographic view of a lever in third angle projection. Draw the:

- (a) missing end view
- (b) isometric view, making x the lowest point

Intended Task

The question assessed candidates' knowledge and understanding of orthographic view and isometric view while making x the lowest point. Candidates performed averagely.

Question 2

The figure below shows the front elevation of a right cone cut by line PQ. Draw full size in first angle projection.

- (a) the given elevation
- (b) a complete plan
- (c) the development of the Frustrum

Intended Task

The question tested candidates' drawing ability on elevation and projection. Candidates performed averagely.

Question 3

The crank OA shown below is rotating about centre, at constant speed. AB is a connecting rod fastened at B to a sliding member constrained to reciprocate along centre line BO. Draw the locus of the point P.

Intended Task

The question tested candidates' mathematical and drawing ability on rod. Candidates performed fairly well.

Question 4

SPECIFICATION:

- (1) foundation strip: Foundation 600 below
- (2) WALL: External walls 225 while internal walls 150
- (3) FLOOR
 - (a) 250 hard core
 - (b) D.P.C.
 - (c) 200 mass concrete
 - (d) 30 floor screed

- (4) DOOR
 - D1 1500 x 2, 100 panel
 - D2 1000 x 2, 100 panel
 - D3 900 x 2, 100 flush

- (5) WINDOW
 - W1 1,200 x 1000 louvers
 - W2 1,000 x 800 louvers
 - W3 700 x 600 louvers
 - W4 600 x 600 louvers

- (6) ROOF
 - (a) pitch 150 gable
 - (b) Eave 300
 - (c) Rafter 150 x 150
 - (d) Struts 100 x 50
 - (e) Tie beam 150 x 50
 - (f) wall plate 100 x 75

All DIMENSIONS IN MM

Below is a floor plan of three bedrooms flat.

Use the specification above to draw:

- (i) The floor plan in scale 1:100.
- (ii) Section B-B from the foundation footing to the roof in scale 1:50.
- (iii) The front elevation in scale 1:100.

Intended Task

The question tested candidates' drawing skills on plan of a residential building and what it takes to make a residential building. Candidates performed averagely.

Question 5

The view below shows the parts of a 'U' clamp. Assemble the parts and draw:

- (a) The front sectional $x - x$ view when the cutting plane passes through along the axis of the Lead shaft at the side elevation.
- (b) The side elevation showing the cutting plane.
- (c) Draw a part list.

Intended Tasks

The question required candidates' knowledge and understanding on clamp. Candidates performed averagely.

Candidates' Strengths

Candidates showed good pencil work.

Candidates used good hatching method to indicate the section proper displacement of the angle of profession was used.

Candidates' Weaknesses

- ❖ Candidates displayed poor skills in their interpretation of drawing.
- ❖ Candidates neglected dimensions in their drawings.
- ❖ Lack of skills in the handling of drawing instruments.

Suggestion for Improvement

- Teachers should expose candidates to the basic rudiments of drawing and sketching.

BASIC ELECTRICITY (194-1)

General Comments

The question covered the syllabus and the candidates' performance was generally good.

Detailed Comments on Each Question

Question 1

- (a) Define the term electromotive force.
- (b) List any two sources of electromotive force.
- (c) Four Leclanche cells of 1.5 volts per cell with an internal resistance of 0.2Ω each are connected in series. If an external resistance of 6Ω is connected across the combination, determine the:
 - (i) total e.m of the battery.
 - (ii) total internal resistance of the cells.
 - (iii) total resistance of the battery.
 - (iv) current through the 6Ω resistor.

Intended Task

The question tested candidates' knowledge of electromotive force and cell. Those who attempted the question performed well.

Question 2

- (a) What is a capacitor?
- (b) List any two operating characteristics of a capacitor.
- (c) Four capacitors of values $2\mu\text{F}$, $8\mu\text{F}$, $10\mu\text{F}$ and $12\mu\text{F}$ respectively are connected in series across a 240 volts d.c. supply. Determine the:
 - (i) Effective capacitance of the combination.
 - (ii) Charge stored on each capacitor.
 - (iii) P.d across the $12\mu\text{F}$ capacitor.
 - (iv) Energy stored in the circuit.

Intended Task

The question assessed candidates' knowledge of capacitor and required them to list two operating characteristics of a capacitor. They were also tested on how capacitors valves are connected in series. Many candidates answered question 'A' correctly but performed poorly on operating characteristics of a capacitor, thereby performing averagely.

Question 3

- (a) Define resistance.
- (b) Determine the rating of a resistor which has the following colour codes: Brown, Orange, Green and Brown.
- (c) Two resistors 10Ω and 15Ω are connected in parallel. Another resistor of value 2Ω is connected in series with the parallel group. If a 240 volt battery is connected across the combination, calculate the:
 - (i) effective resistance of the parallel group.
 - (ii) total resistance of the circuit.
 - (iii) current in the circuit.
 - (v) Potential difference across the parallel group.

Intended Task

The question evaluated candidates' knowledge of resistance as well as how resistor can be rated in the following colour codes: Brown, Orange, Green and Brown. Many candidates got the definition of resistance but performed poorly on question "B and C" therefore performed fairly well.

Question 4

- (a) Define the following terms in relation to an a.c. Circuit and state their units of measurement and symbols:
 - (i) Reactance
 - (ii) Impedance
- (b) A resistor of 10Ω and a capacitor of $120\mu\text{F}$ are connected in series across a 240V, 50Hz supply, calculate:
 - (i) The capacitive reactance.
 - (ii) Impedance of the Circuit.
 - (i) Current passing through the capacitor.
 - (ii) Voltage across the resistor.

Intended Task

The question tested candidates' knowledge of calculation of electricity. Candidates who attempted this question performed well.

Question 5

- (a) State Right hand Rule as applied to induced e.m.f.
- (b) With sketches, show the hysteresis loop of:
 - (i) Hard magnetic material
 - (ii) Soft magnetic material
- (c) A coil has self inductance of 22 henry when the current that flows through the circuit changes from 0.5 amps to 0.3 amps in one minute. Calculate the induced e.m.f. in the coil.

Intended Task

Candidates were expected to define Right hand Rule and display their mathematical ability in sketching hard magnetic material and soft magnetic material. Many candidates were unable to answer this question, therefore performed poorly.

Question 6

- (a) List any three measuring instruments.
- (b) Mention two advantages and one disadvantage of moving coil instrument.
- (c) A moving coil instrument gives full scale deflection with a current of 0.02 amps and a voltage of 0.08 volts. Calculate the value of the multiplier resistor to be connected in series with the instrument so that it can measure 100 volts.

Intended Task

The question tested candidates' ability to recall some measuring instruments and to state the advantages and disadvantage of moving coil instrument. Candidates performed fairly well.

Question 7

Neatly sketch the British standard (BS) graphical symbols of the following:

- (i) Auto transformer (ii) Capacitor (iii) Thermostat (iv) Bell push (v) 13A socket.
- (vi) fan (vii) diode (viii) incandescent lamp (ix) fuse link (xii) cooker control unit .

Intended Task

The question tested candidates' knowledge and understanding of graphical symbols and their ability to apply mathematical skills in sketching the British standard (BS) graphical symbols. Candidates performed averagely.

Candidates' Strengths

- ◆ Many candidates defined electromotive force correctly.
- ◆ Many candidates answered question on reactance and impedance correctly.

Candidates' Weaknesses

- ❖ Poor computational skills.
- ❖ Poor grammatical expressions.

Suggestions for Improvement

- Teachers should teach students how to present their answers.
- Students should improve on their computational skills.

INTRODUCTION TO BUILDING CONSTRUCTION (211-1)

General Comments

The questions covered the syllabus and the candidates' performance was generally good.

Detailed Comments on Each Question

Question 1

(a) State any two safety regulations in each of these allied trades:

- (i) Painting and decoration
- (ii) Carpentry and joinery

(b) Explain the cleaning process for each of the following tools:

- (i) Wheel barrow,
- (ii) Shovel,
- (iii) Head pan,
- (iv) Spirit level.

Intended Task

The question required candidates' ability to give two safety regulations in each of the above named allied trades. Also, they were expected to give details of the cleaning process for wheel barrow, shovel, lead pan and spirit level. Many candidates performed poorly.

Question 2

(a) Write short notes on the following wood work items:

- (i) Bast,
- (ii) Cambium layer,
- (iii) Rays,
- (iv) Growth ring,
- (v) Bark.

Intended Task

Candidates were expected to write short notes on each of the above listed wood work items. Many candidates answered the question poorly.

Question 3

- (a) Describe in details a method of site investigation suitable on a site for a large building .
- (b) Explain four methods of checking the accuracy of setting out.

Intended Task

The question required candidates' ability to give detailed information about a method of site investigation suitable for a large building. Also, they were expected to give explanation on four methods of checking the accuracy of setting out. Many candidates were unable to answer the question correctly. Hence, they performed poorly.

Question 4

- (a) Define the term foundation
- (b) With the aid of neat sketches, show three types of foundation.

Intended Task

The question required candidates to recall the meaning of foundation and draw neat sketches that show three types of foundation. Many candidates lacked proper understanding of the question. Hence, they performed poorly.

Question 5

- (a) State four functional requirements of ground floor
- (b) Define the following terms in relation to rubble walling:
 - (i) regular coursed rubble.
 - (ii) random rubble.
 - (iii) uncoursed random rubble.
- (c) Why is it necessary that opening must be provided in buildings?

Intended Task

The question is testing candidates' ability to give four functional requirements of ground floor and definitions of the above listed terms. Also, they were expected to give reasons why opening must be provided in buildings. Candidates performed poorly in this question.

Question 6

- (a) Enumerate and briefly explain any five components of roof.
- (b) With the aid of a neat sketch, explain the following building terms:
 - (i) going.
 - (ii) riser.
 - (iii) pitch line.

Intended Task

The question required candidates' knowledge to list and explain briefly any five components of roof and then draw a neat sketch to illustrate the listed terms—going, riser and pitch line. The question was answered poorly by the candidates.

Question 7

- (a) Describe the three stages involved when plastering a wall surface.
- (b) State two functional requirements of a floor screed.
- (c) Briefly distinguish between conduit and surface wiring system in a building.

Intended Task

The question required candidates' ability to explain the three stages involved when plastering a wall surface. Also, they were expected to give two functional requirements of a floor screed and differentiate between conduit and surface wiring system in a building. Candidates performed poorly in this question.

Candidates' Strength

- ◆ A few candidates were able to answer some questions correctly.

Candidates' Weaknesses

- ❖ Poor grammatical expressions.
- ❖ Wrong use of terminologies.
- ❖ Poor handwriting.

Suggestions for Improvement

- Teachers should lay emphasis on the use of English language.
- Students should improve on their reading skills.
- Students should cultivate good study habit.
- Students should be encouraged to practice writing skills.

BLOCKLAYING/BRICKLAYING & CONCRETING (212-1)

General Comments

The questions covered the syllabus and the general performance of the candidates was poor.

Detailed Comments n Each Question

Question 1

(a) With the aid of sketches, describe the following tools/equipment:

- (i) straight – edge
- (ii) pointing trowel
- (iii) cold chisel
- (iv) head pan

(b) State the use(s) of each of the tools/equipment in 1 (a) above.

Intended Task

The question required candidates' ability to draw sketches and describe straight edge, pointing trowel cold chisel and head pan. Also, they were expected to mention the uses(s) of each of the tools. Many candidates were unable to draw good sketches and present their facts logically. Hence, they performed poorly.

Question 2

With the aid of neat sketches show the tools used for carrying out the following craft processes:

- (a) plastering
- (b) floating
- (c) dressing internal angles of walls
- (d) spreading

Intended Task

Candidates were expected to draw neat sketches to show the tools used for carrying out the above listed craft processes. Many candidates performed poorly.

Question 3

(a) Briefly explain the following items of site preparation:

- (i) cleaning
- (ii) hoarding
- (iii) hutment
- (iv) access

- (b) Outline four ways of checking setting-out for accuracy.

Intended Task

The question is testing candidates' ability to explain in brief the above mentioned items for site preparation. Also, they were expected to itemize four ways of checking setting out for accuracy. The question was poorly answered by the candidates.

Question 4

- (a) Describe the process of laying granolithic concrete monolithically.
(b) State four measures to be taken to prevent cracking in in-situ terrazzo flooring.
(c) Explain the term finishing.

Intended Task

The question required candidates' ability to explain the process of laying granolithic concrete monolithically and give four measures to be taken to prevent cracking in in-situ terrazzo flooring. Also, they were expected to explain the term finishing. Many candidates performed poorly in this question.

Question 5

- (a) To a scale of 1:10, construct a semi-circular arch over an opening of span 1.2m and depth of arch = 1 brick
(b) Show the following on the drawing in 5 (a) above:
(i) striking point
(ii) extrados
(iii) keybrick

Intended Task

Candidates were expected to draw to a scale of 1:10 in constructing a semi-circular arch over an opening of 1.2m and depth of arch resulting to 1 brick. Also, they were to indicate on their drawing striking point, extrados and keybrick. Candidates were unable to draw to scale. They performed poorly.

Question 6

- (a) Sketch a purlog scaffold.
(b) Indicate the following parts in 6(a) above:
(i) putlog
(ii) standard
(iii) sole - plate
(iv) toe board

Intended Task

Candidates were expected to sketch a putlog scaffold and indicate putlog, standard, sole-plate and toe board. Many candidates performed poorly.

Question 7

A wall measuring 3600mm long by 3000mm high is to be erected with sandcrete blocks each measuring 450mm x 225mm x 225mm. Calculate:

- (a) The number of blocks to complete the job.
- (b) The number of blocks to be ordered for supply if 10% is allowed for breakages.
- (c) The total cost of blocks needed if a block costs N120.00.

Intended Task

The question is testing candidates' computation skill (based on the measurements given) which involves the number of blocks to complete the job, the number of blocks to be ordered for supply if 10% is allowed for breakages and the total cost of blocks needed if a block costs ₦120.00. Many candidates answered the question poorly.

Candidates' Weaknesses

- ❖ Poor grammatical expressions.
- ❖ Poor computational skills.
- ❖ Poor drawing skills.
- ❖ Misinterpretation of questions.

Suggestions for Improvement

- Need for emphasis on the teaching of English language.
- Students should cultivate the habit of drawing or making sketches of objects.
- Students should cultivate the habit of reading novels, newspapers and other publications.

FURNITURE MAKING (231-1)

General Comments

The paper covered the syllabus and candidates' performance was fair.

Detailed Comments on Each Question

Question 1

Give four qualities of a strong upholstery frame.

Intended Task

The question required candidates' knowledge of a strong upholstery frame. Candidates performed poorly.

Question 2

Explain in detail how you would mark out the shaped legs of upholstery chair.

Intended Task

The question assessed candidates' knowledge of the shaped angles of upholstery chair. Candidates performed poorly.

Question 3

State three factors to be considered when selecting upholstery fabrics.

Intended Task

The question required candidates' ability to recall the factors to be considered when selecting upholstery fabrics. Candidates performed poorly.

Question 4

List five advantages of synthetic foam over the other stuffing materials.

Intended Task

The question required candidates' knowledge of advantages of synthetic foam over the other stuffing materials. Candidates performed poorly.

Question 5

State the difference between natural and artificial seasoning.

Intended Task

The question required candidates' knowledge of the difference between natural and artificial seasoning. Candidates performed poorly.

Candidates' Weaknesses

- ❖ Poor grammatical expressions.
- ❖ Poor computational skills.

Suggestions for Improvement

- Emphasis should be placed on grammatical expressions.
- Candidates should be advised to write more legibly.
- Answers to questions should be more detailed.
- Answers should be supported with good diagrams. This enhances candidates' marks.

ADVANCED FURNITURE MAKING (236-1)

General Comments

The questions covered the syllabus and the candidates' performance was generally poor.

Detailed Comments on Each Question

Question 1

The process of fastening together different kinds of wood after cutting is called what?

Intended Task

The candidates were expected to recall the process of fastening different kinds of wood after cutting. The candidates performed well in this question.

Question 2

Differentiate between Laminated Board and Clip Board used in paneling.

Intended Task

The candidates were expected to differentiate between the boards used in paneling. Many candidates performed averagely in this question.

Question 3

Why is the surface preparation of a product for polishing different from that of painting?

Intended Task

The candidates were expected to state reasons for the difference in surface preparation for polishing and painting. The candidates did not understand the question hence, they performed poorly.

Question 4

Why would you prefer a sprayed surface to a brushed finish?

Intended Task

The question required the candidates to state the advantage of a sprayed surface over a brushed finish. The candidates performed averagely in this question.

Question 5

What do we refer to as "Dry dust-free surface"?

Intended Task

The question required the candidates to explain a dry dust-free surface. Many candidates used wrong terminologies and performed poorly.

Question 6

Sketch the cross section of the arm of a full upholstered chair with synthetic foam.

Intended Task

This question required the candidates to sketch and test their drawing skills. The candidates performed fairly well as some of them had bad sketches.

Question 7

List two factors to be considered while preparing a cutting list for kitchen table that combines manufactured board in its construction.

Intended Task

The candidates were expected to recall factors to be considered while preparing a cutting list for a kitchen table that combines a manufactured board in its construction. The candidates performed fairly well in this question.

Question 8

List three upholstery traditional materials.

Intended Task

The question sought to test the candidates knowledge on upholstery traditional materials. All the candidates attempted this question and performed well.

Question 9

Identify the processes of constructing pattern with circular or curved contour.

Intended Task

The candidates were expected to recall the processes of constructing different patterns. The candidates performed fairly well.

Question 10

Explain the procedure in covering a single scatter full upholstery chart.

Intended Task

The question expected the candidates to explain the procedure in covering a single scatter full upholstery chair. The candidates performed poorly.

Question 11

- (a) Design a tall boy wardrobe with chest of drawers for a bachelor to be used in his bedroom apartment. The wardrobe should have a single and the chest should have three drawers. The cabinet should be made from 25mm lamboard.
- (b) To a scale of 1:10 and from the following sizes:
Height 152cm
Width 122cm
Depth 60cm

Draw the:

- (i) front elevation
- (ii) sectional side front drawers
- (iii) plan with top removed

Intended Task

The question required the candidates to design a tall boy wardrobe to specification. The candidates had bad designs and could not draw to scale. They performed poorly.

Question 12

Design a dressing stool for madam's dressing mirror. The stool should come from the following dimensions:

- (i) Height 40cm
- (ii) Length 50cm
- (iii) Width 30cm

The seat should be padded with rubber webby frame and synthetic foam, covered with brocade fabric. Draw the:

- (i) front elevation
- (ii) side sectional elevation
- (iii) top with fabric and foam removed. Draw to a scale of 1:5

Intended Task

The question required the candidates to design and draw a dressing stool to specification. Candidates who attempted this question performed poorly as they could not draw to scale.

Question 13

Explain the function of burlap sticted to sagless springs; illustrate your answer with a simple sketch.

Intended Task

The candidates were expected to explain with a sketch the function of burlap stinted to sagless springs. Many candidates did not attempt this question. Those who did performed poorly.

Question 14

- (a) Explain the major difference between Latex foam and Synthetic foam .
- (b) List five advantages of synthetic foam over other stuffing materials.

Intended Task

The question required the candidates to differentiate between Latex and Synthetic foam and recall only advantages of synthetic foam over other stuffing materials. The candidates attempted this question and performed averagely.

Question 15

Recommend how the fabric of upholstery should be maintained.

Intended Task

The candidates were expected to recommend how the fabric of an upholstery should be maintained. The candidates performed well in this question.

Candidates' Strengths

- ◆ The candidates had correct labeling.
- ◆ The candidates were familiar with theoretical aspects of furniture making.

Candidates' Weaknesses

- ❖ The candidates had poor drawings and sketches.
- ❖ The candidates could not answer practical based questions accurately.
- ❖ The candidates had poor grammatical expressions.

Suggestions for Improvement

- Candidates should be exposed to practical work in furniture making.
- Candidates should practice drawing and sketching.
- Candidates should constantly read text books, novels and listen to electronic media to improve on their grammatical expressions.
- Teachers of carpentry should teach candidates some calculations especially in scale conversion.

PLUMBING AND PIPE FITTING (261)

General Comments

The questions met the required standard. Candidates performed fairly compared to the previous year.

Detailed Comments on Each Question

Question 1

- (a) List six components of oxy-acetylene gas welding equipment.
- (b) Name four common fuels used for heating domestic water.

Intended Task

The question required candidates to list six components of oxy – acetylene gas welding equipment and name four common fuels used for heating domestic water. Those who attempted the question performed averagely.

Question 2

- (a) List four special protective clothing to be used when performing a welding operation in the workshop.
- (b) Name and state the composition of the following alloys:
 - (i) brass
 - (ii) bronze
 - (iii) gunmetal
 - (ii) white metal

Intended Task

The question required candidates to list four special protective clothing to be used when performing a welding operation in the workshop. They were expected to name and state the composition of the listed alloys. Candidates performed fairly.

Question 3

- (a) State two advantages and disadvantages of using electricity over other fuels.
- (b) Explain what is meant by ferrous and non-ferrous metals and give two examples of each metal.

Intended Task

The question required the candidates to state two advantages and disadvantages of using electricity over other fuels.

They were also to explain what is meant by ferrous and non-ferrous metals and give two examples of metal. Candidates who answered the question performed fairly.

Question 4

- (a) Explain purpose of a gas flue for gas appliance.
- (b) State four materials used for gas appliance.

Intended Task

The question required candidates to explain the purpose of a gas flue for gas appliance and state four materials used for gas appliance. Candidates performed fairly.

Question 5

Produce a sectional detailed drawing of a single-stack system for a two-storey building and name all its pipe works.

Intended Task

The question required candidates' ability to produce a sectional detailed drawing of a single-stack system for a two-storey building and name all its pipe works. Candidates performed fairly.

Question 6

- (a) Explain the following properties of metals:
 - i. durability
 - ii. conductivity
 - iii. tenacity
 - iv. elasticity
- (b) State four purposes of using flux for soldering.

Intended Task

The question required candidates' knowledge on the properties of metals and for them to state four purposes of using flux for soldering. Those who attempted the question performed fairly.

Question 7

- (a) With the aid of drawing, make a neat sketch of a bronze welding joint on a light gauge copper tube.

- (b) State two advantages and disadvantages of using fuel gas cutting with blow pipe over a cold chisel when making a hole on galvanized mild steel plate.

Intended Task

The question required candidates to make a neat sketch of a bronze welding joint on a light gauge copper tube with the aid of a diagram and also state two advantages and disadvantages of using fuel gas cutting with blow pipe over a cold chisel when making a hole on galvanized mild steel plate. Candidates performed fairly well.

Candidates' Strengths

- ◆ Candidates answered and listed the component of oxy-acetylene gas welding equipment correctly.
- ◆ Many of the candidates displayed knowledge on gas flue.
- ◆ Many of the candidates produced the sectional detail on single stack.
- ◆ Many of the candidates sketched the bronze welding joint on copper.
- ◆ Candidates answered questions on properties of metal correctly.

Candidates' Weaknesses

- ❖ Poor sketching skills.
- ❖ Poor interpretation of questions.

Suggestions for Improvement

- Candidates should improve on their computational skills.
- Candidates should improve their drawing and sketching skills.
- Candidates should be encouraged to improve on their grammatical expressions.
- Candidates should learn to study hard before their examinations.

CAPENTRY AND JOINERY (221)

General Comments

The questions covered the syllabus and the candidates' performance was generally poor.

Detailed Comments on Each Question

Question 1

- (a) Sketch to show the differences between an open eave and closed eave.
- (b) Sketch the joint between the wall plate and the rafter and identify all the members.

Intended Task

The candidates were required to sketch the difference between an open eave and closed eave. They were to sketch the plate between the wall plates and identify all the members. The candidates performed well in this question.

Question 2

- (a) Define Wood preservative and state three methods of preserving wood
- (b) Draw a steel scaffold and identify the following members:
 - i. standard.
 - ii. transom.
 - iii. ledger.
 - iv. brace.
 - v. decking.

Intended Task

The candidates were expected to explain wood preservative with three methods of preserving it and also, to draw steel scaffold with their identification. Many candidates did not understand the question, hence they performed poorly.

Question 3

With the aid of neat sketches, draw a timber gantry and show the following:

- (i) fanyerard.
- (ii) decking.
- (iii) standards.
- (iv) runner.

Intended Task

The candidates were required to neatly sketch out a timber gantry and show some of its parts. The candidates performed fairly well.

Question 4

- (a) With the aid of neat sketches, show the following timber defects:
- i. bowing.
 - ii. toristing.
 - iii. end chick.
 - iv. cupping.
 - v. heart shake.
- (b) Show by means of sketches, three methods of covering timber.

Intended Task

The candidates were expected to neatly sketch out timber defects and method of converting timber. All candidates attempted this question and performed well.

Question 5

- (a) List four tools under each of the following:
- i. geometrical tools.
 - ii. boring tools.
 - iii. holding and supporting tools.
- (b) Sketch a metal spoke share and identify the following parts:
- i. cutting iron.
 - ii. cap iron.
 - iii. stock.
 - iv. adjustable screws.

Intended Task

The candidates were required to list four tools for the list given and sketch out a metal spoke share and identify the above mentioned parts. The candidates performed averagely well.

Question 6

- (a) Differentiate between an angle bindle joint and a through mortise and tenon joint by means of sketches.
- (b) Sketch a suitable joint for a wire but thin rail.

Intended Task

The candidates were expected to recall and sketch between an angle bridle joint and a through mortise and a led joint for a wide but thin rail. Many candidates attempted the question and performed fairly well.

Candidates' Weakness

The candidates were unable to sketch the diagram.

Suggestion for Improvement

The teachers should teach the candidates how to sketch diagrams.

ADVANCED CARPENTRY AND JOINERY (226 – 1)

General Comments

The question covered the syllabus and the candidates' performance was generally good.

Detailed Comments on Each Question

Question 1

- (a) What is the meaning of “specification” in building and joinery work.
- (b) State Two advantages of making a workshop rod.

Intended Task

The candidates were expected to have knowledge in building and joinery work and also state two advantages of making a workshop rod. However, candidates performed averagely.

Question 2

- (a) Differentiate between full size working drawing and scale drawing.
- (b) Explain why labour is the most difficult item to estimate.

Intended Task

The pupils were required to differentiate scale drawing from full size working drawing. In addition, it was expected of the students to explain why labour is the most difficult item to estimate. The candidates performed averagely.

Question 3

Briefly write on the history of mass production from 1798 – 1832.

Intended Task

It was expected of the students to briefly write the history of mass production from 1798 – 1832. The candidates performed averagely.

Question 4

Using sketches explain in high class joinery any two of the following cross-sections:

- (i) litany desk
- (ii) Communion rail
- (iii) Lectern

Intended Task

The students were expected to explain high class joinery, litany desk, communion rail and lactern using sketches. The candidates performed well.

Question 5

State the principles of geometrical hand-railing.

Intended Task

The candidates were required to state the principles of geometrical hand-railing. The results showed that the candidates performed well.

Question 6

With the aid of sketches, show the constructional details of a bull's-eye window frame using a solid section.

Intended Task

It was expected of the students to show the constructional details of a bull's-eye window frame with the aid of sketches. However, the candidates performed well.

Question 7

Define the following structures using sketches:

- (i) Supply supported beam.
- (ii) Cantilever beam.

Intended Task

The candidates were expected to define supply supported beam and cantilever beam using sketches. Candidates performed well.

Question 8

Differentiate between cast in-situ and precast concrete structures.

Intended Task

The candidates were asked to differentiate between cast in-situ and precast concrete structures. They performed poorly.

Question 9

With illustrations show how a roof truss-spanning 12m is constructed using steel brackets and/or truss connectors.

Intended Task

The candidates were requested to show how a roof truss-spanning 12m is constructed using steel brackets with the aid of illustrations. The candidates performed well.

Question 10

Differentiate between a folding door and sliding door.

Intended Task

It was expected that the candidates would differentiate between a folding door and sliding door. The candidates performed well.

Question 11

- (a) Give five basic symbols of joinery and other building components.
- (b) Differentiate between cubing and costing.

Intended Task

The candidates were expected to give five basic symbols of joinery and differentiate between cubing and costing. The candidates performed well.

Question 12

- (a) Define the following terms as they relate to mass production:
 - i. jig.
 - ii. template.
 - iii. dies.
- (b) Itemize the basic principles of mass production under the following headings:
 - i. research and development.
 - ii. production planning.
 - iii. quality control.
 - iv. marketing and distribution.

Intended Task

The candidates were expected to define Jig, template, dies and itemize the basic principles of mass production under Research and development, production planning, quality control, marketing and distribution. The candidates performed well.

Question 13

Neatly sketch a template for use in marking out handrails and capping.

Intended Task

The candidates were asked to sketch a template for use in making out handrails and capping. The candidates performed well.

Question 14

For the beam shown below, determine the bending moment and hence draw the bending moment diagram.

Intended Task

The candidates were expected to determine the bending moment and draw the bending moment diagram from the beam above. The candidates performed well.

Question 15

- (a) With the aid of sketch, show how the plan of an octagonal formwork for a dome is erected.
- (b) Differentiate between easing and striking.

Intended Task

The candidates were asked to differentiate between easing and striking. They were expected to show how the plan of an octagonal formwork for a dome is erected using the aid of sketch. They performed well.

Question 16

- (a) Draw the section through a track and roller used on a sliding door to show:
- i. the track
 - ii. hangers
 - iii. rollers
 - iv. brackets
- (b) What is the purpose of roof light and roof ventilators .

Intended Task

The candidates were expected to define roof light, roof ventilators and draw the section through a track and roller showing the track, hangers, rollers and brackets. The candidates performed well.

Candidates' Strengths

- ◆ Most candidates attempted No. 1 – 3 fairly.
- ◆ Most candidates attempted No. 8 correctly.
- ◆ Most candidates attempted No. 6.
- ◆ Good computational skills.

Suggestions for Improvement

- More emphasis on the teaching of drawing.
- More awareness be made known to the public on the nature of Advanced level examination for candidates to fully prepare for it.
- Intensive preparation be made on the part of the candidates to update their knowledge.

PAINTING AND DECORATING (251-1)

General Comments

The questions covered the syllabus and the candidates' performance was generally good.

Detailed Comments on Each Question

Question 1

Paper hangers tools are essential implements for the execution of wall paper hanging:

- (a) List five paper hanger tools and state the operation for which each is used.
- (b) Explain briefly how to take care of each of the tools in (a) above after use.

Intended Task

The candidates were expected to list five paper hanger tools and state the operation for which each is used. They were also to explain briefly how to take care of each of the tools. They were able to answer the question. Therefore, they performed well.

Question 2

- (a) Define and distinguish between plain painting and broken colour effect.
- (b) List five tools each used for carrying out the two painting operations above.

Intended Task

The candidates were asked to define and distinguish between plain painting and broken colour effect. It is also expected of them to list five tools used for carrying out the two painting operations. They answered the questions correctly. Hence, they performed well.

Question 3

- (a) Draw a suction feed spray gun with its cup and label five parts.
- (b) Describe briefly the functions of the labeled parts.

Intended Task

The candidates were asked to draw a suction feed spray gun with its cup and label five parts. They were also asked to describe the functions of the labeled parts. The candidates answered the question correctly, thereby, performing well.

Question 4

- (a) Describe briefly the use of the following tools in the surface preparation for sign and design:
- i. Blowlamp
 - ii. Dipper
 - iii. Sable brush
 - iv. Matil stick
- (b) Define the following terms as used in sign writing work:
- i. Valley
 - ii. Word spacing

Intended Task

The candidates were requested to describe briefly the use of blowlamp, dipper, sable brush and matil stick in the surface preparation for sign and design. They were also to define valley and word spacing. They responded to the questions correctly and so, performed well.

Question 5

Define the following colour terms and give example of each:

- (i) complementary
- (ii) discordant
- (iii) neutral
- (iv) harmonious

Intended Task

The candidates were asked to define complementary discordant, neutral, harmonious and give example of each. They all answered correctly and so performed well.

Question 6

Scaffolds are temporary working platform for various building operations

- (a) Distinguish by explanation the method of erecting independent and dependent scaffold.
- (b) List five important parts of a scaffold.

Intended Task

The candidates were asked to distinguish by explanation the method of erecting independent and dependent scaffold. They were also asked to list five important parts of scaffold. They responded to the question correctly. Hence, they performed well.

Question 7

Describe briefly the following in the glass glazing work:

- (i) tolerance
- (ii) bed putty
- (iii) face putty
- (iv) glazing sprig

Intended Task

The candidates were expected to describe briefly tolerance, bed putty, face putty and glazing sprig. They answered the questions correctly. Hence, they performed well.

Candidates' Strengths

- ◆ Candidates answered the question on the listed tools and their uses correctly.
- ◆ Few of the candidates displayed skill by distinguishing between plain painting and broken colour effect.
- ◆ Many of the candidates displayed proficiency in drawing section feed gun with its cup placed at the bottom and the parts listed appropriately.
- ◆ Candidates answered the questions correctly by explaining the use of blowlamp, sable brush.
- ◆ Candidates were able to recall some colour terms like complimentary, discordant, neutral and harmonious, demonstrating the understanding of mussel colour scheme.
- ◆ Some of the candidates were able to exhibit knowledge of construction work by distinguishing between independent and dependent scaffold and listed important parts of the scaffold.
- ◆ Candidates were able to demonstrate knowledge of glazing work, a module in painting trade by answering the questions correctly, giving correct description of tolerance in glass glazing work, bed putty, face putty and glazing sprigs.

Candidates' Weaknesses

- ❖ Poor grammatical expressions.
- ❖ Lack of drawing skills.

Suggestion for Improvement

- More emphasis on drawing skills for the candidates.

ADVANCED PAINTING AND DECORATING (256-1)

General Comments

The questions covered the syllabus and the candidates' performance was generally poor.

Detailed Comments on Each Question

Question 1

Explain the use of "Darkroom" in the mixing of Bichromate and Emulsion for the filming of art work.

Intended Task

The candidates were expected to explain the use of "Darkroom" in the mixing of Bichromate and Emulsion for the filming of art work. The candidates were unable to answer the question. Hence, they performed poorly.

Question 2

Sketch neatly with the same measurement, the positive and negative of any art work meant for transfer purpose on a coated stretched mesh frame.

Intended Task

The candidates were required to sketch the positive and negative of any art work meant for transfer purpose on a coated stretched mesh frame. They performed poorly.

Question 3

- (a) Define the term 'Registration' in screen printing.
- (b) Why is it used in screen printing work?

Intended Task

The candidates were asked to define 'Registration in screen printing and state why it is used in screen printing work. They failed to answer the question. Hence, they performed poorly.

Question 4

State the use of the following materials in graining work:

- (i) Drier
- (ii) Drying oil
- (iii) Pigment
- (iv) Solvent

Intended Task

The candidates were requested to state the use of drier, drying oil, pigment and solvent. They could not respond to the question. Hence, they performed poorly.

Question 5

State the reasons why a wood containing more than 20% moisture can not be used for marble work.

Intended Task

The candidates were required to state the reasons why wood containing more than 20% moisture cannot be used for marble work. They could not respond to the question correctly. Hence, they performed poorly.

Question 6

Describe with the aid of neat lettering how gilding work on glass should be constructed .

Intended Task

The candidates were asked to describe with neat lettering, how gilding work on glass should be constructed. They failed to answer the question correctly. They therefore performed poorly.

Question 7

- (a) Name the type of plaster used in relief texture work.
- (b) State the condition for which the material in (a) above can be coated with paint.

Intended Task

The candidates were expected to name the type of plaster used in relief texture work and state the condition for which the material can be coated with plant. They responded incorrectly. Hence, they performed poorly.

Question 8

List two important advantages for the use of suspended scaffold in a large busy hall.

Intended Task

The candidates were asked to list two advantages for the use of suspended scaffold in a large busy hall. They failed to answer the question correctly. They therefore performed poorly.

Question 9

Explain the reasons behind the “cutting top and bottom” of wall paper after hanging.

Intended Task

The candidates were requested to explain the reasons behind the “cutting top and bottom” of wall paper after hanging. They candidates performed poorly.

Question 10

Explain how the pressure delivered from the compressor to the spray gun is measured.

Intended Task

The candidates were asked to explain how the pressure delivered from the compressor to spray gun is measured. They candidates performed poorly.

Question 11

- (a) Sketch and shade any desirable design and describe in details, the procedure of transferring the design on to a coated mesh frame.
- (b) Explain the care for the same printing mesh which need to be re-used in the following day.

Intended Task

The candidates were asked to sketch any desirable design and describe in details, the procedure of transferring the design on to a coated mesh frame. They failed to answer the question correctly. Hence, they performed poorly.

Question 12

List the procedures that will be involved in the production of the imitation of an oak grain, mentioning the tools and materials that will be used.

Intended Task

The candidates were requested to list the procedures that will be involved in the production of an oak grain, mentioning the tools and materials that will be used. They could not answer the question. They therefore, performed poorly.

Question 13

- (a) What is marbling?
- (b) List and describe the use of five tools used in marble work .
- (c) State sequentially the preparation of a new hardwood surface for the production of marble imitation work.

Intended Task

The candidates were expected to define marbling, list and describe the use of five tools in marble work. The candidates were also asked to state the preparation of a new hard wood surface for the production of marble. They failed to respond to the question correctly. They performed poorly.

Question 14

- (a) Explain the functions of “threaded white yarn” when used with plaster of paris in the formation of design in relief texture work.
- (b) State the properties of the materials in 14(a) above when used together compared with other fibre materials.

Intended Task

The candidates were required to explain the functions of “threaded white yarn” when used with plaster of paris in the formation of design in relief texture work. In addition, it was also expected of the candidates to state the properties of threaded white yarn compared with other fibre materials. They failed to answer the question correctly. Thus, they performed poorly.

Question 15

- (a) Enumerate five disadvantages of low pressure supplied from the compressor to the spray gun during use.
- (b) Explain the effects of the large diameter hose in the supply of pressured air to the spray gun during use.

Intended Task

The candidates were asked to enumerate five disadvantages of low pressure supplied from compressor to the spray gun during use. It was also expected of the candidates to explain the effects of the large diameter hose in the supply of pressured air to the spray gun during use. They could not answer the question correctly. Hence, they performed poorly.

Candidates' Weaknesses

- ❖ Poor grammatical expressions.
- ❖ Poor computational skills.
- ❖ Lack of good understanding of questions.
- ❖ Poor work arrangement leading to confusion and repetition of questions.

Suggestions for Improvement

- Emphasis should be laid on teaching of English Language.
- Candidates should be advised to purchase relevant textbooks.
- Candidates should be exposed to tool/material.
- Practical learning period should be increased to meet the contact hours.
- Candidates should be in training institutions to gain the required experience.
- The importance of sketching should be emphasized.

ADVANCED PLUMBING AND PIPE FITTING (266-1)

General Comments

The questions met the required standard and candidates performed fairly compared to the previous year.

Detailed Comments on Each Question

Question 1

Explain the following:

- (a) Five hydrant Valve.
- (b) Sluice valve.

Intended Task

Candidates were required to explain five hydrant valves and sluice valve. Candidates performed fairly.

Question 2

- (a) List two causes of airlocks in hot water system.
- (b) Explain how faults in (a) could be remedied.

Intended Task

Candidates were required to list two causes of air locks in hot water system and explain how faults in (a) could be remedied. Candidates performed fairly well.

Question 3

State two possible causes of lack of fusion when carrying out gas welding of mild steel plate.

Intended Task

Candidates were required to state two possible causes of lack of fusion when carrying out gas welding of mild steel plate. Candidates performed fairly well.

Question 4

Mention two materials used for the thermal insulation of hot water system in a building.

Intended Task

Candidates were expected to mention two materials used for the thermal insulation of hot water system in a building. Candidates performed fairly.

Question 5

In sequential form, list out four procedures for the installation of a water closet.

Intended Task

Candidates were expected in sequential form, to list four procedures for the installation of water closet. Candidates performed fairly.

Question 6

List four sources of heat energy for operation of clarifier.

Intended Task

Candidates were expected to list four sources of heat energy for operation of clarifier. Candidates performed fairly.

Question 7

Differentiate between electric arc welding and gas welding equipment.

Intended Task

Candidates were required to differentiate between electric arc welding and gas welding equipment. Candidates performed fairly.

Question 8

Distinguish between auto-gaseous and flanged joint used in installation of hot and cold water for domestic and industrial work.

Intended Task

Candidates were expected to distinguish between the autogaseous and flanged joint used in installation of hot and cold water for domestic and industrial work. Candidates performed fairly.

Question 9

Calculate the intensity of pressure on a tap fixed 3m below water level in a cold feed cistern.

Intended Task

Candidates were required to calculate the intensity of pressure on a tap fixed 3m below the water level in a cold feed cistern. Candidates performed fairly.

Question 10

Illustrate with sketch, two methods of connecting flush pipe to a w.c. pan.

Intended Task

Candidates were expected to illustrate with sketch, two methods of connecting flush pipe to a w.c. pan. Candidates performed fairly.

Question 11

- (a) Define the following drainage terms:
- i. Drain
 - ii. Sever
 - iii. Sewage
 - iv. Sewerage
 - v. Cleaning eye
- (b) Make a sketch of a duck foot bend.

Intended Task

Candidates were expected to define some drainage terms which are drain, sewer, sewage, sewerage, cleaning eye and make a sketch of a duck foot bend. Candidates performed fairly well.

Question 12

- (a) State the causes of reversed circulation in a domestic hot water installation.
- (b) Mention the remedies for (a) above.
- (c) With the aid of a neat sketch, illustrate instantaneous water heater.

Intended Task

Candidates were expected to state the causes of reversed circulation in a domestic hot water installation and mention the remedies for (a) above. With the aid of a neat sketch, they were to illustrate instantaneous water heater. Those who attempted the questions performed fairly.

Question 13

- (a) Explain the method of cutting a mild steel plate with oxy-acetylene equipment.
- (b) State five safety precautions to be observed when using oxy-acetylene welding equipment.

- (c) Explain the function of a two stage regulator.

Intended Task

Candidates were expected to explain the method of cutting a mild steel plate with oxy-acetylene equipment and state five safety precautions to be observed when using oxy-acetylene welding equipment. They were also to explain the function of a two stage regulator. Candidates performed fairly.

Question 14

- (a) Explain in sequential order the stage of water treatment.
(b) List three causes of water pollution.

Intended Task

Candidates were expected to explain in sequential order the stages of water treatment and list three causes of water pollution. Candidates performed fairly.

Question 15

- (a) Explain the method of testing drain.
(b) Sketch one of the method in (a) above.

Intended Task

Candidates were required to explain the method of testing drain and sketch one of the method. Candidates performed fairly well.

Question 16

With the aid of a sketch, explain the following gas welding techniques:

- (i) Rightward technique
(ii) Left ward technique

Intended Task

Candidates were expected to explain the gas welding techniques in Rightward technique and left ward technique with the aid of a sketch. Candidates performed fairly.

Question 17

- (a) Make a neat sketch of combined cylinder and tank system of hot water supply
(b) State the purpose of designing the system mention in (a) above.

Intended Task

Candidates were required to make a neat sketch of combined cylinders and tank system of hot water supply and state the purpose of designing the system mention in (a) above. Candidates performed fairly well.

Candidates' Strengths

- ◆ Many candidates understood the value very well.
- ◆ Many candidates got the practical demonstrations correctly.
- ◆ Many candidates got the definitions correctly.

Candidates' Weaknesses

- ❖ Poor drawing and sketching skills.
- ❖ Poor computational skills.

Suggestions for Improvement

- They should improve their understanding of questions so as to avoid misinterpretation of questions.
- Candidates should be encouraged to practice drawing and sketching skills.
- Candidates should study hard to cope with the standard of questions.

DRAUGHTSMANSHIP CRAFT PRACTICE (271 – 1)

General Comments

The question covered the syllabus and the candidates' performance was poor.

Detailed Comments on Each Question

Question 1

Write short notes on the following Architectural works:

- i. cement screed
- ii. oversite concrete
- iii. eave
- iv. king post
- v. setting out

Intended Task

The candidates were required to write short notes on the above Architectural works. Candidates performed poorly.

Question 2

- (a) Explain the term "Perspective" of three – dimension drawing.
- (b) Briefly explain these symbols.

Intended Task

Candidates were expected to explain the term “perspective in a three dimensional drawing as well as explaining the given symbols. Candidates performed poorly.

Question 3

- (a) State the functions and importance of a door and a window.
- (b) With the aid of a well drawn diagram, describe a flush door.

Intended Task

Candidates were required to state the functions and importance of a door and a window and to describe a flush door with a well drawn diagram. Candidates were unable to sketch a flush door. However, candidates performed fairly.

Question 4

- (a) Explain the term rendering in design drawings.
- (b) Define monochromatic drawings.
- (c) Enumerate the life elements of three-dimensional drawing.

Intended Task

The question tested candidates’ knowledge on design drawings and monochromatic drawings. Candidates misinterpreted this question. Hence, they performed poorly.

Question 5

- (a) Explain how a pinhole camera works.
- (b) List five equipment required for photography.

Intended Task

The question tested candidates’ knowledge of pinhole camera. Candidates failed to explain pinhole camera but few were able to list the equipment required for photography. However candidates performed averagely.

Candidates’ Weaknesses

- ❖ Poor grammatical expressions.
- ❖ Poor computational skills.

Suggestion for Improvement

- Textbooks should be recommended for candidates.

PRINTING CRAFT PRACTICE (361-1)

General Comments

The questions were well structured and covered all areas of the syllabus. The candidates' performance was fairly.

Detailed Comments on Each Question

Question 1

- (a) Kazeem has just been employed in a printing industry in Lagos, what is the name of the letter he received and its contents?
- (b) Briefly explain the two types of paper ware house in a printing industry.
- (c) What is the main function of a clinic in a printing industry?

Intended Task

The candidates were expected to be knowledgeable about the printing industry in its preliminary stage. Many candidates attempted the question but had grammatical difficulty in explanation. Some candidates could not interpret the "c" part of the question. The candidates performed fairly well.

Question 2

With the use of diagrams, explain typography emphasizing the difference between serif and san serif.

Intended Task

The question required the candidates to draw a diagram explaining typography showing the difference between serif (hanging) and san serif (No hanging). Many candidates did not attempt this question as a result of lack of understanding. The candidates who attempted this question performed averagely.

Question 3

- (a) Mention two materials used to level already set types.
- (b) Explain the position of the type bed on a cylinder machine and a platen.

Intended Task

The candidates were expected to mention two materials used to level already set types and explain the position of the type bed on a cylinder machine and a platen. The candidates did well in the part “a” but the part “b” was difficult as the candidates confused cylinder letter press with offset lithography. The candidates performed fairly well.

Question 4

- (a) Mention the three classified types of light sensitive films used for camera reproduction and the different light they are sensitive to.
- (b) In the camera, what is affected by varying the distance between the lens and copy board?

Intended Task

In part “a” of the question, the candidates were expected to state the three classified types of light films used of camera reproduction and the different light they are sensitive to as well as what is affected by varying distance in the camera. The candidates could not give correct answers to part “a” and did not understand the part “b”. Hence, they performed poorly.

Question 5

- (a) What are presensitized plates?
- (b) Explain plate graining and give two reasons why plates are grained.

Intended Task

The candidates were expected to state what presensitized plates are, explain plate graining and reasons for plate graining. Many candidates did not answer part “a” of the question but answered part “b”. The candidates performed fairly well in this question.

Question 6

- (a) Which of the printing process has the advantage of last minute correction?
- (b) Mention two troubles encountered during printing in offset lithography.

Intended Task

The candidates were expected to state the printing process which has the advantage of last minute correction and troubles encountered during printing in offset lithography. The candidates performed poorly in this question because they had the problem of comprehension.

Question 7

- (a) How many types can a printed book be trimmed and what is the correct trimming equipment?

(b) Briefly explain with diagram the difference between saddle stitch and side stitch.

Intended Task

The question sought to test candidates' knowledge of the application of trimming a printed book and the correct trimming equipments and draw explanatory diagrams showing the difference between saddle stitch and side stitch. Many candidates attempted this question. They had good drawings but could not label them. The candidates performed well in this question.

Candidates' Strengths

- ◆ They candidates had basic grasp of some concepts.
- ◆ The candidate had good diagrams.

Candidates' Weaknesses

- ❖ The candidates lacked the knowledge of proper usage and understanding of the English Language.
- ❖ Candidates did not take their studies seriously which was evident from their responses to questions.
- ❖ The candidates may not have been exposed to practical printing operations. Hence, their inability to label correctly.

Suggestions for Improvement

- Technical teachers should endeavour to cover the syllabus before the examination.
- Technical Instructors should attend seminars to improve their teaching techniques.
- Candidates should improve their grammatical expressions.
- Candidates should take their studies seriously.

ADVANCED PRINTING CRAFT (366-1)

General Comments

The questions were well structured and covered all areas of the syllabus. Candidates' performance was fair.

Detailed Comments on Each Question

SECTION A

Question 1

Mention five properties of paper.

Intended Task

The candidates were expected to state some properties of paper. Many candidates avoided this question as it was not practical in nature. The few candidates who answered the question performed well.

Question 2

What do you understand by "grain direction" of paper?

Intended Task

This question sought to test the candidates' knowledge of paper manufacturing. The candidates who attempted this question performed fairly.

Question 3

What are the raw materials of printing ink?

Intended Task

The candidates were expected to state the raw materials of printing ink. Though many candidates avoided this question, the candidates who attempted it performed well.

Question 4

List five metals used in the printing industry.

Intended Task

The candidates were expected to recall the metals used in the printing industry. Candidates who answered this question performed well.

Question 5

Mention the three areas associated with “half-tone” originals.

Intended Task

The candidates were expected to recall the areas associated with half-tone originals. The candidates who attempted this question performed well.

Question 6

Mention two types of films that are used for colour reproduction .

Intended Task

The candidates were expected to state the type of films used for colour reproduction. Many candidates who attempted this question performed well.

Question 7

List five major advantages of proofing a job before final printing.

Intended Task

The candidates were expected to list the advantages of proofing a job before final printing. The candidates who attempted this question performed poorly because they did not understand the question.

Question 8

What do you understand by step and repeat?

Intended Task

The question tested the candidates’ understanding of printing concepts such as step and repeat. The candidates performed poorly in this question as it is practical-based and only candidates who have worked in a multipurpose printing firm could understand the question .

Question 9

List four special keys found on a monotype keyboard.

Intended Task

The candidates were required to recall four special keys found on a monotype keyboard. The candidates who attempted this question performed well.

Question 10

State five equipment/materials needed for film assembling.

Intended Task

The candidates were expected to state materials needed for film assembling. Many candidates avoided this question and the few candidates who attempted this question performed poorly.

SECTION B

Question 1

- (a) State five maintenance operations that could help and aid the effective performance of our press or machine.
- (b) List five major parts of a letterpress machine. Mention five operations that could be performed by the letterpress machine.

Intended Task

The question required the candidates to recall maintenance operations that aid the effective performance of a press machine, the major parts of a letter press machine and operations performed by a letter press machine.

The candidates did not understand the question, hence performed poorly.

Question 2

- (a) Mention five specific duties of a supervisor in the lithographic offset machine room.
- (b) State five advantages of lithographic process of printing over other processes.
- (c) Identify five major operations that are performed on a lithographic offset press during press operation.

Intended Task

The candidates were expected to know the specific duties of a supervisor in the lithographic offset machine room, advantages of the lithographic process over other printing processes and the operations performed on a lithographic press during press operation. The candidates attempted the question and performed fairly.

Question 3

- (a) List five each of the materials, tools and equipment used in binding.
- (b) Mention ten finishing operations that could be performed on a printed work.

Intended Task

The question tested the candidates' knowledge of materials, tools and equipment used in binding as well as the finishing operations performed on a printed work. The candidates performed fairly in this question.

SECTION C

Question 1

Define Paper. Explain the functions of the following terms used in paper making:

- (i) loading materials/mineral filters.
- (ii) sizing agents.
- (iii) dye-stuff/colouring agents.

Intended Task

The question required the candidates' knowledge of paper and the functions of some terms on paper making. The candidates performed poorly in this question.

Question 2

How many types of pigment do we have? List them and briefly explain the importance of these materials in ink manufacturing . Mention the four process colours we have.

Intended Task

The candidates were expected to state, list and explain the importance of pigment materials in ink manufacturing and mention the four process colours. The candidates performed poorly in this question as only a few candidates were able to attempt it.

Question 3

With a well drawn diagram of a two page imposition scheme, identify the different margin of a page.

Intended Task

The candidates were expected to draw the diagram of a two page imposition scheme and identify the different margin of a page. The candidates performed poorly as they did not understand the question.

Candidates' Weakness

- ❖ Inability to interpret the requirements of each question

Suggestions for Improvement

- Examiners/item generators should strictly follow the table of specification in setting questions.
- The candidates should improve on their understanding of English language
- Advanced candidates should be exposed to practical work before sitting for the examination.
- Examiners should avoid ambiguity when setting questions.
- Periodic seminars should be organized for item generators to keep them abreast of the examination requirements.
- Item moderation should be introduced to check the standard of the questions.

ADVANCED BUSINESS/CONSTRUCTION MANAGEMENT (A00)

General Comments

The questions covered the syllabus and the candidates' performance was generally good.

Detailed Comments on Each Question

Question 1

Define span of control

Intended Task

The candidates were expected to recall the definition of span of control. The candidates performed fairly well on this question.

Question 2

Differentiate between intrinsic and extrinsic motivation.

Intended Task

The candidates were expected to differentiate between intrinsic and extrinsic motivation. The candidates did not answer it in a tabular form as a result, they performed poorly.

Question 3

Explain job enrichment.

Intended Task

The candidates were required to explain job enrichment. The candidates performed fairly well on this question.

Question 4

List two types of contract.

Intended Task

The candidates were expected to list two types of contract. Many candidates answered this question correctly.

Question 5

State three conditions that must be met for MBO to work.

Intended Task

The candidates were expected to state the conditions for MBO to work. The candidates performed poorly in this question as they could not state the conditions in order of importance, objective and goal.

Question 6

What is direct Cost?

Intended Task

The candidates were required to recall some facts regarding direct cost. Many candidate answered this question correctly.

Question 7

Explain Net Present Value (NPV).

Intended Task

The candidates were expected to explain the term net present value. The candidates performed fairly well on this question.

Question 8

What is material requisition card?

Intended Task

The candidates were expected to recall and explain what they understood by “material requisition card”. Many candidates answered this question correctly.

Question 9

State the processes of communication.

Intended Task

The candidates were required to state the processes of communication. The candidates answered this question correctly.

Question 10

State three disadvantages of locating a factory in a particular area.

Intended Task

The candidates were expected to state three disadvantages of locating a factory in a particular area. The candidates could not state the three disadvantages correctly. So they performed poorly.

Question 11

List and explain five departments in any organization.

Intended Task

The candidates were expected to list and explain five departments in any organization. The candidates listed and explained the five organizations but some listed personnel and administration department separately. The candidates performed fairly well in this question.

Question 12

State and discuss common methods of determining price.

Intended Task

The candidates were required to state and discuss common methods of determining price. The candidates did not state and discuss some of the common methods of determining price as a result, they performed poorly.

Question 13

- a. Discuss “fiffo” method of stock valuation and its advantages.
- b. What is Economic Order Quantity?

Intended Task

The candidates were expected to discuss ‘fiffo’ method of stock valuation and its advantages. They performed poorly.

They were also asked to explain the meaning of “Economic Order Quality”. The candidates performed fairly well in this question.

Question 14

Discuss Final Accounts and Balance Sheet and state the importance of each of them to a business organization.

Intended Task

The candidates were expected to discuss the final account and balance sheet and state the importance of each of them. The candidates could not discuss and state the final account, balance sheet and their importance. As a result, they performed poorly.

Question 15

Discuss importance of Trade Union in an organization.

Intended Task

The candidates were expected to discuss the importance of trade union in an organization. The candidates answered this question fairly well.

Question 16

List and explain five functions of management in an organization.

Intended Task

The candidates were expected to list and explain five functions of management in an organization. They could list and explain five functions of an organization. Hence they performed fairly well.

Question 17

State and explain problems involved in performing method study and work measurement.

Intended Task

The candidates were expected to state and explain problems involved in performing method study and work measurement. The candidates could not answer the question well because, the question was not understood. As a result they performed poorly.

Question 18

- (a) What is planning in relation to building construction?
- (b) Identify and discuss pre-tender activities.

Intended Task

The candidates were expected to recall planning and its relationship to building contents and then list and discuss pre-tender activities. The candidates performed fairly well in this question.

Question 19

Discuss the effects of tendering arrangement on the contents of specification.

Intended Task

The candidates were expected to discuss the effect of tendering arrangement on the contents of specification. Few candidates answered this question and performed fairly well.

Candidates' Strengths

- ❖ Candidates answered the question on span of control correctly.
- ❖ Many of the candidates did not use a conjunction word.
- ❖ Candidates explained job enrichment correctly.

Candidates' Weaknesses

- Poor grammatical expressions in questions.
- Poor in computational skills.

Suggestions for Improvement

- ◆ Candidate should take English classes seriously to improve into their grammatical expressions.
- ◆ Candidate should improve on their computational skill.

ADVANCED BUILDING DRAWING (A05)

SECTION A

The question covered the syllabus and candidates' performance was fair compared to the previous year.

Detailed Comments on Each Question

Question 1

Explain the difference between a small building drawn to a scale of 50:1 and another drawn to scale 1:100.

Intended Task

The question required candidates to differentiate between a small building drawn to a scale of 50:1 and another drawn to scale 1:100. Many of the candidates who answered the question performed fairly.

Question 2

What factors determine the correct size of septic tank and the length of tile drainage?

Intended Task

The question required candidates' knowledge of factors that determine the correct size of septic tank and the length of the tile drainage. Those who attempted the question performed poorly.

Question 3

What do you understand by the term schedule in building drawing?

Intended Task

The question required candidates' ability to recall some facts about schedule in building drawing. Few candidates attempted the question and they performed fairly.

Question 4

Draw section through a reinforced concrete floor to reflect the following details:

- (i) the location and spacing of main reinforcement
- (ii) the location and spacing of distribution rods.
- (iii) the construction detail of the floor into the walls.
- (iv) the depth of the concrete cover.

Intended Task

The question required candidates to recall some terms on how to reinforce concrete floor to reflect the location and spacing main reinforcement as well as spacing of distribution rods. All the candidates who attempted the question performed fairly.

Question 5

State four important information that must be indicated on a site plan.

Intended Task

The question required candidates to state four important information that must be indicated on a site plan. Those who attempted the question performed poorly.

Question 6

State names of the following electrical symbol.

Intended Task

The question required candidates' ability to identify some electrical symbols. All the candidates who attempted the question performed averagely.

Question 7

State the full meaning of the following abbreviations in relation to structural details.

(i) T (ii) B (iii) Y (iv) R or M

Intended Task

The question required candidates' ability to state the full meaning of some terms in relation to structural detail. Those who attempted the question performed poorly.

Question 8

Illustrate four general structural elements commonly used in a storey building.

Intended Task

The question required candidates' knowledge of general structural elements commonly used in a storey building. Few candidates attempted the question and they performed fairly.

Question 9

State how 13 pieces of 11mm mild steel round bars placed at 300mm centres and marked No. 2 in bottom of a slab should be indicated.

Intended Task

The question required candidates' knowledge of how 13 pieces of 11mm mild steel round bars placed at 300mm centres and marked No. 2 in bottom of a slab should be indicated. All the candidates who attempted the question performed averagely.

Question 10

What is the purpose of steel reinforcement in a concrete floor slab?

Intended Task

The question required candidates to recall the purpose of steel reinforcement in a concrete floor slab. Many of the candidates who answered the question performed fairly.

SECTION B

The diagram shown below represents the floor plan of a four bedroom flat. Study the specifications and answer the questions that follow:

All dimensions are in millimeter

Assume unsuitable dimensions:

- (a) Copy the plan on a scale of 1:100 showing all walls with 12mm mortar rendering on both sides
- (b) Draw to a scale of 1:50. The detailed sectional elevation on S-S from foundation to the roof

(c) Draw to a scale of 1:10 showing:

- (i) a water closet fixed to glazed ceramic floor and wall tiles.
- (ii) connecting of w.c. to inspection chamber.

FOUNDATION 450 x 150 concrete strip laid at a depth of 1000 below ground level

WALLS All walls are 100 thick solid sand Crete blocks with 12 mortar rendering on both sides. The front and back external walls have preventing or parapet walls projecting above the roof.

FLOORS 150 hardcore
150 thick concrete floor slab
25 cement/sand screed carry 300 x 300 ceramic tiles
Height from ground level to floor level 3900mm.

LINTEL: 150 X 150 REINFORCED CONCRETE

Roof: Gable with the following details
corrugated iron roofing sheet
rafter 50 x 150 hardwood
strut 50 x 150 hardwood
tie beam 50 x 150 hardwood
king post 50 x 150 hardwood
purl in 50 x 75 hardwood
ceiling joist 50 x 150 hardwood
cement asbestos ceiling
wall plate 75 x 100 hardwood

Water closet: use any model

Waste water pipe: \varnothing 100 PVC

Inspection chamber: 100 thick block work with cement mortar benching and 50 thick reinforced concrete cover.

DOORS AND WINDOW SCHEDULE

MRK	QUANTITY	SIZE	TYPE
W1	1	2250 x 1200	LOUVRE
W2	13	1800 x 1200	”
W3	4	1200 x 1200	”
W4	6	600 x 600	”
D1	1	3010 x 2100	ROLLING DOOR
D2	21	900 x 2100	METAL DOOR
D3	2	750 x 2100	METAL DOOR

Intended Task

The question required candidates to study the floor plan of a four bedroom flat and to copy it on a scale of 1:100 and also to draw to a scale of 1:50 and 1:10 showing a water closet to glazed ceramic floor, wall tiles and connecting of w.c. to inspection chamber.

Candidates' Weaknesses

- ❖ Inability to make good sketches.
- ❖ Lack of in-depth knowledge of the trade.
- ❖ Lack of understanding of the questions.

Suggestions for Improvement

- Candidates should be encouraged to practice sketching on a regular basis.
- Emphasis should be laid on the teaching of English language as it will give the candidates good understanding of the questions.