EXAMINERS GENERAL COMMENTS

BREACH OF EXAMINATION INSTRUCTIONS

IN SPITE OF THE EXAMINERS' GENERAL COMMENT IN PREVIOUS EDITIONS OF THE "INSIGHT", IT WAS OBSERVED THAT A NUMBER OF CANDIDATES HAVE CONTINUED TO BREACH EXAMINATION INSTRUCTIONS AS STATED BELOW:

A) BY ATTEMPTING MORE QUESTIONS THAN ALLOWED IN EACH PAPER; AND

B) BY ATTEMPTING MORE QUESTIONS THAN ALLOWED IN EACH SECTION.

INADEQUATE COVERAGE OF THE SYLLABUS

IT HAS BECOME MANIFEST THAT MANY CANDIDATES DO NOT COVER THE SYLLABUS IN DEPTH BEFORE PRESENTING THEMSELVES FOR THE EXAMINATION. CANDIDATES ARE THEREFORE ADVISED TO BE ADEQUATELY CONVERSANT WITH ALL ASPECTS OF THE SYLLABUS.

FOREWORD

This issue of **INSIGHT** is published principally, in response to a growing demand, as an aid to:

(i) Candidates preparing to write future examinations of the Institute of Chartered Accountants of Nigeria (ICAN) at an equivalent level;

(ii) Unsuccessful candidates in the identification of those areas in which they lost marks and need to improve their knowledge and presentation;

(iii) Lecturers and students interested in acquisition of knowledge in the relevant subject contained therein; and

(iv) The profession in improving pre-examination and screening processes, and so the professional performance.

The answers provided in this book do not exhaust all possible alternative approaches to solving the questions. Efforts have been made to use methods, which will save much of the scarce examination time.

It is hoped that the suggested answers will prove to be of tremendous assistance to students and those who assist them in their preparations for the Institute's Examinations.

CONTENTS **PAGE**

PRINCIPLES AND PRACTICE OF FINANCIAL ACCOUNTING **1- 24**

PUBLIC SECTOR ACCOUNTING	**25 - 45**
QUANTITATIVE ANALYSIS	**46 - 73**
INFORMATION TECHNOLOGY	**74 - 92**

AT/121/PII.5 **Examination No.....................**

ASSOCIATION OF ACCOUNTANCY BODIES IN WEST AFRICA
ACCOUNTING TECHNICIANS SCHEME WEST AFRICA
PART II EXAMINATIONS - MARCH 2012
PRINCIPLES AND PRACTICE OF FINANCIAL ACCOUNTING

Time Allowed: 3 hours

Insert your Examination number in the space provided above

SECTION A (ATTEMPT ALL QUESTIONS)

PART I – MULTIPLE-CHOICE QUESTIONS (30 MARKS)

Write ONLY the alphabet (A, B, C, D, and E) that corresponds to the correct option in each of the following questions

1. Which of the following is **NOT** a cause of Depreciation of a Motor Vehicle?

   A. Physical deterioration
   B. Obsolescence
   C. Depletion
   D. Scrap value
   E. Time factor

2. The sales of Le 1,525 to Mr. D. Nonko was wrongly posted into Sales ledger as Le 1,552. This type of error is known as

   A. Compensating error
   B. Error of principle
   C. Casting Error
   D. Error of Commission
   E. Error of original entry

3. The Net Book value of a Property Plant & Equipment is ₦1,750,000 while the Accumulated Depreciation on the Property Plant & Equipment to date is ₦1,050,000. Assuming there are no additions to and disposal of the Fixed Asset, the cost of the Property Plant & Equipment is

   A. ₦2,800,000
   B. ₦1,750,000
   C. ₦1,050,000
   D. ₦700,000
   E. ₦500,000

4. A company's profit before tax for 2010 financial year is GH ¢100,000. The corporate tax rate is 20%. The share capital/stated capital of the company consists of 400,000 shares. Calculate the Earnings per share (EPS) of the company.

A. GH ¢2.00
B. GH ¢2.50
C. GH ¢0.50
D. GH ¢0.40
E. GH ¢12.50

5. Non Current assets are distinguished from current assets by the following characteristics **EXCEPT**

A. Long-term in nature
B. Not normally acquired for resale
C. Usually stock in trade
D. Used to generate Income directly or indirectly for a business
E. Not normally liquid assets

6. Which of the following is a **CORRECT** statement in respect of incomplete record transactions?

A. Change in Net Assets = Capital introduced plus profit for the year less drawing for the year
B. Change in Net Assets = Capital Introduced less profit for the year plus Drawing for the year
C. Change in Net Asset = Capital Introduced plus profit for the year plus Drawing for the year
D. Change in Net Assets = Capital Introduced plus current liabilities less profit for the year
E. Change in Net Assets = Capital Introduced plus current Assets less Long term loan

7. Depreciation is

A. The amount spent to buy a non-current asset
B. The salvage value of a non-current asset
C. The part of the cost of non-current asset consumed during its period of use by the company
D. The amount of money spent replacing non-current assets
E. The part of the cost of asset reserved to be consumed in future period

8. An exceptional item is

   A. Normal but excessive
   B. Abnormal, excessive and infrequent
   C. Normal but infrequent
   D. Excessive but frequent
   E. Excessive but not frequent

9. Assets, with a life-span of more than one year, within the business on an ongoing basis, in order to generate revenue are called

   A. Property Plant & Equipment
   B. Current Assets
   C. Non-Fixed Assets
   D. Non-Current Assets
   E. Intangible Assets

10. Which is odd among the following?

   A. Going concern concept
   B. Stability concept
   C. Matching concept
   D. Continuity concept
   E. Profitability concept

11. Items of revenue and expenses that were recorded in the current year but would have been recorded in a prior year or years if all of the facts had been known at that time are

   A. Prior year adjustments
   B. Ordinary activities
   C. Exceptional items
   D. Extraordinary items
   E. Accrual items

12. In valuing inventories under IAS 2 at the end of financial year, which one of the following valuation methods should **NOT** be used?

   A. First In First Out
   B. Last-in-Last-Out
   C. Average Cost
   D. Specific identification
   E. Standard cost

13. Where subscription in arrears at the end of the year is omitted from the subscription account; the effect will

A. Understate the liability and understate the income
B. Understate the liability and overstate the Surplus
C. Understate the income and understate the Surplus
D. Overstate the income and understate the Surplus
E. Understate the income and understate the liability

14. Which of the following will **NOT** result in dissolution of a partnership firm?

A. When partners are intolerable of each other
B. When a partner retires
C. When a partner is handicapped
D. When a partner is insane
E. When a partner dies

15. **ONE** of the following is **NOT** an item meant for the Receipts and payments Account

A. Accrued Rent on premises
B. Annual Subscription received
C. Payment for new motor van
D. Donation received by cheque
E. Payment for stationery

16. Which of the following is **NOT** an item that should be included in the Income and Expenditure Account of a Not-for-profit organization

A. Annual Subscription
B. Salaries and wages
C. Insurance premium
D. Purchase of Motor Vehicle
E. Rent and Rates

17. In preparing Bar Account of a not-for-profit organization, the understated value of opening inventories will

A. Understate the cost of goods sold
B. Overstate the cost of goods sold
C. Overstate the cost of goods purchased
D. Understate the cost of unsold goods
E. Understate the liability on goods sold

18. Accumulated fund is to not-for-profit organization, as…………………. is to a profit oriented entity

    A. Net profit
    B. Gross profit
    C. Net surplus
    D. Capital
    E. Net assets

19. Which of the following is included in statement of changes in equity?

    A. Taxation
    B. Dividend paid
    C. Share premium
    D. Investment
    E. Non-current Assets

20. JKL is a sole trader who sells his goods at 25% above cost. His books give the following information at 31 December 2010

	₦
Inventory 1 January 2010	58,200
Inventory 31 January 2010	46,560
Purchases	232,800

    Calculate the sales for the period

    A. ₦183,330
    B. ₦195,552
    C. ₦244,440
    D. ₦293,328
    E. ₦305,550

21. Which of the following is calculated in the manufacturing Account?

    A. Cost of goods sold
    B. Cost of goods produced
    C. Cost of goods available for sales
    D. Profit for the period
    E. Gross profit for the period

22. A company issued 2 million ordinary shares of ₦0.50 at ₦1.50 each and it was fully paid on application. Which of the following entries is correct for the transaction?

		Dr. ₦'m	Cr. ₦'m
A	Bank	3	
	Ordinary shares		2
	Share premium		1
B	Bank	3	
	Ordinary Shares		3
C	Bank	3	
	Ordinary Shares		1
	Share Premium		2
D	Bank	2	
	Ordinary Shares		2
E	Bank	2	
	Ordinary Shares		1
	Share Premium		1

23. Which of the following transactions will feature in **ONLY** the books of a limited liability company?

A. Overdraft
B. Trade Receivables
C. Bills Payable
D. Debenture Stock
E. Inventories

24. Which of the following should be reported in the statement of comprehensive income?

A. Proposed dividend
B. Preference dividend
C. Interim dividend paid
D. Capital reissues
E. Revaluation reserves

25. The deposit paid to the vendor in a Hire Purchase transaction is

A. Dr. The Bank Account; Cr. The Hire Purchase Vendor Account
B. Dr. The Asset Account; Cr. The Hire Purchase Vendor Account
C. Dr. The Hire Purchase Vendor Account; Cr. Hire Purchase Interest Account
D. Dr. The Hire Purchase Vendor Account; Cr. The Asset Account
E. Dr. The Hire Purchase Vendor Account; Cr. The Bank Account

26. If the minimum rent is ₦10,000,000 per annum, and the rate of royalty payable under the lease is ₦1,250 per ton. What is the short working in value when only 6,000 tons are worked?

A. ₦2,083,333
B. ₦2,500,000
C. ₦7,500,000

D. ₦10,000,000
E. ₦12,500,000

27. The account that records the aggregate figures of goods sent to branches is known as

A. Branch consignment account
B. Branch Stock Account
C. Branch Profit and Loss Account
D. Goods to Branch Account
E. Goods Returnable by Branch Account

28. The journal entry to record goods returned by branch debtors direct to the head office is

A. Dr. Goods sent to branch account; Cr. Branch Stock Account
B. Dr. Branch Stock Account; Cr. Branch Debtors Account
C. Dr. Bank Account; Cr. Branch Debtors Account
D. Dr. Branch Profit and Loss Account; Cr. Branch Debtors Account
E. Dr. Branch Stock Account; Cr. Goods sent to Branch Account

29. The sales value of goods sold on 2 January was ₦250,000. The gross margin on sales was 25%. What is the value of stock sold on December 31 2011?

A. ₦62,500
B. ₦125,000
C. ₦187,500
D. ₦200,000
E. ₦250,000

30. The working capital ratio of a company is 3:1. The value of the working capital is L$60,000. Find the total current assets of the company?

A. L$90,000
B. L$20,000
C. L$180,000
D. L$120,000
E. L$30,000

PART II: SHORT-ANSWER QUESTIONS (20 Marks)

Write the answer that best completes each of the following questions/statements

1. The inventory recording whereby the stock balance is shown on the inventory record after every receipt or issue is known as…………………………

2. Which method of long term contract recognize revenue only when contract is completed or substantially completed?

3. State the term used which cover the value of all resources the contractor has invested in the uncompleted contractee's job at the time of reporting or the financial year end.

4. In operating lease, when rent on lease becomes payable, show the accounting entries for rent payable in the book of the lessor

5. The authorized share capital of a company is stated in its……………………

6. State **ONE** fixed interest bearing capital

7. Bade Plc issued ₦1,000,000, 9% debenture stock at 96. This means that the debenture is issued at a ……………………of ₦40,000

8. $\frac{Net\ Profit}{Capital\ employed}$ X $\frac{100}{1}$% is described as …………………………………

9. State **TWO** inventory valuation methods that should not be used in the preparation of financial statements recommended in IAS 2 – Inventories

10. How should work-in-progress be determined when accounting for construction contract?

11. How is goodwill arising from acquisition of business dealt with in the financial statements?

12. How would errors that result from the use of incorrect accounting estimates be treated in the current year?

13. What is the accounting ledger entries for the increase in the value of goodwill on the admission of a new partner?

14. What is the main reason for preparing the statement of affairs for a not-for-profit organization?

15. Journalise the loss on disposal of motor vehicle on the dissolution of a partnership

16. What is the main reason for preparing the Receipts and Payments Account for a not-for-profit organization?

17. Give **TWO** accounting errors which may affect the agreement of the trial balance.

18. The formulae for calculating depreciation using Productive Output Method is……………………

19. State **TWO** classes of not-for-profit making organizations.

20. The following information was extracted from the ledger of XYZ Ltd in respect of disposal of plant and machinery

	₦
Profit on disposal	750,000
Cost of plant and machinery	1,500,000
Accumulated Depreciation	600,000

What is the Sales proceeds?

SECTION B - Attempt Any FOUR Questions (50 Marks)

QUESTION 1

The following information were extracted from the books of PAPALOLO Nigeria Ltd in respect of Property Plant Equipment (PPE) as at 31 December 2011

i. The cost of the Property Plant Equipment (PPE) and Accumulated Depreciation as at 31 December 2010 were:

Types of PPE	Accumulated Depreciation	Cost
	₦	₦
Plant & Machinery	3,725,000	7,920,000
Motor Vehicles	3,500,000	8,500,000
Furniture & Fittings	275,750	905,500

ii. During the year (2011) the company acquired the following items of PPE: Plant and Machinery with cost of ₦2,500,000 and motor vehicle for ₦3,750,000.

iii. According to the accounting policy of the company on Depreciation, PPE are depreciated on straight line basis at the following annual rates: plant and machinery 15%, motor vehicle 25%; and furniture and fittings at 10%.

iv. Also, during the year, the company disposed of a motor vehicle with cost of ₦1,500,000 and a net book value of ₦1,000,000 for the sum of ₦3,000,000.

Required:

a. Prepare PPE schedule as at 31 December 2011. (3 Marks)

b. Write short notes on the following methods of depreciation of property, plant and equipment

i. Straight line method
ii. Reducing Balance method
iii. Sum of the Years Digits method (9½ Marks)

(Total $12^1/_2$ Marks)

QUESTION 2

IAS 1 requires that accounting policy statements should be disclosed in respect of accounting items.

You are required to:

a. Explain the term "accounting policies". ($2^1/_2$ Marks)

b. List the accounting items and information required to be disclosed in the financial statements. (10 Marks)

(Total $12^1/_2$ Marks)

QUESTION 3

The Treasurer of the KunKusi Social Club has produced the following receipts and payments account for the year ended 31 December 2011

Receipts		Payments	
	Le		Le
Balance b/d 1/1/2011	58,500	Refreshment suppliers	64,800
Subscriptions	675,900	Wages	471,000
Net dances	75,090	Rent	130,500
Refreshment takings	244,350	New equipment	273,000
Disposal of equipment	5,100	Travelling expenses	28,500

Additional information:

i. Refreshment inventory was valued: 31 December 2010 Le10,200; 31 December 2011 Le13,800. There was nothing owed for refreshment inventory on either of these dates.
ii. On 1 January 2011 the club's equipment was valued at Le486,000. Included in this figure, was an equipment valued at Le6,300, which was sold during the year for Le5,100
iii. The amount to be charged for depreciation of equipment for the year is Le78,800.
iv. Subscriptions owed by members at 31 December 2010 was nil; at 31 December 2011 subscriptions owed by members was Le12,900.

You are required to:

a. Prepare the refreshment account for the year ended 31 December, 2011. For this purpose Le70,200 of the wages is to be charged to this account (4 Marks)

b. Prepare the Income and Expenditure account (in vertical format) for the year ended 31 December 2011 (3 Marks)

c. Prepare the Statement of financial position (in vertical format) as at 31 December 2011. (3 Marks)

d. Give **TWO** reasons why some social clubs in practice may **NOT** include subscriptions in arrears at the end of the financial year as an asset in the Statement of financial position. (2½ Marks)

(Total 12½ Marks)

QUESTION 4

The Trial Balance of Okonjo Plc as at 31 December 2010 is given as follows:

	Dr.	Cr.
	₦'000	₦ '000
Purchases/Sales Revenue	46,000	115,000
Inventory	18,400	
Distribution Expenses	18,400	
Administration Expenses	41,170	
Receivables and payables	23,000	46,000
Cash at bank	18,630	
Ordinary shares of ₦0.50		23,000
12% Preference shares of ₦1		20,700
10% Debenture		18,400
Non-current assets at cost	115,000	
Accumulated Depreciation on Non-current Assets		34,500
Share Premium		20,700
Accumulated profits at 1/1/2010		6,900
Interest on debenture	920	
Preference dividend paid	1,150	
Interim dividend paid	3,680	
Tax		1,150
	286,350	286,350

Additional information

Company income Tax for the current year is estimated at ₦6,900,000
The tax ₦1,150,000 represents an over provision of tax for previous year.
Closing inventory is ₦27,600,000

You are required to prepare the following financial statements:

a. Income Statement for the year ended 31 December 2010
b. Statement of Financial Position as at 31 December 2010

QUESTION 5

Abedi Yaro consigned 5 crates, each containing 60 identical toys valued at ₦375,000 to his agent Huntonu Abaji on 1 September 2011.

Abedi Yaro paid the insurance and transport amounting to ₦50,000 and ₦75,000 respectively.

Huntonu Abaji paid insurance of ₦62,000, storage charges of ₦87,500 and delivery charges of ₦13,750. By the end of the quarter, 31 December 2011 Huntonu Abaji had sold 225 of the toys for ₦4,500,000. He sent a cheque for the amount due after deducting his agreed sales commission of 10%.

You are required to prepare the following accounts for the quarter ending 31 December in Abedi Yaro's ledger:

a. Goods on consignment account
b. Consignment to Huntonu Abaji
c. Huntonu Abaji account

Show workings. **(12½Marks)**

QUESTION 6

Sanloaf Ltd released one motor vehicle on lease to Junior Enterprise Ltd on 1 January 2008 at a cost of L$5,200,000. Junior Enterprises Ltd pays lease rental in advance amounting at L$372,000 per annum.
The depreciation rate of the motor vehicle is 18% using straight line method.
Sanloaf Ltd is responsible for maintenance and repair expenses while Junior Enterprises Ltd bears operating expenses.
The lease is for 3 years and is cancellable.

You are required to prepare the following accounts in the book of Sanloaf Ltd:

a. Motor vehicle Account
b. Junior Enterprise Account
c. Lease Rental Account
d. Provision for Depreciation
e. Income Statement (Extract)
f. Statement of Financial position (Extract)

(12½Marks)

SECTION A
PART I- MULTIPLE-CHOICE QUESTIONS

1. D
2. E
3. A
4. D
5. C
6. A
7. C
8. A
9. D
10. B
11. A
12. B
13. C
14. C
15. A
16. D
17. A
18. D
19. C
20. E
21. B
22. C
23. D
24. D
25. E
26. B
27. D

28. A

29. C

30. A (30 ticks at 1 mark each) = 30 marks

EXAMINERS' COMMENT

The question tests the candidates' knowledge on all areas of the syllabus. All candidates attempted the questions while about 75% of them scored above average marks.

PART II - SHORT-ANSWER QUESTIONS

1. Perpetual inventory system

2. Completed contract method

3. Work-in-progress

4. Dr. Lessee Account

   Cr. Rent in lease Account, (with amount of rent payable)

5. Memorandum of Association/Articles

6. Preference Shares

7. Discount

8. Return on capital employed

9. i. Latest purchase price

   ii. Last-in-first-out

   iii. Base stock

10. Cost to date plus Profit/(Loss) to date less progress billing.

11. Intangible non-current asset in the statement of financial position

12. Adjusted during the year accordingly

13. Dr. Goodwill Account; Cr. Old Partners Capital Account. (in the old profit and loss sharing ratio.)

14. To determine Accumulated fund

15. Dr. Realization Account; Cr. Motor Vehicle Disposal Account

16. To determine cash and bank balances

17. Error of single entry; Transportation; Understatement of opening balances; Understatement of closing balances; overstatement of opening and closing balances.

18. <u>Cost-Residual value</u>

Estimated total units to be produced by the asset.

19. i. Those deriving income from sales of goods

ii. Those deriving income from other sources other than sales of goods

20. ₦1,650,000 i.e. (₦1500,00 – ₦600,000 +₦750,000)

EXAMINERS' COMMENT

All candidates attempted the questions that cover all areas of the syllabus. About 55% of the candidates performed well and scored above average marks.

SOLUTION 1

(a) PPE - Property, Plant and Equipment Schedule

	Plant & Machinery	Motor Vehicle	Furniture & Fitting	TOTAL
Costs	₦	₦	₦	₦
1/1/2011	7,920,000	8,500,000	905,000	17,325,000
Additions	2,500,000	3,750,000	-	6,250,000
Disposal	-	(1,500,000)	-	(1,500,000)
31/12/2011	10,420,000	10,750,000	905,000	22,075,000
DEPRECIATION				
1/1/2011	3,725,000	3,500,000	275,750	7,500,750
Charged in the year	1,563,000	2,687,500	90,550	4,341,050
Disposal	-	(500,000)	-	(500,000)
	5,288,000	5,687,500	366,500	11,341,800
NET BOOK VALUE				
31/12/2011	5,132,000	5,062,500	539,200	10,733,200

(b) (i) STRAIGHT LINE METHOD

This method is also called Fixed Instalment Method. Under this method, the cost less scrap value of the fixed asset is allocated equally to operation over the years of its useful life.

- The annual depreciation is calculated using the formulae below

$$\frac{Cost - Scrap\ Value}{Useful\ Life\ (in\ years)}$$

- The major advantage of this method is its simplicity while the major disadvantage is that it charges equal amount of depreciation yearly whereas the yearly contribution of assets to income may not be equal.

(ii) REDUCING BALANCE METHOD

- This method is also called Declining or Diminishing BALANCE METHOD. Under this method, depreciation is calculated per annum at a fixed percentage rate on the Net book value. Since a fixed percentage rate is being applied on a net book value that falls every year, the annual depreciation charge falls progressively every year.

  The formulae below is used for calculating the rate of Depreciation

$$= \left(1 - n\sqrt{s/c}\right) \times \frac{100}{1}$$

Where r = depreciation rate in %

n = number of years of the useful life

s = Scrap value of the asset

c = Cost of the asset

(iii) <u>SUM OF THE YEAR DIGIT METHOD</u>

Under this method the number of years of the useful life of the asset is allocated in reverse order, as digit to each year. For example, if a fixed asset is estimated to have useful life of 4 years 4 digits will be allocated to the first year, 3 digit to the second year, 2 digit to the third year and one digit to the fourth year.

This method is similar to the reducing balance method to the extent that the annual depreciation charge falls progressively.

EXAMINERS' COMMENT

The question on preparation of Property Plant and Equipment Schedule and understanding of three methods of the depreciation was attempted by about 70% of the candidates, performance in part (a) of the question was poor while the part (b) performance was good.

SOLUTION 2

(a) Accounting policies are the principles, bases, conventions, rules and procedures used by management in the preparation and presentation of financial statements. As there are several generally accepted methods of treating certain transactions and balances in the financial statements, it becomes necessary to specifically state the methods adopted in their preparation in order to aid interpretation, comprehension and use.

(b)(i) Rate of depreciation of fixed assets

Basis of stock valuation and work-in-progress

Basis of accounting

Information on consolidation

Valuation and disclosure of goodwill

Valuation and disclosure of investments

Turnover

(ii)

- Accounting policies adopted should be disclosed as an integral part of the financial statements and disclosed in one place.
- The accounting policies used by management should be governed by the basic concept of materiality, prudence and substance over form
- Where the fundamental accounting concepts of accrual, consistency and continuity have not been followed, the facts should be disclosed together with the reasons why they have not been applied.

- Incorrect treatment of items in the financial statements will not be rectified by disclosure.
- A change in the accounting policy and its effect on the financial statements, if significant, should be disclosed and quantified.
- Financial statements should show corresponding figures for the preceding period.

EXAMINERS' COMMENT

The question tests candidates' knowledge on accounting policies and relevant information and items to be disclosed in financial statements. About 30% of candidates attempted it and put up poor performance.

Some candidates listed items in statement of financial position instead of relevant information in financial statements.

SOLUTION 3

(i) It is believed that subscriptions that have owed for a long time are never paid as members may lose interest or simply go somewhere else. As a result, many clubs do not include unpaid subscriptions as an asset in the Statement of Financial position.

(ii) Use of cash basis of accounting as against accruing for what may not be realizable

(iii) Financial incapacitated members

(a) **Refreshment Account**

	₦	₦
Takings		244,350
Opening inventory	10,200	
Supplies	64,800	
	75,000	
Less: Closing inventory	13,800	
		61,200
		183,150
Wages		70,200
Net		112,950

(b) **Income and Expenditure for the year ended 31 December, 2011**

	₦	₦
Income		
Subscriptions	688,800	
Net refreshment	112,950	
Net dances	75,090	
		876,840
Expenditure		
Wages (₦471,000 – ₦70,200)	400,800	
Rent	130,500	
Loss on disposal of equipment (₦6,300 – ₦5,100)	1,200	
Travelling expenses	28,500	
Depreciation of equipment	78,800	
		639,800
Surplus		237,040

(C) Statement of Financial Position as at 31 December, 2011

	₦	₦
Non Current Assets		
Equipment (₦486,000 + ₦273,000 – ₦6,300)	752,700	
Depreciation	78,800	
		673,900
Current Assets		
Inventories	13,800	
Subscriptions in arrears	12,900	
Bank Balance	91,140	
		117,840
		791,740
Accumulated Fund		554,700
Surplus		237,840
		791,740

Notes

Accumulated fund	₦
Bank Balance 1/1/2011	58,500
Refreshment Inventory	10,200
Equipment	486,000
	554,700

Subscriptions Account

	₦		₦
Balance b/d		Receipts & Payments	675,900
Income & Expenditure	688,800	Balance c/d	12,900
	688,800		688,800
Balance b/d	12,900		

EXAMINERS' COMMENT

The question which tests candidates' knowledge on income and expenditure account was attempted by about 70% of the candidates and they put up good performance.

SOLUTION 4

OKONJO PLC

Income Statement for the year ended 31/12/2010

	N'000
Sales Revenue	115,000
Cost of sales	(36,800)
Gross profit	78,200
Distribution costs	(18,400)
Administration costs	(41,170)
Profit from operations	18,630
Finance cost	(1,840)
Profit before tax	16,790
Taxation (6900 – 1150)	(5,750)
Net profit for the period	11,040

Statement of Financial position as at 31/12/2010

	N'000	N'000
Non-current asset at cost	115,000	
Less Accumulated depreciation	(34,500)	
Net book value		80,500
CURRENT ASSETS		
Inventory	27,600	
Receivables	23,000	
Cash at bank	18,630	
	69,230	
Less Current Liabilities		
Trade payables	46,000	
Preference dividend	1,334	
Taxation	6,900	
Debenture interest (1840 -920)	920	
Net current asset	55,154	14,076
Total assets less current liabilities		94,576
10% Debenture		(18,400)
		76,176
Capital and Reserves		
12% Preference share of N1		20,700
Ordinary shares of N0.50		23,000
Share premium		20,700
Accumulated profit		11,776
		76,176

1. Workings

	N'000	N'000
Preference dividend	12% x 20700	2484
Less amount paid		1150
Proposed Pref. dividend		1334

2.

	N'000	N'000
Accumulated profit as at 1/1/2010		6900
Profit for the period	11,040	
Preference dividend	(2,484)	
Interim dividend	(3,680)	4,876
		11,776

EXAMINERS' COMMENT

The question on preparation of final accounts of company was attempted by about 75% of the candidates, and fair performance was recorded.

Many of the candidates could not follow the appropriate format of presentation of the financial statements.

SOLUTION 5

Abedi Yaro
Goods on Consignment Account

	₦		₦
Trading	1,875,000	Consignment to Huntonu Abaji	1,875,000

Consignment to Huntonu Abaji Account

	₦		₦
Goods on consignment	1,875,000	Huntonu Abaji-Sales	4,500,000
Insurance	50,000	Stock c/d	537,375
Transport	75,000		
Huntonu Abaji - Insurance	62,000		
- Storage	87,500		
- Delivery	13,750		
Commission (10% x N4,500,000)	450,000		
Profit and loss	2,424,125		
	5,037,375		5,037,375

Huntonu Abaji Account

	₦		₦
Consignment	4,500,000	Consignment to Huntonu Abaji	
		- Insurance	62,000
		- Storage	87,500
		- Delivery	13,750
		- Commission	450,000
	-	Bank settlement	3,886,750
	4, 500,000		4, 500,000

Workings

Stock

Goods sent	1,895,000
Insurance	50,000
Transport	75,000
Insurance	62,000
Storage	87,500
	2,149,500

Closing stock = $\frac{75}{300} \times \frac{2,149,500}{1}$

=537,375

Huntonu's Ledger – Accounts sales

	₦	₦
Sales – Debtors		4,500,000
Insurance	62,000	
Delivery	13,750	
Storage	87,500	
Commission	450,000	613,250
Bank settlement		3,886,750

EXAMINERS' COMMENT

The question tests candidates' knowledge on preparation of Consignment Account. About 75% of candidates attempted it and put up fair performance.

SOLUTION 6

Motor Vehicle Account

	L$		L$
Cash	5,200,000		

Junior Enterprise (lessee) Account

	L$		L$

31/12/2008	Rental	372,000	31/12/08	Bal c/d	372,000
1/1/09	Bal b/d	372,000	31/12/08	Cash	372,000
31/12/09	Rental	372,000	31/12/08	Bal. c/d	372,000
		744,000			744,000
1/1/10	Bal b/d	372,000	31/12/10	Cash	372,000
1/1/2011	Rental	372,000	31/12/10	Bal. c/d	372,000
		744,000			744,000
1/1/2011	Bal. b/d	372,000	1/1/2011	Cash	372,000

Lease Rental Account

		L$			L$
31/12/2008	P & L	372,000	31/12/08	Jnr. Ent.	372,000
31/12/09	P & L	372,000	31/12/09	Jnr. Ent.	372,000
31/12/09	P & L	372,000	31/12/10	Jnr. Ent.	372,000

Provision for Depreciation Account

		L$			L$
31/12/08	Bal. c/d	936,000	31/12/08	P & L	936,000
31/12/09	Bal. c/d	1,872,000	1/1/09	Bal. b/d	936,000
			31/12/19	P & L	936,000
		1,872,000			1,872,000
			1/1/10	Bal. b/d	1,872,000
31/12/10	Bal. c/d	2,808,000	31/12/10	P& L	936,000
	Bal. c/d	2,808,000			2,808,000
			1/1/11	Bal. b/d	2,808,000

Income Statement (Extract)

		L$			L$
2008:	Depreciation	936,000	2008:	Lease Rental	372,000
2009:	Depreciation	936,000	2009:	Lease Rental	372,000
2010:	Depreciation	936,000	2010:	Lease Rental	372,000

Statement of Financial position (Extract)

		L$			L$
2008	Current Liability		2008		Non Current Asset:
	Jnr. Ent.	372,000		Motor Vehicle	5,200,000
				Less Depreciation	936,000
				Net Book Value	4,264,000
2009	Current Liabilities				
	Jnr. Ent.	372,000	2009	Non Current Asset	
				Motor Vehicle	5,200,000
				Less Depreciation	1,872,000
				Bet Book Value	3,328,000
2010	Current Liabilities		2010	Non Current Asset	
	Jnr. Ent.	372,000		Motor Vehicle	5,200,000
				Less Accum. Depr.	2,808,000
					2,392,000

EXAMINERS' COMMENT
The question on keeping of accounting ledgers on lease was attempted by about 30% of candidates and their performance was very poor.

AT/121/PII.6 Examination No…………………

ASSOCIATION OF ACCOUNTANCY BODIES IN WEST AFRICA

ACCOUNTING TECHNICIANS SCHEME WEST AFRICA

PART II EXAMINATIONS – MARCH 2012

PUBLIC SECTOR ACCOUNTING

Time allowed: 3 hours

Insert your Examination number in the space provided above

SECTION A: (Attempt all questions)

PART 1: MULTIPLE – CHOICE QUESTIONS (30 Marks)

Write ONLY the alphabet (A,B,C,D or E) that corresponds to the correct option in each of the following questions.

1. The Fiscal Responsibility Act, 2007 is concerned with:
   i. Ensuring the diligent pursuit of the country`s economic objectives
   ii. Wise and legal utilization of resources
   iii. Laying emphasis on the preparation of Medium-Term Expenditure

   A. (i), (ii) and (iii)
   B. (i) and (ii)
   C. (i) and (iii)
   D. (ii) and (iii)
   E. (iii) only

2. Which of the following does Section 13 of the Audit Act of 1956 as amended require the Accountant-General of the Federation to submit to the Auditor-General annually?

   (i) Receipts and Payments Account
   (ii) A statement of Assets and Liabilities
   (iii) A statement of Revenue and Expenditure

   A. (i) and (ii)
   B. (ii) only
   C. (i), (ii) and (iii)
   D. (ii) and (iii)
   E. (iii) only

3. According to the financial Regulations, the Officer who convenes a Board of Enquiry will forward a copy of the order to

   i. The Chairman, Federal Civil Service Commission
   ii. The Accountant-General of the Federation
   iii. The Accounting Officer
   iv. The Auditor-General for the Federation

   A. (i) only
   B. (ii) only
   C. (iii) only
   D. (i), (ii) and (iii)

E. (i), (ii) and (iv)

4. Which Committee is saddled with the responsibility of reviewing the Auditor-General's report?

A. Audit Alarm Committee
B. Finance and General Purposes Committee
C. Public Accounts Committee
D. Senate Committee
E. National Assembly Committee

5. According to the 1999 Constitution of Nigeria, Sources of inflows into the Development Fund include

i. Contributions from the Consolidated Revenue Fund
ii. External Grants
iii. External Loans

A. (i) and (ii)
B. (i), (ii) and (iii)
C. (ii) and (iii)
D. (ii) only
E. (i) only

6. Under Financial Regulations, who is the Chief Accounting Officer of the receipts and payments of government funds?

A. The Auditor-General for the Federation
B. The President
C. The Minister of Finance
D. The Accountant-General of the Federation
E. The Governor of the Central Bank

7. Which **ONE** of the following does **NOT** regulate the receipts and payments of Government money?

A. Government Gazettes
B. Treasury Circulars
C. Financial Circulars
D. The Accountant-General of the Federation
E. The Governor of the Central Bank

8. What is the major law on which the Foundation of Government Accounting rests?

A. The Appropriation Acts
B. The Public Procurement Act, 2007
C. The Finance and (Control and Management)Act, 1958 (cap.144,1990)
D. The Fiscal Responsibility Act, 2007
E. The Audit Act, 1956 (as amended)

9. The International Public Sector Accounting Standard (IPSAS) which deals with the presentation of cashflow statement is

A. IPSAS 1
B. IPSAS 2
C. IPSAS 3
D. IPSAS 4
E. IPSAS 5

10. The International Public Sector Accounting Standard (IPSAS) which treats the Preparation and presentation of financial statements is

A. IPSAS 1
B. IPSAS 2
C. IPSAS 3
D. IPSAS 4
E. IPSAS 5

11. The fund provided for unbudgeted expenditure is called

A. Contingency Reserve Fund
B. Contingency Fund
C. Capital Project Fund
D. Trust and Agency Fund
E. Sinking Fund

12. The advantages of Fund Accounting include all the following **EXCEPT**

A. It facilitates co-ordination and planning
B. It is simple to operate
C. It is used to highlight government policy
D. It does not provide information on debtors and creditors
E. It ensures financial control

13. Which factor among the following renders a voucher invalid?

A. When certificate is signed separately
B. When presented for payment after 10 days
C. When certified by the officer designated to do so
D. When stamped "Entered in the Vote Book"
E. When prepared in ink

14. What fund is otherwise known as Revenue Fund?

A. Trust Fund
B. Asset Renewal Fund
C. Stabilization Fund

D. Contingencies Fund
E. Capital Project Fund

15. The officer that performs a similar role to that of the Accountant-General of the Federation at the Local Government level is **ONE** of the following

A. Accountant-General of the Local Government
B. Vote Controller
C. Treasurer
D. Revenue Collector
E. Imprest Holder

16. All sums advanced to public officer to meet expenditure under current estimate for which voucher cannot immediately be presented to a Sub-Accounting Officer for payment is

A. Advance-non-Personal Account
B. Advance-Personal Account
C. Imprest
D. Standing Advance
E. Project Account

17. Authority for issuing imprest is made by the

A. Attorney General
B. Auditor General
C. Surveyor
D. Standing Advance
E. Project Account

18. ONE of the following is NOT a function of the Accountant-General of the Federation

A. Heads losses and Audit Alarm
B. Introduction of effective internal control system
C. Ensuring effective supervision over receipts of revenue as well as its prompt collections
D. Ensuring that no disbursement is made without proper authorization
E. Budget preparation and implementation

19. **ONE** of the following officers is required to report on the strength of the internal control system

    A. The Accountant-General
    B. The Auditor-General
    C. The Internal Control System Officer
    D. The Vote Controller
    E. The Inspector of Internal Control System

20. A document indicating the total composition of government expenditure and the sources from which such expenditure is expected to be financed in the course of the year is known as

    A. Rolling Plan
    B. Rolling Budget
    C. Perspective Plan
    D. The Vote Controller
    E. The Inspector of Internal Control System

21. Conditions for becoming Self-Accounting Until include the following EXCEPT

    A. A well equipped control pay office
    B. A secured Voucher Room
    C. A fully constituted Internal Audit Unit
    D. An accounting book
    E. An accounting code for the Ministry

22. **ONE** of the following **NOT** a characteristic of a Non-Self Accounting Unit

    A. It does not operate Central Pay System
    B. It maintains an Accounting Code
    C. It renders returns in details
    D. It does not have a Clearance Account
    E. It attached copies of vouchers to their returns

23. Post-employment benefits for employees is also referred to as

    A. Pension
    B. Salary
    C. Leave Bonus
    D. Domestic Allowance
    E. Christmas Bonus

24. Parastatals are sometimes referred to as

    A. Private Companies
    B. Ministries
    C. Public Liability Companies
    D. Statutory Corporation
    E. Profit making companies

25. Transcript is prepared by (i)……………….. on (ii)……….basis to (iii)………..

    A. (i) Final Account Section (ii) Monthly (iii) Accountant-General
    B. (i) Auditor-General (ii) Monthly (iii) Funds Section

C. (i) Accountant-General (ii) Quarterly (iii) Auditor-General
D. (i) Salary Section (ii) Weekly (iii) Auditor-General
E. (i) Final Account Section (ii) Monthly (iii) Auditor-General

26. **ONE** of the underlisted is **NOT** a document that should accompany transcript

A. Original Cash Book
B. List of outstanding vouchers
C. Breakdown of Expenditure
D. The cash and Bank balances certificate
E. Cheque Books

27. The following serves as control over the payroll prepared by the salary section:

i. Cash Book
ii. Variation advice
iii. Variation advice

A. (i) and (ii)
B. (i), (ii) and (iii)
C. (ii) and (iii)
D. (ii) only
E. (i) only

28. All Government Parastatals have (i)………………which are guided by (ii)…………….

A. (i) Departments (ii) CAMA 1990 (as amended)
B. (i) Schools (ii) Instructions
C. (i) Supervising Ministries (ii) Regulations
D. (i) Trading Department (ii) Ministries
E. (i) Supervising Units (ii) Permanent Secretaries

29. Which of the following is NOT a characteristic of Government Parastatals?

A. Governed by an enabling Act
B. Governed by the Companies and Allied Matters Act 1990
C. Provide Welfare Services
D. Have Supervising Ministries
E. They incur expenses which are divided into Capital and recurrent expenditure.

30. Which of the following is **NOT** an objective of setting up Parastatals?

(A) Control of Economy
i) Checking Inflation
ii) Public Interest
iii) To reduce money in circulation and create poverty
iv) Diversion of Revenue

PART II: SHORT ANSWER QUESTIONS (GHANA) (20 Marks)

Write the answers that best complete the following questions/statements

1. An organization licensed by the National Pension Commission to invest and manage pension fund and assets on behalf of employees is known as…………….

2. All contracts awarded by the Federal Government which are of significant value, are to be reviewed by an independent organ called…………………..

3. The Chief Executive and Accounting Officers of a Local Government who initiate all decisions relating to finance and accounts are the………………….

4. When the Legislature considers and approves the annual Estimates sent to it by the Executive and it is signed by the President, it becomes…………………

5. The Committee set up to examine expenditure after it has taken place to determine whether a department has expended more than allocated to it in accordance with statutory provisions or not is known as…………………….

6. In Government, capital expenditure is met from the……………….Fund.

7. What Warrant is issued at the beginning of the financial year before the Appropriation Act comes into operation.

8. From what fund is recurrent expenditure met?

9. Who maintains is recurrent expenditure met?

10. When the Auditor-General determines whether accounts have been satisfactorily and faithfully kept in accordance with the laws this is……………..Audit.

11. Revolving Fund is also referred to………………………..

12. All the coordinated actions which are taken to ensure that all incomes due to the Government are collected is referred to as………………………..

13. What budget is prepared in Public Sector for construction of bridges
14. The name of the document issued by the Accountant-General for the submission of Budget Estimate is called………………….

15. The items of revenue and expenditure not provided for in the budget, but which forms part of government account are called……………………

16. The officers that ensure that goods ordered are received according to specifications and recorded in the stores ledger appropriately are called…………………

17. The officer responsibilities for issues of Local Purchase Order and taking the liability there on is…………………

18. Unallocated stores should not be issued on…………………..

19. All imported allocated stores paid for are duly taken on charge through registration in…………………and to prevent double payment

20. Store and material issued within the same store for conversion or manufacture shall be supported by……………………..

SECTION B: ATTEMPT ANY FOUR QUESTIONS (50 MARKS)

QUESTION 1

For safe-keeping of stores items and to avert loss, governments Institute control procedures.

You are Required to explain:

a.	Stores in Government Accounting?	($2^1/_2$ Marks)
b.	Allocated and Unallocated Stores	(4 Marks)
c.	Three Sub-division of unallocated Stores	(3Marks)
d.	Stores Receipt Voucher	($1^1/_2$ Marks)
e.	Stores Issue Voucher	($1^1/_2$ Marks)
		(Total $12^1/_2$ Marks)

QUESTION 2

Akosombo State in Ghana voted the sum of 8 million Cedis for scholarship award for its indigent scholars in higher institutions of learning at home and abroad for the 2011 fiscal year. During the year the following transactions in respect of the scholarship vote were undertaken.

		¢'000
Disbursement of scholarship to Mallam Maduri University students		4,000
Disbursement of scholarship to Kwankoso Polytechnic students	2,000	
Disbursement of scholarship to students abroad	1,000	
	7,000	

The balance at January 1st, 2011 on the Scholarship Fund Account and the State's Cash Book were One million Cedis each. A sum of 8 million Cedis was received from the Commission of Finance Scholarship Secretariat and was deposited into the fund.

Required:

a. Prepare the following books of account in Akosombo State Scholarship Vote Fund.
   i. Scholarship Fund
   ii. Cash Book; and

iii. Show an abstract of Akosombo State's Balance Sheet as at 31st December 2011. ($10^1/_2$ Marks)

b. What is Fund as an Accounting entity? (2 Marks)

(Total $12^1/_2$ Marks)

QUESTION 3

The unallocated store of YAHOD State Ministry of Education showed the following information with regards to the receipt and issue of five stars type of Roofing sheet for the repairs of some primary and secondary schools in the State during the month October 2010.

Balance in stock as at 01/10/2010: 420 sheets at ₦350 per sheet
07/10/2010: Purchased: 600 sheets at ₦350 per sheet
12/10/2010: Purchased: 500 sheets at ₦280 per sheet
15/10/2010: Issued: 700 sheets to Yewa Primary School
22/10/2010: Purchased: 400 sheets at ₦360 per sheet.
28/10/2010: Issued: 500 sheets to LAO Secondary School.

Required:
As the Store Officer in this State Ministry, record this transaction in the Store ledger and show the closing balance in quantity and value using First In First Out Method (FIFO)

(**TOTAL $12^1/_2$ Marks)**

QUESTION 4

a. Explain **FIVE** functions of a local government Treasurer (Assistant Superintendent for County Development) in your country. (7½ Marks)

b. Present a short essay on the management of economic crimes in your country (5 Marks)

(Total $12^1/_2$ Marks)

QUESTION 5

Ashante Community Secondary School is a mixed day school established at Aflao a border town in Ghana and Togo. It has programme for the boys and girls as follows:

Junior Class – 3 years and Senior Class – 3 years.
The following information was derived from its management about the school;

STUDENT POPULATION

	JUNIOR		**SENIOR**	
CLASS	BOYS	GIRLS	BOYS	GIRLS
1	150	250	110	180
2	130	220	100	150
3	210	90	90	120

SCHOOL FEES

	JUNIOR		**SENIOR**	
CLASS	BOYS	GIRLS	BOYS	GIRLS

1	300	300	450	450
2	350	350	500	500
3	450	450	650	650

The School fees are paid annually which includes examination fee of 10% of school fees.

Also the following information are necessary;

i. The Community gives a Subvention of ¢200 per student per year.
ii. Parent Teachers' Association sponsors students Practicals at the rate of ¢100 per student. The yearly contribution is ¢300 per student.
iii. The School employed 60 teachers whose annual salaries is ¢600,000 per teacher and 20 Non-teaching Staff whose total annual salary cost ¢120,000 per staff.
iv. The school academic activities cost ¢180,000 which exclude the Practical cost.
v. Parent Teachers' Association social expenses is ¢150,000

You are required to prepare:
a. Domestic Account (7½ Marks)
b. Parent Teacher Association Account (5 Marks)
(Show all your workings) **(TOTAL12½ Marks)**

QUESTION 6
a. Explain briefly **SEVEN** functions of the Accountant-General(Ministry of Finance) in your country. (10½ Marks)
b. Enumerate **TWO** powers of the Accountant-General(Ministry of Finance) in your country. (2 Marks)
c. Give a brief description of the various classes of Board of Survey. (3½ Marks)

(Total 12½ Marks)

SECTION A
PART I MULTIPLE-CHOICE QUESTIONS

1.	A
2.	C
3.	E
4.	C
5.	B
6.	D
7.	A
8.	C
9.	B
10.	A
11.	B
12.	D
13.	B
14.	C
15.	C
16.	C
17.	D
18.	A
19.	B
20.	D
21.	D
22.	B
23.	A
24.	D

25. A

26. E

27. C

28. C

29. B

30. D

EXAMINERS' COMMENT
MCQ 1-10 candidates showed good understanding of these aspects as more than 65% of them scoring above 60% MCQ 11-20. The questions were well attempted as above 75% of candidates scoring 60% of marks obtainable.

MCQ 21-30 – The performance of the Candidates was highly as over 70% of them scoring above 50% of total mark obtainable.

PART II SHORT-ANSWER QUESTIONS

1. Pension Fund Administration

2. Due Process/BUREAU OF PUBLIC PROCUREMENT

3. Local Government Chairmen

4. Appropriation Act

5. Public Accounts Committee

6. Development

7. Provisional General Warrant

8. Consolidated Revenue Fund

9. Accountant-General of the Federation

10. Financial

11. Working Capital Fund

12. Cash Control

13. Capital Expenditure Budget

14. Call Circular

15. Below-the—Line Account

16. Stock verifiers

17. Director of Finance and Accounts

18. Loan

19. Invoice Control Register

20. Conversion Voucher (5.5)

EXAMINERS' COMMENT
SAQ 1-10 – This section was not well understood by the Candidates, performance was fair as about 40% of them scoring above 50% of marks obtainable. SAQ 11-20 - The performance of the Candidates was woeful. The highest mark was 4½ out of 10 marks in favour of less than 10% of the total candidates

SOLUTION 1

a. Stores are defined to include all moveable property purchased from Public Funds or otherwise acquired by Government

b(i) **ALLOCATED STORES**

Allocated Stores are stores the cost of which are chargeable direct to, and remain a charge to, the sub-head of expenditure in which funds for their purchase are provided in the Estimates. These stores are taken on numerical charge and may be placed in an Allocated Stores or put into immediate use. They may be either purchased direct or obtained from the unallocated Stores stocks.

b(ii) **UNALLOCATED STORES**

Unallocated Stores are those purchased for general stock rather than for a particular work or service, for which the final vote of charge cannot be stated at the time of purchase. Their cost is debited to an unallocated store sub-head in the Expenditure estimates. They are held on charge by both value and unit and when issued for use are charged to the appropriate sub-head of expenditure as an Allocated Store, and the corresponding credit is posted to the Unallocated Stores sub-head.

c. Three sub-divisions of unallocated stores are:

i. Expendable stores
ii. Non-Expendable stores
iii. Consumable stores

i. **Expendable Stores:-** These are stores of a semi-permanent nature such as shovels, machetes, paint brushes, etc which have short period of serviceable life.

ii. **Non-Expendable stores:-** These are stores of a permanent nature such as furniture, typewriters, motor vehicles, etc, which have long period of serviceable life.

iii. **Consumable stores:-** These are stores, which once used for the purpose for which they were acquired, cease to exist as a store's item e.g. paint, soap and foodstuffs.

d. **STORES RECEIPT VOUCHER:** This is the voucher used to receive stock of stores into the store by the store keeper. The voucher would be prepared in triplicate. One is to be sent to the Purchasing Department, one to the Accounts Section and the other one retained by the store keeper.

e. **STORES ISSUE VOUCHER:** This is the voucher prepared when requisitions are made from stores. The requisitions are prepared in duplicates. The original is sent to stores issuing department. Each line on the voucher must be utilized until the requisition is completely entered and there shall not be any blank spaces between items. All amounts shall appear in words and in figures. The voucher shall then be ruled off and initialled. The issuing officer will sign each voucher booklet.

EXAMINERS' COMMENT

The question tests the Candidate`s knowledge of stores Accounting in the Public Sector. About 85% of the Candidates attempted the question. Approximately 20% scoring above 50%.

SOLUTION 2

a. Akosombo State Scholarship Fund Account
Scholarship Fund Accounts

	¢000		¢000
Cash	4000	Bal b/f	1000
Cash	2000	Cash	8000
Cash	1000		
Bal c/d	2000		-------
	9000		9000
		Bal b/d	2000

Cash Book Accounts

	¢000		¢000
Bal b/f	1000	Scholarship Fund	4000
Scholarship Fund	8000	Scholarship Fund	2000
		Scholarship Fund	1000
	------	Bal c/d	2000
	9000		9000
Bal b/d	2000		

Akosombo State Scholarship Fund
Balance Sheet as at 31st December 2011

	¢000
Fixed Asset	-
Other Assets	
Cash in Hand & at Bank	2000

b. Fund is a fiscal and an accounting entity with a self balancing set of accounts, recording cash and other financial resources together with all related liabilities. In other words, the funds accounts consist of a complete set of accounts including the final accounts and a balance sheet.

EXAMINERS' COMMENT

This question tests Fund Accounting with about 68% of candidates attempting and scoring above 50%. Part "b" however was not understood by the Candidate as they performed woefully. Less than 2% scoring above 10%.

SOLUTION 3

YAHOO STATE MINISTRY OF EDUCATION
STORE LEDGER CARD – FIFO METHOD

DATE	PARTICULARS	RECEIPT			ISSUES			BALANCE	
		QTY	PRICE	VALUE	QTY	PRICE	VALUE	QTY	VALUE
		₦	₦	₦	₦	₦	₦	₦	₦
01/10/010	Balance							420 at ₦350	147,000
07/10/010	Purchases	600	350	210,000				1020	357,000
12/10/010	Purchases	500	280	140,000				1520	497,000
15/10/010	Issue				420	350	147,000	1100	350,000
15/10/010	Issue				280	350	98,000	820	252,000
22/10/010	Purchases	400	360	144,000				1220	396,000
28/10/010	Issue				320	350	112,000	900	284,000
28/10/010	Issue				180	280	50,400	720	233,600

			₦
Closing balance:	320 at ₦280	=	89,000
	400 at ₦360	=	144,000
			233,600

EXAMINERS' COMMENT
The question was based on Store Ledger. The performance was quite good as more than 70% of Candidates scoring above 60% of total marks obtainable.

SOLUTION 4

(a) The functions of a Local Government Council Treasurer or Assistant Superintendent for Country Development, Ghana are:

(i) Advising the Council and management as to the state of finance

(ii) Retaining bond of all the employees, apart from himself

(iii) He is the controller of the administration machinery of the Council's

Finance Department

(iv) Serving as a signatory to the vouchers and cheques of the local

Government

(v) Preparing and publishing monthly, quarterly and annually the financial statements of the Council

(vi) Preparing the budgets, introducing monitoring devices and supervising the accounts of all the departments.

(vii) Preparing and submitting financial returns and reports

(viii) Ensuring that all advances taken are retired in accordance with the regulations

(ix) Preparing bank reconciliation statements and sorting out differences, promptly, on monthly basis

(x) Ensuring that all accounts are updated and trial balances extracted monthly

(xi) checking the accounts of revenue collections regularly

(xii) Ensuring that payments are not made, unless appropriate vouchers have supporting evidences, duly authorized and approved

(xiii) Providing adequate custody for the Council's assets, particularly the cash balances

(xiv) Ensuring the effective maintenance and continued review of safeguards against the occurrence of fraud and irregularity

(xv) Ensuring that the laid down accounting procedures are strictly adhered to at all times

b. **Management of Economic Crimes in Nigeria**

Economic Crimes in Nigeria is managed by two parallel Financial Institutions. These are:

bi. **Independent Corrupt Practices and Other Related Crimes Commission (ICPC):**

The ICPC was established by the Corrupt Practices and Other Related Offences Act, 2000.

This Commission is a body corporate endowed with perpetual succession. It has a common seal and is juristic i.e. may sue and be sued in its corporate name.

Duties and Functions of ICPC

To receive and investigate any report of the conspiracy by any person or group who have committed or attempt to commit an offence under the Act.

1. To prosecute those who are found to have committed any offence under the Act after the investigation
2. To examine the systems, practice and procedures of public bodies such as Ministries, state, local government or any parastatals.
3. To give supervisory advice to public bodies whose practice systems and procedures are likely to be susceptible to fraud or corruption.
4. To advise, educate and help any officer, agent, board or parastatals on the set of programmes that can be embarked upon to eliminate or reduce to the nearest minimum, the incidence of fraud and corruption.

bii. **Economic and Financial Crimes Commission (EFCC)**

The EFCC is the body that is established with the responsibility of investigating and the enforcement of all laws against economic and financial crimes in all its ramifications.

Functions of EFCC

1. Enforcement and due administration of the provisions of the Act
2. Investigation of reported cases of financial crimes such as Advance Fee Fraud (419), money laundering, counterfeiting, illegal charge transfer, contract scam, forgery of financial instrument, issuance of dud cheques etc.
3. Adoption of measures to identify, trace, freeze confiscate or seize proceeds derived from terrorist activities
4. Adoption of measures to identify, trace, freeze and seize proceeds derived from financial crime related offences
5. Adoption of measures to eradicate and prevent the commission of economic and financial crimes with a view to identifying individuals, corporate bodies or groups involved.

EXAMINERS' COMMENT

The question required the candidates to state the functions of Treasure of Local Government. About 90% of candidates attempted the questions whereby about was on the management of economic crimes. Most of the Candidates missed the questions as less than 5% of the Candidates that attempted this question scored up to 40% of the allocate works.

SOLUTION 5

ASHANTENE COMMUNITY SECONDARY SCHOOL
DOMESTIC ACCOUNTS

	¢edis	¢edis
INCOME:		
School fees: Junior	377,500	
Senior	392,000	
Subventions	360,000	1,129,500
Less Expenditure:		
Teaching staff salaries	36,000,000	
Non Teaching staff salaries	2,400,000	
Practical	180,000	
School Academic Activities	150,000	(38,730,000)
Less:		(37,600,500)

ASHANTENE COMMUNITY SECONDARY SCHOOL
PARENT TEACHERS ASSOCIATION ACCOUNTS

	¢edis	¢edis
INCOME:		
Yearly Contribution	180,000	
Practical Contribution	540,000	720,000
Less Expenditure:		
Student Practical	180,000	
Social Expenses	150,000	330,000
Practical		390,000

Workings:

COMPUTATION OF POPULATION AND TOTAL INCOME
JUNIOR CLASSES

	BOYS	GIRLS	TOTAL	FEE ¢	TOTAL ¢
Year 1	150	250	400	300	120,000
2	130	220	350	350	122,500
3	210	90	300	4500	135,000
			1050		377,500

SENIOR CLASSES

	BOYS	GIRLS	TOTAL	FEE ¢	TOTAL ¢
	110	180	290	450	130,500
2	100	150	250	500	125,000
3	90	120	210	650	136,500
			750		392,000

Total student 1800

Community subvention 200 cedis x 1800 = 360,000 cedis

Practical Expenses Contribution 300 x 1800 = 540,000 cedis

Teaching staff salaries = 600,000 x 60 = 36,000,000

Non teaching staff = 120 x 20 = 2,400,000

EXAMINERS' COMMENT

This question tests candidates' knowledge of School Accounting System. Less than 20% of the Candidates attempted this question and shown adequate knowledge of the requirements. Performance was poor at less than 20% of the Candidates scored above 50% of marks obtainable.

SOLUTION 6

a. Functions of the Accountant-General of the Federation

Acting as the Chief Accounting Officer of the receipts and payments of all government money

1. Supervising the accounts of Federal Government ministries and Extra-Ministerial Department
2. Preparing and issuing Financial Regulations and Treasury Circulars
3. Presenting the Nation's annual financial statements as required by the Minister of Finance
4. Investigating cases of fraud, loss of funds, assets and other malpractices in Federal Ministries and other public agencies
5. Maintaining and operating the Federal Account
6. Formulating the accounting policy of the Federal Government
7. Serving public loans and debt
8. Managing Federal Government Investments
9. Supervising and controlling the computerization of the system of accounting in the Federal Ministries and government agencies
10. Ensuring all revenue is monitored and accounted for.

b. Powers of the Accountant-General of the Federation

1. The Accountant-General has power of unlimited access to all financial documents and records of all Ministries and agencies
2. He is empowered statutorily to carry out any special investigation when the need arises in any Ministry or Department
3. He has power to demand for and obtain any information…..

c. Classes of Board of Survey

Survey can be classified into 3:

1. Survey of Cash
2. Survey of Stamps
3. Survey of Stores, plants, buildings or equipment

EXAMINERS' COMMENT

The question tested the functions of the Accountant-General of the Federation. This section was well attempted by more than 90% of the candidate. Part "6a" was not well responded to as about 30% scoring above 50%. About 40% of Candidates in question "6b" score above 50% while in "6c" over 75% of candidate scored above 50% of marks

AT/121/PII.7 **Examination No................**

ASSOCIATION OF ACCOUNTANCY BODIES IN WEST AFRICA

ACCOUNTING TECHNICIANS SCHEME WEST AFRICA

PART II EXAMINATIONS – MARCH 2012

QUANTITATIVE ANALYSIS

Time Allowed: 3 hours

Insert your Examination number in the space provided above

SECTION A: ATTEMPT ALL QUESTIONS IN THIS SECTION

PART I – MULTIPLE-CHOICE QUESTIONS (30 MARKS)

Write ONLY the alphabet (A B C D or E) that corresponds to the correct option in each of the following questions.

1. Which **ONE** of the following pairs of measures is used for estimation on a histogram?

   A. (Mean, Mode)
   B. (Mean, Median)
   C. (Mode, Median)
   D. (Mean, First quartile)
   E. (Median, Harmonic mean)

2. The harmonic mean of the values 8,5,3,10,2 is

   A. 6.6
   B. 1.32
   C. 0.152
   D. 4.255
   E. 0.235

3. A set of monthly sales (₦'000) recorded by a company was recorded as 8,5, 10,12 and 15. Determine the variance of the monthly sales.

   A. 11.16
   B. 10.00
   C. 3.41
   D. 1.16
   E. 11.60

4. Given the probability density function below

X	0	1	2	3	4
P(X=x)	0.15	0.25	0.3	0.2	0.1

The expectation of the variable X is

A. 1.60
B. 1.00
C. 1.85
D. 1.20
E. 1.50

5. Which of the following is **NOT** an example of probability random sampling?

A. Cluster
B. Stratified
C. Multistage
D. Systematic
E. Judgement

6. Efficiency of a test-statistic can be measured in terms of

A. Precision
B. Standard error
C. Critical value
D. Variance
E. Coefficient of variation

7. The prices of commodities are given in the table below

Commodity	A	B	C	D
Price in 2009 (in Cedis)	30	36	25	40
Price in 2010 (in Cedis)	25	45	50	35

Compute the simple aggregate price index of the commodities using 2009 as the base year

A. 100.0
B. 118.3
C. 84.5
D. 120.5
E. 95.3

8. The following pieces of information are obtained for a particular item. The Laspeyre's index is 115 and the Fisher's index is 118.2. Find the Paasche's index

A. 135.9
B. 121.5
C. 116.6
D. 100.0
E. 95.5

9. The following are the factors which determine the choice between primary and secondary data **EXCEPT**

A. Direct observation
B. The purpose of the enquiry
C. Time required for the exercise
D. Funds at the disposal of investigation
E. Nature of statistical investigation

10. Observations taken over a period of time often contains the following characteristics **EXCEPT**

A. A long- term trend
B. Secular trend
C. Moving average method
D. Seasonal fluctuations
E. Residual variations

11. Which of the following statements is true about uncorrelated variables?

A. No relationship exists between them
B. Partial relationship exists between them
C. Perfect relationship exists between them
D. Inverse relationship exists between them
E. Positive relationship exists between them

12. Given the regression line of y on x as $y = 17 - 3.6x$.The value of regression coefficient is

A. 17
B. 3.6
C. -3.6
D. 13.4
E. 20.6

13. Determine the present value of a property valued ₦8 million at 15% interest over 4 years.

A. ₦20 million
B. ₦3.33 million
C. ₦5 million
D. ₦1.6 million
E. ₦13.33 million

14. The abbreviation IRR stands for

A. Intermediate Return Rate
B. Internal Rate of Return
C. Internal Return Rate
D. Intermediate Rate of Return
E. Interval Return and Ratio

15. An investment proposal has an initial investment of ₦10,000. It generates the following net cash inflows:

Period	1	2	3
Cash inflow	3000	3000	5000

Find the PV of the cash inflows if the interest rate is 20 percent

A. ₦7176.80
B. ₦7276.85
C. ₦7376.85
D. ₦7477.85
E. ₦7476.85

16. What is the value of x when the function $3x^2 + 2x - 2$ is minimum?

A. $\frac{1}{3}$
B. $-\frac{1}{3}$
C. -3
D. 3
E. $-\frac{1}{2}$

17. If the marginal revenue function $y = 6x^5$, find the total revenue.

A. $3x^4 + C$
B. $6x^4 + C$
C. $x^6 + C$
D. $6x^6 + C$
E. $5x^5 + C$

18. According to survey conducted between 2001 and 2010, the population of registered candidates for a professional examination annually can be approximated by the equation $y = 0.015x^2 - 20x + 0.625$ (where x is the year and y is the approximate candidates' population),in thousands taking the initial year to be 1 then the approximate population for the year 2015 is

A. 328,380
B. 328,300
C. 328,370
D. 329,000
E. 328,375

19. The price of an item is 250 Cedis. If the total overhead costs is 3500 Cedis and variable cost per unit is 80 Cedis, then the total profit realizable from the sales of 1201 units of the item is

A. 15,650 Cedis
B. 15,900 Cedis
C. 16,850 Cedis
D. 16,900 Cedis
E. 15,250 Cedis

20. The cost and revenue functions of OLAOLU investment can be described by $C(x) = 1000 + 25x$ and $R(x) = 225x$ respectively where x is the number of items produced and sold. Then loss is incurred if x is

A. Greater than 5
B. Less than 5
C. Equal to 5
D. Greater than 4
E. Less than 4

21. Total cost simply refers to

A. Ordering cost plus holding cost
B. Ordering cost minus holding cost
C. Ordering cost minus carrying cost
D. Holding cost minus ordering cost
E. Holding cost minus carrying cost

22. Given that D = total annual demand,
N_o =optimum number of units per period

C_1 =unit price of the item

C_2 = ordering cost

C_3 = unit inventory carrying cost per year

C_4 = unit penalty cost of back ordering per year.

The carrying cost is given by

A. $\dfrac{\sqrt{DC_3}}{2C_2}$

B. $\dfrac{DC_3}{2N_O}$

C. $\sqrt{\dfrac{DC_3}{2N_O}}$

D. $\sqrt{\dfrac{DC_3}{2C_2}}$

E. $\dfrac{DC_3}{\sqrt{2C_2}}$

23. Problems to be solved by Linear Programming must conform with the following **EXCEPT** that

A. All variables involved must have linear relationship
B. A choice of alternative actions must be possible
C. There must be one or more restrictions on available resources
D. The problem must be expressible numerically
E. Decision variables must not be more than two

24. The RIM condition in Transportation problem

A. Is the addition of dummy to destination of source
B. Means that the total demand equals total supply
C. Means that the shipment to a dummy source represents surplus
D. Dummy must be introduced all the time
E. Means absence of dummy

25. A way of improving the initial basic feasible solution of a transportation problem is known as

A. Feasible test
B. Optimality test
C. Initial test
D. Basic test
E. Duality test

26. Find the expected time if the optimistic time, most likely time and pessimistic time for an activity are respectively given as 10 days, 12 days and 15 days

A. 11.17

B. 11.16
C. 12.16
D. 12.17
E. 12.18

27. Which of the following statements is true

A. Networks have one start event and one end event
B. Networks have more than one start event and more than one end event
C. Networks have no start event and one end event
D. Networks have two start events and three end events
E. Networks have two start events and two end events

28. The following are the decisions of replacement **EXCEPT**

A. Whether to replace by the same item
B. Whether to replace by a better designed item
C. Whether to replace a better design by deteriorated old item
D. Whether to replace now the expensive item which has deteriorated
E. Whether to wait for certain item to fail which might cause some loss

29. Which of the following is **NOT** a basic feature of the transportation problem?

A. It is an iterative process
B. It starts with an initial basic feasible solution
C. A test is made for the cost reduction at each stage
D. Optimum is reached when no further cost reductions are possible
E. It gives a feasible solution at each stage

30. Degeneracy occurs when the number of all allocations turns out to be

A. Equal to the number of rows plus number of columns minus one
B. Less than number of rows minus number of columns plus one
C. Greater than the number of rows plus number of columns minus one
D. Less than the number of rows plus number of columns minus one
E. Greater than the number of rows minus number of columns plus one

SECTION A
PART II – SHORT ANSWER QUESTIONS (20 MARKS)

Write the answer that best completes each of the following questions/statements.

1. The method of least squares is a method of fitting a..................... equation by ....the sum of squares of the deviations of the estimated regression values from the observed values of the series

2. An experiment or action whose outcomes cannot be predetermined is called a ....

3. In the construction of an ogive, the vertical axis represents the................

4. The measure of normality or symmetry of a data set is called the ....

5. A hypothesis in which the parameter under study is well specified is called...........

6. The prices of an accounting software in 2005 and 2006 were ₦15,000 and ₦20,000 respectively. The price relative index using 2005 as the base year is ....

7. The technique of rounding off a number so that some digits are affected to make the number clearer and more understandable is........................

8. A simple relationship between the Spearman's coefficient of rank correlation (r), the differences in the corresponding pairs of ranks (d) and the total number of rankings (n) is given by.........................

9. Integration of the marginal cost function gives the........................

10. The difference between the present value of a revenue flow and original cost is called......................

11. Consumers' .... arises when consumers pay less than what they are willing to pay.

12. The initial amount invested or borrowed for a given period of time is called.....................

13. The weekly cost of manufacturing set of furniture's is given as $C(x) = 220x + 4500$ (where x is in Cedis), then the fixed cost and the unit cost are....................and ....respectively.

14. If the dual problem of a Linear Programming is maximization, then the primal problem is.............................

15. A network system that is developed and used in planning and control of projects is referred to as................

16. The time expressed in days, weeks or months which elapse between ordering and eventual delivery is known as..................

17. The model in which one or all of the factors is/are not known with certainty is called................

18. The type of model most frequently used in Operation Research is a.... model.

19. Vogel's approximation method (VAM) was originally developed to produce a ....

20. Using Least Cost Method (LCM), the value of b in the table below is..........

Origin	Destination			Supply
	A	B	C	
I	$\boxed{2}$	b $\boxed{1}$	$\boxed{3}$	60
II	$\boxed{3}$	$\boxed{4}$	$\boxed{2}$	40
Demand	20	30	50	100

SECTION B- Attempt Any Four Questions Out Of Which At Least One Must COME From Each Sub-Section (50 Marks)

STATISTICS

QUESTION 1

The teaching abilities of Basic Accounting and Economics Lecturers are to be measured by considering the marks obtained in the two subjects by a set of students considered to be the top ten in the class. The figures below are the marks obtained in each of the subjects:

Basic Accounting	70	68	70	67	66	67	68	71	70	68
Economics	70	70	69	68	68	70	69	68	70	68

You are required to:

a. Calculate the co-efficient of variations of the **TWO** sets of data. (10 Marks)

b. Interprete your answer in (a) above (2½ Marks)

(TOTAL 12½ Marks)

QUESTION 2

The table below shows the price per unit (p) and the quantities (q) of some essential food commodities for two consecutive years.

Year / Commodity	2009		2010	
	Price(₦'00)	quantity(kg)	Price(₦'00)	quantity(kg)
Yam	4	6	5	5
Rice	8	10	7	12
Beans	10	5	12	9
Fish	5	3	6	5
Meat	6	4	8	6

You are required to calculate:

a. Laspeyre's price index (5 Marks)

b. Paasche's price index (5 Marks)

c. Fisher's price index (2½ Marks)

(TOTAL 12½ Marks)

BUSINESS MATHEMATICS

QUESTION 3

ADLAG (Nig.) Ltd spent ₦1.7m in setting up its manufacturing company. The production cost of each item from the company is ₦275 while each item is sold for ₦37,300.

You are required to calculate the:

a. cost of manufacturing 100 items ($4\frac{1}{2}$ Marks)

b. profit on every 100 items manufactured ($2\frac{1}{2}$ Marks)

c. break-even quantity (3 Marks)

d. number of items to be manufactured if a profit of ₦17.2 is to be realized ($2\frac{1}{2}$ Marks)

(TOTAL $12\frac{1}{2}$ Marks)

QUESTION 4

a. An investor deposits 3500 Cedis in a commercial bank. Each payment is made at the end of the year. If the payments deposited earn 10% interest compounded annually, how much amount will be received at the end of 15 years?

($6\frac{1}{2}$ Marks)

b. The quarterly profit (₦ '000) declared by a transportation company for four consecutive years 2006, 2007, 2008 and 2009 are as given in the table below.

Year	1	2	3	4
2006	48	28	60	84
2007	56	32	72	96
2008	60	40	76	100
2009	68	44	76	108

The management of the company plans to project to the future. To this end, the commercial manager was mandated to advise the company on what steps to take. The commercial manager therefore, directed the statistical organ of his department to compute the trend of the time series using the 4-period moving average.

(6 Marks)

(TOTAL $12\frac{1}{2}$ Marks)

OPERATIONS RESEARCH

QUESTION 5

GODSOWN supermarket sells 5000 units of a particular item per month. The cost of placing an order is ₦200 and holding cost is ₦5 per item per annum while the cost of shortage of an item is ₦8 per annum.

Required:

a. Calculate the Economic Batch Quantity or Economic Order Quantity when

(i) stock-outs are not allowed ($3\frac{1}{2}$ Marks)

(ii) stock-outs are allowed (3 Marks)

b. Compare the annual holding costs for the two cases. (6 Marks)

(TOTAL $12\frac{1}{2}$ Marks)

QUESTION 6

A production company has four warehouses where items produced are kept. It has to meet customers' requests for supply at four locations I, II, III and IV.

Warehouse	Number of items available
A	550
B	400
C	650
D	200
Location/Customer	Number of items demanded
I	250
II	600
III	500
IV	450

Table of transportation cost (₦) per item from each warehouse to different location is shown as

Warehouse	Location/ Customer			
	I	II	III	IV
A	22	20	21	17
B	18	19	18	16
C	20	21	19	22
D	21	18	15	17

You are required to:

a. Use Vogel's Approximation Method to find the Least Cost solution ($9\frac{1}{2}$ Marks)

b. Obtain the Least Cost. (3 Marks)

(TOTAL $12\frac{1}{2}$ **Marks)**

SECTION A
PART I MULTIPLE-CHOICE QUESTIONS

1. C
2. D
3. E
4. C
5. A or B or C
6. B
7. B
8. B
9. A
10. C
11. A
12. C
13. C
14. B
15. E
16. B
17. C
18. E
19. D
20. B
21. A
22. B
23. E
24. C
25. B
26. D
27. A
28. C

29. E

30. D

Workings

2. $\dfrac{n}{\sum \frac{1}{x_i}} = \dfrac{5}{\frac{1}{8}+\frac{1}{5}+\frac{1}{3}+\frac{1}{10}+\frac{1}{2}}$

$= 4.\ 255$

3. $S^2 = \dfrac{\sum x^2}{n} - \left(\dfrac{\sum x}{n}\right)^2$

$= \dfrac{8^2+5^2+10^2+12^2+15^2}{5} - \left(\dfrac{8+5+10+12+15}{5}\right)^2$

$= \dfrac{558}{5} - (10)^2$

= 11.60 (E)

4. $E(x) = 0(0.15) + 1(0.25) + 2(0.3) + 3(0.2) + 4(0.1) = 1.85$

7. Simple Aggregate Price Index is $\dfrac{\sum p_n}{\sum p_0}$ x 100

$= \dfrac{25+45+50+35}{30+36+25+40}$ x 100

= 118.3%

8. Fisher's Index $= \sqrt{LI\ x\ PI}$

$= \dfrac{FI^2}{LI}$

$= \dfrac{118.2^2}{115} = 121..5$

13. $P = \dfrac{A_n}{1+rn} = \dfrac{8m}{1+4(0.15)} = \dfrac{8m}{1.6} = N5m$

15. $PV = \dfrac{A_i}{(1+r)^n}$

$$= \frac{3000}{(1+0.2)^1} + \frac{3000}{(1+0.2)^2} + \frac{5000}{(1+0.2)^3}$$

$= ₦7476.85$

16. Let $y = 3x^2 + 2x - 2$

$$\frac{dy}{dx} = 6x + 2$$

$$for \text{ min} imum \frac{dy}{dx} = 0 \ i.e \ 6x + 2 = 0$$

$$x = \frac{-1}{3}$$

17. Total revenue $= \int 6x^5 dx$

$= x^6 + c$

18. $y = 0.015x^2 - 20x + 625$

in 2015, $x = 15$

$$y = 0.015(15^2) - 300 + 625$$
$$= 328.375$$
$$i.e \ 328{,}375$$

19. Profit $= TR - TC \ (let\ x\ units\ be\ produced\ and\ sold)$

$$TR = 250x$$
$$TC = 80x + 3500$$
$$\text{Pr}ofit = 250x - (80x + 3500)$$
$$= 170x - 3500$$
$$When\ x = 120, \ \text{Pr}ofit = 170(120) - 3500$$
$$= ¢\ 16{,}900$$

20. Loss occurs when

$$R(x) - C(x) < 0$$
$$225x - 1000 - 25x < 0$$
$$200x < 1000$$
$$x < 5$$

26. $t_e = \frac{1}{6}(a + 4m + b)$

$$=\frac{1}{6}\left(10+4(12)+15\right)$$

$$=12.17$$

Basic Accounting

EXAMINERS' COMMENT

The questions cover all aspects of the syllabus proportionally according to the weightings. No question is outside the syllabus and none is ambiguous. The options given for each question are reasonable.

PART II SHORT-ANSWER QUESTIONS - SOLUTIONS

1. Regression /Trend, minimizing
2. Random experiment
3. Cumulative frequency
4. Skewness
5. Simple hypothesis
6. 133.33%
7. Approximation
8. $r=1-\frac{6\sum d^2}{n\left(n^2-1\right)}$
9. Total cost function/Total cost
10. Net present value
11. Surplus
12. Principal
13. ⊄ 4,500, ⊄ 220 (in that order)
14. Minimization
15. Project Evaluation and Review Technique (PERT)
16. Lead time or procurement time
17. Stochastic/Probalistic model
18. Mathematical
19. Starting or Basic solution

20. 30

Workings

6. Price relative index $= \frac{P_n}{P_0} \times 100$

$$= \frac{20000}{12000} \text{x} 100$$

$$= 133.33\%$$

20.

Origin	Destination			Supply
	A	B	C	
I	$\boxed{3}$ 20	$\boxed{1}$ 30	$\boxed{3}$ 10	60
II	$\boxed{3}$	$\boxed{4}$	$\boxed{2}$ 40	40
Demand	20	30	50	100

EXAMINERS' COMMENT

The questions are of good standard and cover all aspects of the syllabus taking the weightings into consideration. Requirements of each question are very clear.

SECTION B

SOLUTION TO QUESTION 1

Basic Accounting (x_1)

(x_1)	$(x_1 - \bar{x})^2$
70	2.25
68	0.25
70	2.25
67	2.25
66	6.25
67	2.25
68	0.25
71	6.25
70	2.25
68	0.25
685	24.5

$$\bar{X}_1 = \frac{685}{10} = \underline{\underline{68.5}}$$

Variance $S_1^2 = \dfrac{\sum(x_1 - \bar{x})^2}{n}$

$$= \frac{24.5}{10}$$

$$=2.45$$

$$S_1 = 1.57$$

$$\therefore C.V(x_1) = \frac{S_1}{\bar{X}_1} \times \frac{100}{1}$$

$$= \frac{1.57}{68.5} \times \frac{100}{1}$$

$$= 2.27\%$$

Economics (x_2)

x_2	$(x_2 - \bar{x}_2)^2$
70	1
70	1
69	0
68	1
68	1
70	1
69	0
68	1
70	1
68	1
690	8

$$\bar{X}_2 = \frac{690}{10} = \underline{\underline{69}}$$

$$S_2^2 = \frac{\sum (x_2 - \bar{x}_2)^2}{n}$$

$$= \frac{8}{10} \quad 0.8$$

$$S_2 = 0.89$$

$$CV(X_2) = \frac{S_2}{\bar{X}_2} \times \frac{100}{1}$$

$$= \frac{0.89}{69} \times 100$$

$$= 1.29\%$$

Economics lecturer performs better than the Basic Accounting lecturer because the marks of the students in Economics has a lower coefficient of variation than those of Basic Accounting.

ALITER
Basic Accounting

X_1	X_1^2
70	4900
68	4624
70	4900
67	4489
66	4356
67	4489
68	4624
71	5041
70	4900
685	46,947

$$\overline{X}_1 = \frac{685}{10} = 68.5$$

$$S_1^2 = \frac{\sum x_1^2}{n_1} - \left(\frac{\sum x_1}{n_1}\right)^2$$

$$= \frac{46{,}947}{10} - (68.5)^2$$

$$= 2.45$$

$$\therefore S_1 = 1.57$$

$$\text{CV } (X_1) = \frac{S_1}{\overline{X}_1} \times \frac{100}{1}$$

$$= \frac{1.57}{68.5} \times \frac{100}{1}$$

$$= \underline{\underline{2.27\%}}$$

Economics

X_2	X_2^2
70	4900
70	4900
69	4761
68	4624
68	4624
70	4900
69	4761
68	4624
690	47,618

$$\overline{X}_2 = \frac{690}{10} = 69.0$$

$$\mathbf{S}_2^2 = \frac{\sum X_2}{10} - \left(\frac{\sum x_2}{n_2}\right)^2$$

$$= \frac{47618}{10} - (69)^2$$

$$= 0.8$$

$$\therefore S_2 = 0.89$$

$$\mathbf{CV}(x_2) = \frac{S_2}{\overline{X}_2} X \frac{100}{1}$$

$$= \underline{\underline{1.29\%}}$$

EXAMINERS' COMMENT

The question tested the candidates' knowledge in the calculation and interpretation of coefficient of variation. About 70% of the candidates attempted it. Most of the candidates could not interpret the coefficient of variation correctly. The performance was good as about 75% scored 8 out of 12½ marks.

Economics lecturer performs better than the Basic Accounting lecture because the mark of the students in Economics has a lower coefficient of variation than those of Basic Accounting.

SOLUTION 2

Commodity	p_0	q_0	p_1	q_1	p_0q_0	p_1q_0	p_0q_1	p_1q_1
Yam	4	6	5	5	24	30	20	25
Rice	8	10	7	12	80	70	96	84
Beans	10	5	12	9	50	60	90	108
Fish	5	3	6	5	15	18	25	30
Meat	6	4	8	6	24	32	36	48
					193	210	267	295

(a) Lasperyer's Price Index = $\frac{\sum p_1 q_0}{\sum p_0 q_0} X \frac{100}{1}$

$= \frac{210}{193} X 100$

$\underline{\underline{108.81\%}}$ (1)

(b) Peasche's Price Index = $\frac{\sum p_1 q_0}{\sum p_0} X \frac{100}{1}$

$= \frac{295}{267} X \frac{100}{1}$

$= \underline{\underline{110.49\%}}$

(c) Fisher's Price Index = $\sqrt{\left(\frac{\sum p_1 q_0}{\sum p_0 q_1}\right)\left(\frac{\sum p_1 q_1}{\sum p_0 q_1}\right)}$ x 100

$= \sqrt{P^L \times P^p}$

$= \sqrt{(108.81)(110.49)}$

$= \underline{\underline{109.65\%}}$

EXAMINERS' COMMENT

The question was on the familiar weighted indices-Laspeyres, Paasche and Fisher. As expected, about 85% of the candidates attempted the question and it was the most popular. The performance was good. Most of the pitfalls included omission of % in the final answer. Some candidates even used ₦ as the unit of index number

SOLUTION 3

It is assumed that all the items manufactured are sold. Then, the cost function

(a) $\mathrm{C}(x) = N1700000 + N275x$

Where x is the number of items produced and sold.

Revenue is

$\mathrm{R}(x)$=₦37.300 x

The cost of manufacturing 100 items is

$C(x = 1700000 + 275x)$

Where $x = 100$

$\Rightarrow C(x) = 1700000 + 27500$

$= ₦1,727,500$

(b) Profit is $P(x) = R(x) - C(x)$ (½)

$= 37300\,x - 1700000 - 275x$

$= 37025x - 1700000$

$When \quad x = 100$

$\therefore P(x) = 37025x - 1700000$

$3702500 - 1700000$

₦2,002,500

(c) Break-even quantity occurs when

$P(x) = 0$

Or $R(x) = C(x)$

$\therefore 37025x - 1700000 = 0$

$$\Rightarrow \quad x = \frac{1700000}{37025} = 45.9149$$

$= 46$

(d) If Profit $P(x)$=₦17.2, then

$17.2 = 37025x - 1700000$

$\therefore 37025x = 1700017.2$

$$or \quad x = \frac{1700017.2}{37025}$$

$\Rightarrow x = 45.915$

Since the number of items cannot be decimal, and approximation here is rounding up then $x = 46$

EXAMINERS' COMMENT

The question tested candidates' knowledge on application of revenue, cost, profit functions and breakeven to business.

About 45% of the candidates attempted the question and most of them could not obtain the profit function. Only about 15% scored 8 and above out of 12½ marks. This percentage also represented those who were able to obtain the correct breakeven quantity.

SOLUTION 4(a)

Terminal value of annuity is

$$A = P\left[\frac{(1+i)^n - 1}{i}\right]$$

$$Here, P = ⊄ 3500$$
$$n = 15\,years$$
$$i = \frac{10}{100} = 0.1$$

$$\therefore A = 3500\left[\left(\frac{(1+0.1)^{15} - 1}{0.1}\right)\right]$$

$$= 3500\frac{\left((1.1)^{15} - 1\right)}{0.1}$$

$$= ⊄ 3500(31.7725)$$

$$= ⊄ 111{,}203.69$$

4(b)

Y	4Q-moving Total	2-4Qmoving Total	4-period moving Average
48			
28	220		
60	228	448	56.0
84	232	460	57.5
56	244	476	59.5
32	256	500	62.5
72	260	516	64.5
96	268	528	66.0
60	272	540	67.5
40	276	548	68.5
76	284	560	70.0
100	288	572	71.5
68	288	576	72.0
44	296	584	73.0
76			
108			

EXAMINERS' COMMENT

a. The question was on annuity. Candidates' performance was very poor. Most of the candidates used ordinary compound interest instead of annuity. Only about 45% of the candidates attempted the question.

b. This question tested the ability to compute the trend using the moving average method. Candidates did well in this part of the question which accounted for the performance.

Just about 35% scored 6 and above out of 12½ marks in both (a) and (b).

SOLUTION 5

5a (i) EBQ without stock-outs is

$$Q = \sqrt{\frac{2cd}{h}} \quad (1), \qquad d = 5000 \times 12 = 60000$$

$$= \sqrt{\frac{2 \times 200 \times 60000}{5}}$$

$$= 2190.89$$

$$= 2191$$

(ii) EBQ with stock-outs is

$$Q = \left[\sqrt{\frac{2cd}{h}}\right]\left[\sqrt{\frac{h + C_s}{C_s}}\right] \quad \text{Where } C_s \text{ is the cost of stock-out item}$$

$$= (2191)\left(\sqrt{\frac{5+8}{8}}\right)$$

$$= 2792.85$$

$$= 2793$$

(b) Annual holding cost without stock-outs is

$$\frac{Qh}{2} \quad (1)$$

$$= \frac{2191 \times 5}{2}$$

= ₦5,477.50

Annual holding cost with stock-outs is

$$\frac{2793 \times 5}{2}$$

=₦6,982.50

Holding costs when stock-outs are allowed is greater than when stock-outs are not allowed

EXAMINERS' COMMENT

The question was testing candidates' knowledge on inventory control both for no stock-outs and when stock-outs are allowed.

About 45% of the candidates attempted the question and only about 25% scored above average. Most of the candidates could not obtain the results when stock-outs are allowed.

SOLUTION 6

Steps in constructing the tableau

(a) Calculate the penalty for each row/column which is the difference between the two least costs in the row/column.

(b) Choose the row/column with the highest penalty and allocate maximum possible to the least cost in the row/column chosen.

(c) Ignore the row/column in (b) and repeat until all allocations are satisfied.

	I	II	III	IV	Available	Penalty
A	22	20	21	17 450	550	3*
B	18	19	18	16	400	2
C	20	21	19	22	650	1
D	21	18	15	17	200	2
Demand	250	600	500	450		
Penalty	2	1	3	1		

	I	II	III	IV	Available	Penalty
A	22	20	21	450	550	1
B	18	19	18		400	1
C	20	21	19		650	1
D	21	18	15 200		200	3*
Demand	250	600	500	450		
Penalty	2	1	3			

	I	II	III	IV	Available	Penalty
A	22	20		450	550	2
B	18 250	19			400	1
C	20	21			650	1
D	21	18	200		200	3*
Demand	250	600	500	450		
Penalty	2*	1				

Only "one route" remaining so we just "balance up"

ii. The least cost is

$250\times18+10\times20+150\times19+350\times21+300\times19+200\times15+450\times17$

= ₦33,050.00

EXAMINERS' COMMENT

This question tested Vogel's approximation method of allocation in Transportation problem. About 60% of the candidates attempted the question but most of them showed little knowledge of the method. They could not obtain the penalties. Only 10% scored above average.

AT/121/PII.8 **Examination No...................**

ASSOCIATION OF ACCOUNTANCY BODIES IN WEST AFRICA

ACCOUNTING TECHNICIANS SCHEME WEST AFRICA (ATSWA)

PART II EXAMINATIONS – MARCH 2012

INFORMATION TECHNOLOGY

Time Allowed: 3 Hours

Insert your Examination Number in the space provided above

SECTION A (Attempt All Questions)

PART 1 MULTIPLE CHOICE QUESTIONS (30 Marks)

Write ONLY the alphabet (A, B, C, D or E) that corresponds to the correct option in each of the following questions.

1. SSADM has which of the following features?

   I – it describes how a system is to be developed
   II – it reduces development into phases, with each phase reduced into stages. Each stage contains a number of steps which contain tasks, inputs and outputs
   III – it is self checking and can be tailored to a number of applications

   A. I, II and III
   B. II and III
   C. I and II
   D. I only
   E. II only

2. In systems development, the choice of computer hardware will have the following considerations **EXCEPT**

   A. Reliability
   B. Simplicity
   C. Flexibility
   D. Security
   E. Trademark

3. The feasibility study report is normally written by

   A. Programmer
   B. System Analyst
   C. Project Manager
   D. Administrative Officer
   E. Data Processing Manager

4. A comprehensive document describing the system as it is to be produced is known as

   A. System specification
   B. Feasibility study report
   C. Terms of reference
   D. Executive summary
   E. Evaluation report

5. Reasons for using computer service bureau by individuals or organizations include

   I - To obtain the benefit of computer power at a reasonable cost
   II - For use during peak processing periods

III - To use as a stand-by arrangement in case of breakdown of in-house computer
IV - To avoid the financial and administrative implications of owning and operating an in-house computer

A. I, II, III and IV
B. II, III and IV
C. I and II
D. I and IV
E. II and IV

6. Conversion of input into a particular output format based on the editing commands which accompany the input is the primary function of

A. Loader
B. Editor
C. Utility
D. Interpreter
E. Compiler

7. Computer programs can be broadly divided into

I - System software
II - Hardware software
III - Application software

A. I only
B. II only
C. III only
D. I and III
E. I and II

8. The following are example(s) of Disk Operating System (DOS) used on the IBM-PC and compatibles

I - MS-DOS
II - PK-DOS
III - PC-DOS

A. I and II
B. I only
C. II only
D. II and III
E. I and III

9. Which of the following is **NOT** an example of utility programs?

A. Merge routine
B. File sorting
C. File copying

D. File organisation
E. File sourcing

10. The time which elapses between job submission and the return of results in batch processing is known as the ………….. time.

A. Elapses
B. Job around
C. Turn around
D. Submission
E. Return around

11. Communications media such as copper wire, coaxial cables or wireless systems that are used to interconnect the other components of telecommunications network are referred to as..............telecommunications.

A. Software
B. Channels
C. Processors
D. Modem
E. Servers

12. Which of the following is **NOT** true of a star network?

    A. If the central computer fails, there is no back-up processing and communication capability, thus local computers are cut off from each other.
    B. It is less reliable than the ring network since the other computers are heavily dependent on the central host computer
    C. It is essential that the host computer be highly reliable
    D. It links end-use computers together in equal basis
    E. Links end-user computers to a central computer

13. The following are examples of wireless technologies **EXCEPT**

    A. Bluetooth
    B. Infra-red
    C. Fibre optics
    D. Terrestrial microwave
    E. Communication satellites

14. A radio broadcast transmission is an example of…………mode transmission.

    A. Full duplex
    B. Half duplex
    C. Simplex
    D. Serial
    E. Asynchronous

15. Networks that use different communications architecture are interconnected by using

    A. Hub
    B. Protocol
    C. Gateway
    D. Router
    E. MODEM

16. A collection of computer programs that helps you to run other programs and manage other devices on the system is called

    A. Data base
    B. Application software
    C. Operating system
    D. Programming
    E. Multi-tasking

17. Which of the main components of the Central Processing Unit (CPU) is called the work house station of the CPU?

    A. Control unit
    B. Input
    C. Main memory
    D. Arithmetic and logic unit (ALU)
    E. Output

18. A device that accepts data as an input, processes it and produces information on the output unit at a very high speed is known as

A. Information Technology
B. Computer System
C. Internet
D. Computer Network
E. System Software

19. WYSIWYG is acronym for

A. What you see is what you get
B. What you see is what you give
C. What you say is what you get
D. What you say is what you give
E. What you send is what you give

20. Microsoft Windows is an operating system that is

A. Menu driven
B. Graphical user interface
C. Graphical user interface and menu driven
D. Graphical user interface and auto driven
E. Menu driven and user interface

21. Which of the following is **NOT** a computer user interface?

A. Menu driven interface
B. Command driven interface
C. Direct manipulation interface
D. Graphical user interface
E. Mother driven interface

22. The results of processing from the computer processor are sent to

A. Input devices
B. Storage devices
C. Output devices
D. Central processing unit
E. Arithmetic logic unit

23. Application packages can be acquired from the following sources EXCEPT

A. Mail order
B. Dealers (vendors)
C. Over the counter from retail shop
D. Software-houses
E. Supermarket

24. Transformation of key business processes through the use of internet technologies describes

A. E-Commerce
B. E-Business
C. E-Tailing
D. E-Marketing
E. E-Government

25. A collection of computer across the world to communicate through telecommunication links is known as

A. Extranet
B. Intranet
C. Internet
D. World wide web
E. Hyper links

26. A collection of computers used by business organizations to interact with allies or associates across the world through telecommunication links is known as

A. Internet
B. Extranet
C. Intranet
D. WWW
E. Hypertext links

27. A group of protocols that works together to allow software or hardware to perform a function is known as

A. Routers
B. Protocols
C. Protocol stack
D. System protocol
E. System architecture

28. An internal network of an organisation's information network is known as

    A. Internet
    B. Intranet
    C. Extranet
    D. World wide web
    E. Hypertext links

29. The decimal number 89 in base 4 is

    A. 1211
    B. 1121
    C. 1122
    D. 1201
    E. 1021

30. Which of the following items **CANNOT** be used for data and information representation in Analogy form?

    A. Thermometer
    B. Pressure gauge
    C. Voltammeter
    D. Oil
    E. Barometer

SECTION A

PART II- SHORT-ANSWER QUESTIONS (20 Marks)

Write the answers that best completes each of the following questions/statements.

1. The technology that characterized the fourth generation computers is known as ……………….

2. A computer that can count in a discrete variable as well as measure in a continuous variable is described as …………..

3. The smallest type of computer by size is known as…………

4. System development stage that involves finding detailed facts about the system under consideration is known as ……………..

5. Technical description of all the work involved in the process of designing a system is known as …………….

6. A firm that operates to offer computing services to individuals and other firms that require the services but either do not have the facilities needed or just do not find it worthwhile or economically justifiable to do so is known as …………..

7. A graphical user interface and menu driven operating system is described as …………

8. Micro Excel, Lotus 1-2-3, Corel Quattro pro and Work Suite are all examples of …………

9. Application development, database maintenance, interrogation and development can be achieved by the use of …………....

10. Novell Netware, Sun's Solaris and windows 2000 servers are examples of ………

11. In the OSI communications network architecture, the ……….. layer appropriates data transmission formats and codes.

12. Fibre optics is an example of a telecommunication ……………..

13. Input to the loader is usually the output from the …………. during program compilation process.

14. EPROM stands for………………………………………………..

15. Computer programs basically perform repetition of three steps of input, computing, and …………

16. The computer machine can only process data that are in …………… form.

17. A device used in a store to record sales information that can be used by the store's computer system to adjust accounts, inventory and other sales related items is known as ………………..

18. A non-surgical means of examining the human body through a computer display produced from a series of rapidly taken x-rays describes ……………

19. Using a computer to perform tasks in which the computer appears to have human traits is known as …………….

20. CAI is an acronym for …………

SECTION B: ATTEMPT ANY FOUR QUESTIONS (50 MARKS)

QUESTION 1

a. Briefly explain each of the following networking hardware:
   i. Hub
   ii. Switch
   iii. Bridge
   iv. Router
   v. Multiplexor (7½ Marks)

b. Differentiate between Frequency Division Multiplexing (FDM) and Time Division multiplexing (TDM). (5 Marks)

(Total 12½ Marks)

QUESTION 2

a. What is System Implementation. (2½ Marks)

b. Explain **FOUR** different changeover methods employed in systems development. (10 Marks)

(Total 12½ Marks)

QUESTION 3

a. Identify **SIX** stages involved in the development of computer programs. (6 Marks)

b. List **FOUR** qualities of a good programming method. (4 Marks)

c. Give **TWO** features and **ONE** example of a 4^{th} Generation programming language. (2½ Marks)

(Total 12½ Marks)

QUESTION 4

Describe the following Data Processing techniques and give ONE example of each application in a business environment:

a. Distributed Processing
b. Point-of-sale system
c. Multi-tasking
d. Multiprogramming
e. Interactive processing (12½ Marks)

QUESTION 5

a. What is a Browser? (2½ Marks)

b. Office automation refers to a wide variety of computer-based technologies that make office workers productive in their jobs. You are required to explain **FIVE** of these technologies. (10 Marks)

(Total 12½ Marks)

QUESTION 6

a. What is an input device? (2½ Marks)

b. Describe **FIVE** features of a keyboard as an input device. (5 Marks)

c. Identify **FIVE** input devices and their uses by a micro computer. (5 Marks)

(Total 12½ Marks)

SECTION A

PART I MULTIPLE-CHOICE QUESTIONS

1.	A
2.	B
3.	B
4.	A
5.	A
6.	B
7.	D
8.	E
9.	E
10.	C
11.	B
12.	D
13.	C
14.	C
15.	C
16.	C
17.	D
18.	B
19.	A
20.	C
21.	E
22.	C
23.	E
24.	B
25.	C
26.	B
27.	C

28. B

29. B

30. D

EXAMINERS' COMMENT

The thirty questions set in this section were well spread and they cover the entire syllabus. 60% of the candidates scored above 50% of the mark which indicated a good performance.

PART II SHORT-ANSWER QUESTIONS

1. Microchip
2. Hybrid computer
3. Micro computer
4. System investigation
5. Systems documentation
6. Computer bureau
7. (Microsoft) Windows
8. Electronic spreadsheet
9. Database management programs
10. Network operating systems
11. Presentation
12. Media or channel
13. Linkage editor
14. Erasable programmable Read-Only Memory
15. Output
16. Binary or Machine Language
17. Point-of-sale terminal
18. Computer axial tomography
19. Artificial Intelligence or Robotics
20. Computer- Assisted Instruction

EXAMINERS' COMMENT

The twenty questions set in this section were relatively simple and this is reflected in the performance of the candidates as over 50% of the candidates scored above 60% of the mark.

SECTION B

SOLUTION 1

a. i Hub is a common device often used in bus and star topologies as a central location to connect imputing devices to a local network. Communications that go through the hub are broadcasted to all devices on a network.

ii Switch is like a hub, except that it is more "intelligent". Communications that go through a switch go only to designated devices on the network.

iii Bridge is a device that connects two networks such as a LAN to the internet or WAN.

iv. Router: This device connects dissimilar networks, and can be programmed to act as a firewall to filter communications. Router keeps tables of network addresses (IP addresses) that identify each computer on the network along with the best routes to other network addresses.

v. Multiplexor: A multiplexor is a device that pools several data channels along a single channel and also splits a data channel into several channels.

b. In a broad band channel many messages are sent simultaneously at different frequencies. It is the role of the multiplexor to assemble and decompose these. This method is referred to as frequent division multiplexing.
On the other hand, in time division multiplexing, transmission time is being divided between various senders and receivers. In order to do this, a part of sender A's message is being followed with that of B's message and so on.

EXAMINERS' COMMENT

This question tests the candidates' understanding on some computer network terminal processors. The candidates were expected to define and give the functions of these terminal equipments. Less than 25% of the candidates attempted the question and the performance was very poor as less than 20% of the candidates scored above 40% of the mark.

SOLUTION 2

(a) System implementation carries systems development from design to operations. It involves acquisition of software, program testing, file conversion, file set-up, education and training, acquisition and installation of hardware and changeover.

(b) **The Change over methods are.**

i Direct
Ii Parallel
iii Pilot
iv Phased.

i. Direct: The old system is discontinued and the new system becomes operational immediately. This is a very bold approach that should be attempted during slack periods. This method may be adopted if there is a previous success of new system in a similar situation and no basis for comparison by virtue of both systems being substantially different.

ii. Parallel: This method runs both the old and the new systems together for a period of time, both processing current data. Results from both systems are checked for consistency. This method provides a degree of safety but it is expensive in terms of the duplication of efforts and resources used.

iii Pilot: This is cheaper and easier to control than parallel running and provides a greater degree of safety than direct changeover it involves the gradual take-off of parts of a system one-at-a-time before the full systems implementation is carried out. Pilot allows identification of any errors and shortcomings that will be encountered in the system.

iv Phased: This involves the new system being introduced piece by piece. Where a system is composed of different self-contained modules performing different functions, it may be possible to phase in the new system while gradually phasing out the old.

EXAMINERS' COMMENT

This question tests the candidates' understanding of system implementation which is an aspect of System Development Life Cycle (SDLC) technique of system development. It also requires the candidates to explain the four types of changeover techniques. This question was very popular with the students as over 95% of the candidates attempted the question.

The performance of the candidates was very encouraging as over 90% scored over 50% of the mark.

SOLUTION 3

(a) **Stages involved in programming include:**

i) Define the problem or problem definition
ii) Design a method of solution using suitable techniques such as pseudocodes, flow charts, or decision table.
iii) Write the program in a suitable programming language.
iv) Test the sub-programs and the program as a whole
v) Debug (i.e Errors removal)
vi) Document the program
vii) Implementation.

(b) Qualities of a good programming method include:

(i) Readability /user- friendliness: This means the program must be easy to read.
(ii) Writeability : This means the program must be easy to write.
(iii) Maintainability: This means the program must be easy to maintain.
(iv) Portability: This means the program can be transferred from one computer to another with ease.
(v) Documentation i.e Ease of learning: This means the program must be easy to learn even by a novice.
(vi) Modularity : programs must be written in modules or independent subprograms which perform specific functions.
(vii) Power of Data Structure: Ease of data access during implementation.

(c) Features of 4^{th} Generation Languages include:

(i) It is a non-procedural language.
(ii) It uses Natural languages e.g English verbs and statements.
(iii) It is easy to learn and use.
(iv) It contains on-line help facilities for use.
(v) It is suitable for document design works.
(vi) It has high level of abstraction.
(vii) Tends towards object orientation languages

Examples of 4^{th} Generation languages include Query languages (e.g SQL), Virtual BASIC, C+, Report Generator, Application Generator.

EXAMINERS' COMMENT

This question tests the candidates' knowledge on the development and qualities of computer programs. Over 70% of the candidates attempted this question but the performance was very poor as only 30% of those who attempted it scored over 50% of the mark.

The major pitfall was the confusion created by the misreading of the question. The candidates misread the question as the development of computer systems and the qualities of good information.

The candidates are advised to clearly understand the question before attempting to answer it.

SOLUTION 4

(a) Distributed processing consists of a network of mini or micro computers located at remote stations where tasks can be performed independently and reports or summary forwarded, to the central computer for updating. An example is in banking system, to collate banking transactions from all branches of the same bank and forwarded to the Bank headquarters.

(b) Point-of-sale system is used for capturing transaction data as sales occur in supermarkets and departmental stores, it uses special laser scanners at checkout points using price display and commodity description and printed receipt for items bought. Example, tag system in a supermarkets or departmental stores.

(c) Multitasking is a technique which facilitates the running of two or more tasks concurrently on computer systems. Example is printing a document while typing another document.

(d) Multiprogramming is a technique which facilitates the running of two or more programs on computers systems. The operating system facilitates switching between different programs in a concurrent fashion. Examples, a program to calculate interest on sales and another staff payroll.

(e) Interactive processing handles transactions individually in conversational or Real time mode between the user and the computer. The computer also asks for the type of transaction desired, if there are more transactions to process etc. Example is inventory processing system for stock records.

EXAMINERS' COMMENT

This question tests the candidates' understanding of certain essential processing techniques.

About 80% of the candidates attempted the question and the performance was fair as 50% of those who attempted the question scored above 50% of the mark.

The major pitfall was the inability of the candidates to explain the processing techniques satisfactorily.

The candidates are advised to read this important section of the syllabus very well using standard text books.

SOLUTION 5

a A Browser is a computer software that allows access to the internet and use of search facilities on the computer. The browser is normally provided on the PC operating system or by the ISP. Examples of browsers include –Internet Explorer, Firefox Mozilla, Netscape Navigator etc.

b. **Office automation technologies include:**

i Word processing – facilitates the preparation of typed documents.
ii. Electronic mail - allows typed messages to be sent or received electronically.
iii Voice mail - allows spoken messages to be sent or received electronically.

iv Teleconferencing - Electronically brings conference participants together without travelling over distances.
v Telecommuting- Allows employees to perform office work from their homes.
vi Fasimile- Allows any documents to be sent electronically.
vii Computer-Output- On-Microfilm/Microfiche (COM): Stores documents on microfilm for easy retrieval and economy of space.
viii Document Storage and Retrieval: Use of Magnetic discs and optical discs.
ix Document Duplication: Use of photocopiers of various variances.

EXAMINERS' COMMENT

The major pitfall was on the definition of the browser. The candidates defined the browser as a device or a tool instead of a computer program. Many got examples of a browser. Also many candidates understood e-office technologies as either Internet, Extranet or Intranet.

Electronic office concept is an important aspect of the syllabus under Modern Trend and the candidates are advised to get more familiar.

SOLUTION 6

(a) **Input Device**

An input device is an electronic device that is used to transmit data/information into the computer system.

An input device is either direct or indirect. Examples of direct input devices are keyboard and VDU, Mouse, Scanner. Examples of indirect input device include punched card, tag etc.

(b) Features of a keyboard as an input device include:

i. It is a text-based input device that is used to input alphabets, integers and other characters, as follows:

ii. Function keys are labeled F1, F2, F3, …..F12. Functions assigned to these keys differ from one software package to another.

iii. It has keys for natural languages alphabets including both upper and lower cases.

iv. It has separate Numeric keys 0-9 for fast figure insertion.

v. It has special character keys like +, -,*, etc

vi. It has other special keys(called command keys) like ENTER, SPACE BAR, BACK SPACE, DELETE, INSERT, SHIFT, CAPS LOCK, TAB, CTRL, ALT, ESC, Cursor movement (i.e arrow keys) etc.

(c) **Input Devices and their use by micro-computers:**

i. Mouse: A small device used to point to a particular icon on the screen and select in order to perform an action.

ii. Joystick: A vertical stick which moves the graphic cursor in a direction the stick is moved.

iii. Track Ball: While a mouse employs a rolling ball on its underside, a track ball uses an exposed ball that the user manipulates with fingers. Like the mouse, it is used to move the cursor on the display screen. It does not require a horizontal pad on which to move.

iv. Touch screen: This allows the user to operate or make selections by imply touching the display screen. Modern handheld computers and tablet computers using touch screens (i. PDA)

v. Scanners: An input device used for direct data entry from the source documents into the computer system. This converts the document, picture, images into digital form so that they can be fed into the computer.

vi Magnetic Ink Character Reader (MICR) – This is a method of data entry used in the banking system to process cheques. Each cheque has identifying information printed in Magnetic ink.

vii Bar Code Reader- This is a special type of scanner that is used to input data from bar codes. A bar code is a set of lines of different sizes. Most products in retail shops or supermarkets have bar codes on them.

viii Optical Mark Reader (OMR) : This is an input device that recognizes lead pencil marks which are inserted in special sections of the source document.

ix Optical Character Reader (OCR): This is an input device that recognizes special character written in special fonts. These characters are not written in ink made of ferro-magnetic substances as we have in MICR.

x Sales Tags /Security tags: Sales tags are used in POS to record prices and description of items sold. Security tags are used to guarantee passes at security doors.

xi Key-to-disk/Key-to-Floppy: This allows data to be stored o large disk realms which are later sent to mainframes or munis.

xii Web-Cam: This is a Camera –device inbuilt into the computer system to allow the picture of the user to be taken and transmitted on-line to another user during the process of (Video) chatting.

EXAMINERS' COMMENT

This question tests the candidates' knowledge on Computer Input devices and the features of the Computer keyboard.

All the candidates attempted this question and the performance is highly encouraging as over 75% of the candidates scored above 50% of the mark.