

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 REQUIRED IN EACH PAPER; AND
- B) BY ATTEMPTING MORE QUESTIONS THAN REQUIRED 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.

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.

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⎌ **NOTE** ⎌
Although these suggested solutions have been published
under the Institute's name, they do not represent the
views of the Council of the Institute. They are entirely the
responsibility of their authors and the Institute will not
enter into any correspondence about them.

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INSIGHT

AT/141/PII.5

**ASSOCIATION OF ACCOUNTANCY BODIES IN WEST AFRICA
ACCOUNTING TECHNICIANS SCHEME
PART II EXAMINATION - MARCH 2014
PRINCIPLES & PRACTICE OF FINANCIAL ACCOUNTING**

Time Allowed: 3 Hours

Section A: PART I ATTEMPT ALL QUESTIONS (30 Marks)

MULTIPLE-CHOICE QUESTIONS

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

1. At the end of the financial year, the credit ledger balance in the subscriptions account of a social club will be reflected in the statement of financial position as
 - A. Subscriptions carried forward
 - B. Subscriptions in arrears
 - C. Subscriptions in advance
 - D. Subscriptions accrued
 - E. Subscriptions written off as bad
2. Value Added Tax/Goods and Services Tax is administered in your Country by
 - A. Revenue Authority
 - B. Ministry of Finance
 - C. Internal Revenue Board
 - D. Value Added Tax Board
 - E. Federal Inland Revenue Service
3. The estimated sales proceeds of an asset less the anticipated costs to sell is the
 - A. Sales proceeds value
 - B. Economic realization value
 - C. Anticipated value
 - D. Net realizable value
 - E. Estimated value

4. Maximum Enterprises lost all its stock to fire, but was able to ascertain the following

	₦
Opening stock	24,000
Purchases	180,000
Sales	240,000
Gross profit is 33⅓% on cost of goods sold	

Calculate the stock lost to fire

- A. ~~₦~~24,000
B. ~~₦~~26,000
C. ~~₦~~28,000
D. ~~₦~~30,000
E. ~~₦~~32,000
5. A plant has an estimated useful life span of 5 years. What proportion of the asset value will be written off in Year 3 as depreciation using the sum-of-the-years digit method?
- A. $\frac{1}{4}$
B. $\frac{1}{5}$
C. $\frac{2}{3}$
D. $\frac{3}{5}$
E. $\frac{4}{5}$
6. IAS 8 covers the following **EXCEPT**, where an entity
- A. Is selecting and applying accounting policies
B. Is accounting for changes in accounting policies
C. Has changes in accounting estimates
D. Has correction of prior-period errors
E. Is carrying out revaluation of non-current assets
7. A complete set of financial statements under International Financial Reporting Standards (IFRS) is made up of the following **EXCEPT**
- A. Statement of changes in equity
B. Statement of financial position

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- C. Statement of cash flows
 - D. Statement of corporate governance
 - E. Notes to the financial statements
8. Which of the following items is **NOT** included in the statement of Comprehensive Income?
- A. The effects of correction of prior-period errors
 - B. Income gain or losses from discontinued operations
 - C. Income gain or losses arising from extraordinary items
 - D. Adjustment resulting from changes in accounting estimates
 - E. Adjustments resulting in impairment losses
9. If a company makes a voluntary change in accounting policies. IAS 8 requires that the company should disclose the
- A. Carrying amount of all its assets
 - B. Old policy as explanatory notes
 - C. Reason or reasons why the new policy provides reliable and more relevant information
 - D. Materiality of the voluntary change and its effects on profit, net assets and liabilities
 - E. Adjustments made in statement of changes in equity and value added statements
10. Providing for bad debts when preparing financial statements is an example of
- A. Changes in accounting policies
 - B. Accounting estimates
 - C. Prior-period adjustments
 - D. Correction of accounting errors
 - E. Disclosure of extra-ordinary item
11. The accounting entries required to introduce goodwill into partnership books are
- A. Debit goodwill account
Credit partners' capital account
 - B. Debit goodwill account
Credit revaluation account

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- C. Debit partners' capital accounts
Credit realization account
- D. Debit realization account
Credit goodwill account
- E. Credit realization account
Debit goodwill account
12. Kofi and Annan are partners sharing profits or losses in ratio 3:2. Kwame was admitted and granted $\frac{1}{5}$ of the share of profits. What is the new profit sharing ratio of Kofi, Annan and Kwame respectively?
- A. 50%: 30%: 20%
- B. 50%: 32%: 18%
- C. 48%: 30%: 22%
- D. 48%: 32%: 20%
- E. 46.7%: 33.3%: 20%

Use the following information to answer question 13

The capital accounts of partners in Agbabu & Co. firm of Solicitors after the dissolution of partnership is given below

Partners' Capital Account

	Obi ₦	Okoko ₦		Obi ₦	Okoko ₦
Realisation account	34,800	21,000	Bal b/d	80,000	18,300
Bal c/d	<u>45,200</u>	<u>-</u>	Bal c/d	<u>-</u>	<u>2,700</u>
	<u>80,000</u>	<u>21,000</u>		<u>80,000</u>	<u>21,000</u>

All assets were realized, liabilities were settled and balances in realization account shared and transferred to capital accounts of partners. None of the partners is insolvent

13. Which of the following statements can be deduced from the accounts?
- i. Amount due to Okoko is ₦2,700
- ii. Amount due from Okoko is ₦2,700
- iii. The cash balance is ₦42,500

- A. i only
- B. ii only
- C. i and iii
- D. ii and iii
- E. iii only

Use the following information to answer questions 14 and 15

	1/1/2013	31/12/2013
	GH¢	GH¢
Subscriptions received in advance	300,000	380,000
Subscriptions due not yet received	230,000	180,000
Insurance prepaid	-	84,000

Subscriptions received during the year amounted to GH¢600,000

14. Calculate the subscriptions credited to income and expenditure account during year 2013.
- A. GH¢646,000
 - B. GH¢610,000
 - C. GH¢564,000
 - D. GH¢200,000
 - E. GH¢470,000
15. The total current assets as at 31 December 2013 is
- A. GH¢480,000
 - B. GH¢264,000
 - C. GH¢420,000
 - D. GH¢380,000
 - E. GH¢236,000
16. A company's income statement for the year ended December 31, 2013 showed a net profit of ₦6,500,000. It was later found that ₦1,800,000 paid for maintenance of motor vehicles had been debited to the motor vehicles at cost and had been depreciated as if it was a new motor vehicle.

If it is the company's policy to depreciate motor vehicles at 25% per year on straight line basis with a full year charge in the year of acquisition, what would be the net profit after adjusting for this error?

- A. ~~₦~~1,625,000
- B. ~~₦~~4,700,000
- C. ~~₦~~5,150,000
- D. ~~₦~~7,850,000
- E. ~~₦~~8,300,000

17. A business has opening payables of Le 75,000 and closing payables of Le 65,000 and received a discount of Le 3,000. Cash paid to suppliers was Le 65,000.

What is the figure for purchases?

- A. Le 52,000
- B. Le 55,000
- C. Le 58,000
- D. Le 72,000
- E. Le 78,000

18. Given a selling price of a product at ~~₦~~175,000 and a gross profit mark-up of 40%. Calculate the cost price

- A. ~~₦~~50,000
- B. ~~₦~~70,000
- C. ~~₦~~105,000
- D. ~~₦~~125,000
- E. ~~₦~~150,000

19. The formula for calculating Quick Asset Ratio is

- A. Current Assets – Current Liabilities
- B. Current Assets + Current Liabilities
- C. Current Assets – Stocks ÷ Current Liabilities
- D. Current Assets + Stocks – Current Liabilities
- E. Total Assets + Total Liabilities

20. Based on IAS 16, in which of the financial statements is surplus on revaluation of non-current assets recorded?
- A. Income Statement
 - B. Statement of financial position
 - C. Statement of changes in equity
 - D. Statement of cash flows
 - E. Value Added statement
21. The minimum amount of royalty payable by a lessee irrespective of the level of activity or utilization is called
- A. Dead rent
 - B. Economic rent
 - C. Utility rent
 - D. Activity rent
 - E. Maximum rent
22. A *del-credre* commission paid by a consignor to its consignee is to ensure that
- A. The consignee sells large volume of goods
 - B. The credit customers are allowed some discount by the consignees
 - C. The consignee pays the consignor for all debts due from credit customer
 - D. The consignee sells large volume on credit
 - E. The consignee would take insurance cover against the theft on the goods

Use the following information to answer questions 23 and 24

A head office sent goods at cost plus mark-up of 25% to the branch. The invoice price of the goods was ₦289,200. During the period the branch returned ₦10,000 worth of these goods to the head office.

23. How much should be credited to goods sent to branch account during the period?
- A. ₦211,360
 - B. ₦216,900
 - C. ₦231,360
 - D. ₦273,360
 - E. ₦223,360

INSIGHT

24. In which account and at what amount should the goods returned to head office by branch be credited?
- | | | |
|----|----------------------------------|---------|
| A. | Branch inventory control account | ₦10,000 |
| B. | Goods sent to branch account | ₦10,000 |
| C. | Branch inventory control account | ₦8,000 |
| D. | Goods sent to branch account | ₦8,000 |
| E. | Branch adjustments account | ₦2,000 |
25. The accounting entries necessary to record and write-off lapsed short workings in the books of the lessee are
- A. Debit short workings receivable account:
Credit income statement account
 - B. Debit short workings allowable account:
Credit short working receivable account
 - C. Debit short workings allowable account:
Credit income statement account
 - D. Debit short workings allowable account:
Credit short workings irrecoupable account
 - E. Debit Income statement account:
Credit short workings receivable account
26. One of the following is **NOT** an item meant for the receipts and payments account of a not-for-profit organization
- A. Payment for stationery
 - B. Accrued rent on premises
 - C. Annual subscription received
 - D. Payment for new motor vehicle
 - E. Donation receivable by cheque
27. In preparing the bar account of Agodi Social Club, the understated value of opening stock will
- A. Overstate the cost of goods purchased
 - B. Understate the liability of goods sold
 - C. Understate the cost of unsold goods
 - D. Understate the cost of goods sold
 - E. Overstate the cost of goods sold

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28. When subscription in arrears at the end of the year is omitted from the subscription account, the effect will
- A. Understate the income and understate the liability
 - B. Overstate the income and understate the surplus
 - C. Understate the liability and overstate the surplus
 - D. Understate the liability and understate the income
 - E. Understate the income and understate the surplus
29. Which of the following will **NOT** result in the dissolution of a partnership business?
- A. When a partner dies
 - B. When a partner is insane
 - C. When partners are intolerable of each other
 - D. When a partner retires
 - E. When a partner is handicapped
30. Which of the following in a profit making organization is equivalent to accumulated funds in not-for-profit organization?
- A. Capital
 - B. Net assets
 - C. Net profit
 - D. Net surplus
 - E. Gross profit

SHORT-ANSWER QUESTIONS

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

1. The incidence of VAT/GST is borne by
2. What is the gross profit on sales worth ~~₦~~400,000, if the gross profit is 25% on cost of goods sold?
3. State the main purpose of preparing income and expenditure accounts of a not-for-profit organization.
4. State the depreciation method which is based on the passage of time.
5. State **TWO** methods of inventory valuation recognized under IAS 2 an
6. The systematic expensing of the original cost of natural resources over time is called depletion while the systematic expensing of the original cost of intangible assets over time is referred to as.....
7. On 1 January 2013 Go-Go Limited acquired production equipment at the cost of ~~₦~~500,000. Further costs incurred include delivery ~~₦~~36,000, installation ~~₦~~49,000, general administration cost of an indirect nature ~~₦~~6,000. The equipment has an estimated life of 15 years and residual value of ~~₦~~36,000.

What is the cost of the equipment to be disclosed in statement of financial position?
8. The composition of equity in a statement of financial position includes and
9. State **ONE** basic item that is deducted from net profit to arrive at the divisible profit in partnership accounts.
10. What is the double entry for the share of loss in partnership accounts?
11. What would give rise to a partner's capital account being debited with assets at agreed price?
12. What is the accounting concept guiding the carrying forward of subscription received in advance by a social club?
13. Under IFRS, profit and loss account is also referred to as.....

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14. The amount of capital stipulated in the Memorandum of Association/Articles of Incorporation of a company is known as.....
15. The excess of total assets over current liabilities is equal to
16. Accumulated and undistributed profits of a company is regarded as in the statement of financial position.
17. In a royalty arrangement, when the lessee leases part of the lease to another person, it is called.....
18. In a sale or return contract, goods yet to be returned before the expiration of the approval date shall be valued at the
19. State the double entry for the short working recouped by the lessee in the book of the lessor.
20. Some goods sent by a consignor to a consignee got lost in transit. The consignor had insurance cover for loss of the goods. State the double entry required for the transaction immediately after the loss.

SECTION B

ATTEMPT ANY FOUR QUESTIONS

(50 Marks)

QUESTION 1

1. The trial balance of Sharon Enterprises as at December 31, 2013 is as follows:

	Dr	Dr
	₦	₦
Inventory	30,600	
Revenue		245,340
Purchases	160,200	
Salaries & wages	52,110	
Furniture & fittings	92,500	
Office expenses	16,200	
Trade receivable & payables	50,400	22,400
Cash and bank	6,230	
Drawings	15,500	
Capital		<u>156,000</u>
	<u>423,740</u>	<u>423,740</u>

Additional information:

- i. Inventory December 31, 2013 ~~₦~~38,000
- ii. Prepaid office expenses ~~₦~~2,300
- iii. Accrued wages ~~₦~~1,500
- iv. Provision for depreciation of furniture & fittings 10% on cost

You are required to prepare the extended trial balance to include: original trial balance, adjustments and adjusted trial balance. (Total 12½ Marks)

QUESTION 2

- a. In accordance with IAS 16 on Property, Plant and Equipment, define the following terms.
- i. Cost
 - ii. Residual value of an asset
 - iii. Depreciation (6 Marks)
- b. On January 1, 2013 Kokobelow Plc acquired a 200KVA generator at the cost of ~~₦~~125million and the vendor gave a trade discount of 2% on cost.

Other costs incurred on the generator are as follows:

	₦'000
Site preparation expenses	2,000
Delivery	9,000
Installation	5,000
General administration costs	1,500

The installation and setting up period took three months and an additional ~~₦~~6,500,000 was spent on cost directly relating to bringing the generator to its working condition.

The generator was ready for use on April 1, 2013 and it has an estimated useful life of 15 years and a residual value of ~~₦~~1,500,000. It was also estimated that the generator would be dismantled at a cost of ~~₦~~1,250,000 after the end of the useful life.

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You are required to:

- i. Calculate the cost of the generator to be included in the non-current asset schedule of the statement of financial position as at December 31, 2013.
(3 Marks)
 - ii. The depreciation charge to be included in statement of profit or loss assuming Koko below uses straight line method.
(3½ Marks)
- (Total 12½ Marks)**

QUESTION 3

Koku and Nkuru have been in partnership for many years sharing profits and losses equally. On June 30, 2013, they admitted Mensah who contributed GH¢6.5million cash. The profit and loss sharing ratio were adjusted to 2:3:1 for Koku, Nkuru and Mensah respectively.

The statement of financial position of the partnership as at 30 June 2013 is as follows:

	GH¢'000	GH¢'000
Non-current Assets:		
Freehold property		14,250
Plant and equipment		5,700
Motor vehicles		4,275
Current Assets:		
Inventories	3,990	
Receivables	3,420	
Bank and cash	<u>21,375</u>	
	28,785	
Accounts payable	<u>(13,455)</u>	
		<u>15,330</u>
		<u>39,555</u>
Capital Accounts:		
Koku		14,400
Nkuru		14,400
Current Accounts:		
Koku		4,755
Nkuru		<u>6,000</u>
		<u>39,555</u>

Notes:

Assets were revalued as follows:

	GH¢'000
Freehold property	28,500
Plant and machinery	4,275
Motor vehicles	3,420

- i. Goodwill of GH¢4.5m was introduced
- ii. Provision for doubtful debts was to be made at 5% of receivables. Payables agreed to receive GH¢12 million in full settlements.
- iii. The receivable settled their accounts while the payables were settled
- iv. Goodwill was not to be retained in the books

You are required to:

- a. Prepare the revaluation account
 - b. Prepare the cash account
 - c. Prepare the partners' capital account
 - d. Prepare the statement of financial position as at July 1, 2013 after the admission of Mensah.
- (Total 12½ Marks)**

QUESTION 4

Ratio analysis is one of the ways of analysing financial statements, but has some limitations.

State and explain briefly any **FIVE** limitations of ratio analysis.

(Total 12½ Marks)

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QUESTION 5

Gashikah Farming Enterprises has recorded the following transactions in its books of account during the year ended December 31, 2013.

	₦
Staff cost	750,000
Purchases:	
Feeds for animals	1,087,125
Fertilizer	765,915
Seedling	250,000
Insecticide	150,000
Sales:	
Livestock	3,328,390
Farm produce	1,827,975
Miscellaneous income	410,875
Fuel and oil for farm machinery	162,075
Marketing cost	105,500
Repairs	52,570
Insurance	77,100
Hire of tractors	100,875
Bad debt	175,000
Depreciation for the year:	
Farm house	89,000
Livestock	126,625
Farm machinery	160,740
Other operating expenses	292,175

You are required to:

Prepare a statement to show the profit earned by the Enterprise for the year ended December 31, 2013. **(Total 12½ Marks)**

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QUESTION 6

The Financial Secretary of Igbadun Lawa Club has prepared the following receipts and payments account for the year ended December 31, 2013.

Receipts	₦	Payments	₦
Balance b/d 1/1/2013	58,500	Bar purchases	64,800
Subscription	675,900	Wages	471,000
Net dances	75,090	Rent	130,500
Bar sales	244,350	New equipment	273,000
Disposal of equipment	5,100	Travelling	28,500

Additional relevant information:

- i. Bar stock was valued: 31/12/12 – ~~₦~~10,200, 31/12/13 ~~₦~~13,800. There was nothing owed for bar purchases on either of these dates.
- ii. On January 1, 2013 the club equipment was valued at ~~₦~~486,000. Included in this figure was an equipment valued at ~~₦~~6,300 which was sold during the year for ~~₦~~5,100.
- iii. The amount to be charged for depreciation of equipment for the year is ~~₦~~78,800.
- iv. Subscription owed by members at December 31, 2012 was nil. At December 31, 2013, subscription owed by members amounted to ~~₦~~12,900.
- v. Wages of ~~₦~~70,200 is to be charged to the bar trading account.

You are required to prepare the:

- a. Bar trading account for the year ended December 31, 2013.
- b. Income and expenditure account (in vertical form) for the year ended December 31, 2013. (Total 12½ Marks)

SUGGESTED SOLUTIONS

SECTION A

PART I MULTIPLE-CHOICE QUESTIONS

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

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23. E
24. A
25. E
26. B
27. D
28. E
29. E
30. A

TUTORIAL

4.		N
	Sales	240,000
	Gross Profit (25% x N240,000)	<u>60,000</u>
		180,000
	Purchases + Opening Stock	<u>204,000</u>
		<u>24,000</u>

$33\frac{1}{3}\%$ on cost of goods sold is 25% on sales

5.	Year	1	2	3	4	5
	Digit	5	4	3	2	1

Sum digit = 15

Year 3 = $\frac{3}{15} = \frac{1}{5}$

12.	Total ratio	100%	
	To Kwame	<u>20%</u>	
	Balance	<u>80%</u>	
	Kofi's share $\frac{3}{5} \times 80\%$	=	48%
	Annan's share $\frac{2}{5} \times 80\%$	=	32%

14.	Subscriptions received in advance b/f	300,000
	Add: subscription received during the period	600,000
	Subscription due not received c/f	<u>180,000</u>
		<u>1,080,000</u>

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	Subscription due not received b/f	230,000	
	Subscription received due not received c/f	380,000	<u>610,000</u>
			<u>470,000</u>
15.	Current Assets		
	Subscription at 31 December received	180,000	
	Insurance prepaid	<u>84,000</u>	
			<u>236,000</u>
16.	Net profit per the statement	6,500,000	
	Add: Depreciation charges (¥ 1,800,000)	450,000	
	Less: maintenance	<u>(1,800,000)</u>	
			<u>5,150,000</u>
17.			Le
	Bank	65,000	
	Discount payable	3,000	
	Closing payable	<u>65,000</u>	
		133,000	
	Less: Opening payable	<u>75,000</u>	
			<u>58,000</u>
18.	$175,000 \div 140 \times 100 =$	¥ 125,000	
23.	125%	=	289,200
	Less returns	=	<u>10,000</u>
			279,200
	Goods sent to branch A/C		
	$\frac{279,200}{125} \times \frac{100}{1}$		
		=	<u>¥223,600</u>

EXAMINER'S COMMENT

The questions 1-30 that cover all aspects of the syllabus were attempted by all candidates. About 75% of them displayed good understanding of the questions and in effect scored above average marks

PART II: SHORT-ANSWER QUESTIONS

1. Final consumer of goods
2. ₦80,000
3. To ascertain surplus or deficit
4. Straight line or Equal installments
5. (i) First in first out method
(ii) Average cost method
6. Amortization
7. ₦585, 000
8. Paid up Ordinary Share Capital and Reserves
9. Partners salaries or Interest on Capital
10. Debit: Current account of partners
Credit: Statement of Distribution of Profit or Appropriation of Profit
11. When a partner takes over an asset
12. Matching concept
13. Income statement on statement of profit or loss and other comprehensive income.
14. Authorized share capital
15. Net Assets
16. Reserves
17. Sub-letting/sub-leasing
18. Lower of cost and Net realizable value
19. Debit: Short working allowable account
Credit: Lessee account

20. Debit: The insurance claim account
Credit: Goods – On consignment account

EXAMINER'S COMMENT

The questions 1-20 were attempted by all candidates. Above 55% of them performed well and recorded above average marks

SOLUTION 1

SHARON ENTERPRISES

	Original Trial Balance	Adjustments	Adjusted Trial Balance
	Dr. Cr.	Dr. Cr.	Dr. Cr.
Inventory	30,600		30,600
Sales			245,340
Purchases	160,200	38,000	122,200
Salaries & wages	52,110	1,500	53,610
Furniture & Fittgs	92,500		92,500
Trade Receivable	50,400		50,400
Trade Payables			22,400
Cash & Bank	6,230		6,230
Drawings	15,500		15,500
Capital			156,000
Office Expenses	16,200	2,300	13,900
Inventory- 31 dec.		38,000	38,000
Provision for depreciation:			
Furniture & Fittings		9,250	9,250
Depreciation A/C		9,250	9,250
Prepayment:office Expenses		2,300	2,300
Accrued wages		1,500	1,500
	423,740 423,740	51,050 51,050	434,490 434,490

EXAMINER'S COMMENT

The question that tests candidates' knowledge on extended trial balance was attempted by about 90% of the candidates. About 20% of them lacked understanding of principles tested in the question. In effect, about 20% of the candidates scored above average.

SOLUTION 2

a. (i) **COST:-**

Is the amount of cash and cash equivalent paid or the fair value of any other consideration given to acquire an asset at the time of its acquisition or construction?

(ii) **RESIDUAL VALUE OF AN ASSET:-**

Is the estimated amount that an entity would currently obtain from disposal of an asset, after deducting the estimated costs of disposal (assuming the assets is already of age and in condition expected at the end of its useful life). If the intent is to scrap an asset, it will have no residual value.

(iii) **DEPRECIATION:-**

Is the systematic allocation of the depreciable amount of an asset over its useful life

b. (i) **COST OF GENERATOR TO BE INCLUDED IN NON-CURRENT ASSETS
SCHEDULE OF THE STATEMENT OF FINANCIAL POSITION**

	₦'000	₦'000
Cost of purchase	125,000	
Discount @ 2%	<u>(2,500)</u>	122,500
Site preparation		2,000
Expenses		
Delivery Expenses		9,000
Installation		5,000
Other Installation cost		6,500
Dismantling cost		<u>1,250</u>
		<u>146,250</u>

(ii) **DEPRECIATION TO BE INCLUDED IN STATEMENT OF PROFIT OR LOSS**

	₦'000
Cost	146,250
Less:	
Estimated residual amount	<u>(1,500)</u>
	<u>44,750</u>

Depreciation to be charged for year 2013

$$= \frac{144,750}{15} \times \frac{9}{12} = \text{₦}7,237,500$$

EXAMINER'S COMMENT

The question which tests candidates' knowledge of IAS 16 on Property, Plant and Equipment was attempted by about 60% of the candidates. 90% of those who attempted it failed to recognize the dismantling cost as part of the cost of the machine. 45% of the candidates scored average marks

SOLUTION 3

IN THE BOOKS OF KOKU, NKURU AND MENSAH

a) REVALUATION ACCOUNT

	GHC'000		GHC'000
Freehold property	14,250	Freehold property	28,500
Plant and equipment	5,700	Plant and equipment	4,275
Motor vehicles	4,275	Motor vehicles	3,420
Doubtful debts provision		Disc received	
		(13,455 – 12,000)	1,455
(5% x 3,420)	171		
Revaluation profit			
Capital accounts			
Koku (½)	6,627		
Nkuru (½)	<u>6,627</u>		
	<u>37,650</u>		<u>37,650</u>

b) CASH ACCOUNT

	GHC'000		GHC'000
Bank and Cash	21,375	Accounts payables	12,000
Accounts receivables	3,249	Balance c/d	19,124
Capital – Mensah	<u>6,500</u>		
	<u>31,124</u>		
Balance b/d	19,124		<u>31,124</u>

INSIGHT

c) **PARTNERS' CAPITAL ACCOUNT**

	Koku	Nkuru	Mesah		Koku	Nkuru	Mensah
	GHC	GHC	GHC		GHC	GHC	GHC
	'000	'000	'000		'000	'000	'000
Good will w/o	1,500	2,250	750	Balance b/f	14,400	14,400	-
Balance c/d	21,777	21,027	5,750	Reval. Profit	6,627	6,627	-
				Goodwill intro	2,250	2,250	-
				Cash introd.			6,500
	23,277	23,277	6,500		23,277	23,277	6,500
				Balance c/d	21,777	21,777	5,750

d) **KOKU, NKURU AND MENSAH STATEMENT OF FINANCIAL POSITION AS JULY 1ST 2013**

NON-CURRENT ASSETS	GHC '000	GHC'000	GHC'000
Freehold property			28,500
Plant and equipment			4,275
Motor vehicles			3,420
CURRENT ASSETS			
Inventories		3,990	
Bank and Cash		19,124	
			<u>23,114</u>
TOTAL ASSETS			<u>59,309</u>
CAPITAL AND CURRENT			
Capital Accounts – Koku			21,777
- Nkuru			21,027
- Mensah			5,750
			48,554
Current Accounts – Koku	4,755		
- Nkuru	6,000		
-			<u>10,755</u>
-			<u>59,309</u>

(a) Alternative Solution
KOKU, NKURU and MENSAH

3. Revaluation Account

CHC'000		CHC'000	
Plant & equipment	1425	Freehold property	14,250
Motor Vehicle	855	Discount receivable	1,455
Receivables	171		
5% x 3420			
Share of surplus			
Koku ½ 6627			
Nkuru ½ 6627	<u>13254</u>		
	<u>15,705</u>		<u>15,705</u>

EXAMINER'S COMMENT

The question that tests the candidates' knowledge of admission of a new partner in partnership accounts was attempted by about 75% of the candidates. Good understanding of the question was put up in their answers, hence about 50% scored above average marks.

SOLUTION 4

LIMITATIONS OF RATIO ANALYSIS

The main limitations of the usefulness of ratio analysis are as follows

1. Unless ratios are calculated in a uniform manner, from uniform data comparisons can be very misleading.
2. The accounting periods covered by the financial statements may not reflect representative of financial positions. Many businesses produce financial statements to a date on which these are relatively low amounts of trading activities. If a trade is seasonal, the items in the statement of financial position may not be representative of values throughout the accounting period.
3. Financial statements themselves have limitations e.g. they contain arbitrary estimates and figures which are based on personal decisions.

INSIGHT

4. The application of accounting policies in the preparation of financial statements must be understood when attempting to interpret financial ratios.
5. The effect of inflation: The problem of interpreting data in a period of changing prices can only be catered for if prior year(s) figures are adjusted in constant values.
6. A few simple ratios do not provide an automatic means of running a company. Business problems usually involve complex patterns which cannot be solved by the use of ratio.
7. Ratio must not be used as the sole test of efficiency. Concentration of ratio may inhibit the incentive to grow and expand to the detriment of the long-term interests of the company.
8. The earning power of a business may well be affected by factors which are not reflected in the financial statements. Thus these do not necessarily represent a complete picture of a business, but only a collection of these parts which can be translated into money terms e.g. the size of the order book and the existence of a highly trained work force are normally ignored in financial statements

EXAMINER'S COMMENT

The question on ratio analysis was attempted by about 20% of the candidates. The candidates displayed poor understanding of the limitations of ratio analysis, hence the performance was poor.

SOLUTION 5**GASHKAH FARMING ENTERPRISES****STATEMENT SHOWING THE PROFIT EARNED FOR THE YEAR ENDED DECEMBER 31ST 2013**

	₦	₦
Sales – Livestock		3,328,390
Farm produce		<u>1,827,975</u>
		5,156,365
Purchases – Feeds for animals	1,087,125	
Fertilizer	765,915	
Seeding	250,000	
Insecticide	<u>150,000</u>	<u>(2,253,040)</u>
Gross profit		2,903,325
Miscellaneous income		<u>410,875</u>
		3,314,200
Indirect Costs:		
Staff cost	750,000	
Fuel and oil for farm machinery	162,075	
Marketing cost	105,500	
Repairs	77,100	
Insurance	100,875	
Hire of tractors	175,000	
Bad debts	89,000	
Depreciation –Farm house	126,625	
Livestock	160,740	
Farm machinery	<u>292,175</u>	
Other operating expenses		<u>(2,091,660)</u>
Net profit		<u>1,222,540</u>

EXAMINER'S COMMENT

The question on farmer's account was attempted by about 70% of the candidates and good understanding of the question was displayed by the candidates and very good performance was recorded.

SOLUTION 6

a) Bar Trading Account for the year ended 31 December, 2013

	R	R
Bar Sales		244,350
Opening Stock	10,200	
Bar Purchase	<u>64,800</u>	
	75,000	
Less closing stock	<u>13,800</u>	
		<u>61,200</u>
		183,150
Wages		<u>70,200</u>
Net surplus		<u>112,950</u>

b) Income and Expenditure Account for the year ended 31 December, 2013

	R	R
Income		
Subscriptions	688,800	
Bar Net surplus	112,950	
Net Dances	<u>75,090</u>	
		876,840
Expenditure:		
Wages (R471,000 - R70,200)	400,800	
Rent	130,500	
Loss on Disposal of Equipment: (R6,300 - R5,100)	1,200	
Travelling	28,500	
Depreciation of Equipment	<u>78,800</u>	<u>639,800</u>
Surplus		<u>237,040</u>

EXAMINER'S COMMENT

The question on Income and Expenditure account was attempted by about 90% of the candidates. About 60% understood the requirements of the question and scored above average marks.

AT/141/PII.6

**ASSOCIATION OF ACCOUNTANCY BODIES IN WEST AFRICA
ACCOUNTING TECHNICIANS SCHEME
PART II EXAMINATION- MARCH 2014**

PUBLIC SECTOR ACCOUNTING

Time Allowed: 3 hours

SECTION A: PART I

ATTEMPT ALL QUESTIONS

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/statements:

1. The collection of public institutions established and given the authority to run the affairs of a Country is known as
 - A. The Civil Service
 - B. The Government
 - C. The Private Sector Organisation
 - D. The Ombudsman
 - E. The Political Parties
2. Which **ONE** of the following is **NOT** an objective of Government Accounting?
 - A. To open foreign accounts for all the members of the legislature
 - B. To fulfill legal requirements
 - C. To perform stewardship function
 - D. To enable Government to plan well the future activities and programmes of the Nation
 - E. To provide a process of controlling the use of the financial and other resources
3. The 1999 Constitution of the Federal Republic of Nigeria formally recognizes the need for separation of powers. This is carried out by the introduction of the system of
 - A. Federal Character
 - B. Catchment Area
 - C. Area of Land mass
 - D. Checks and balances
 - E. Population census

4. The functions of the Fiscal Responsibility Act, 2007 include the following **EXCEPT**
- A. Monitor and enforce the provisions of the Act and hence promote the economic objectives contained in Section 16 of the Constitution.
 - B. Disseminate such standard practices that will result in greater efficiency of the allocation and management of public expenditure, revenue allocation, debt control and transparency in fiscal matters
 - C. Undertake fiscal and financial studies, analysis and diagnosis and disseminate the result to the general public
 - D. Superintend the implementation of the policies of the Commission
 - E. Make rules for carrying out its functions under this Act
5. The Public Procurement Act, was enacted to deal with the following **EXCEPT**
- A. Arbitrary awards of contracts without due regard to budgetary appropriations
 - B. Poor costing of projects
 - C. Abuse of payment of mobilization fees
 - D. Alleged cases of corruption
 - E. Actual prices of services rendered and goods supplied
6. All but **ONE** of the following are the functions of Bureau for Public Procurement (BPP)/National Procurement Authority
- A. Regulatory
 - B. Monitoring
 - C. Certification
 - D. Training & Public Enlightenment
 - E. Procurement
7. With effect from 1998, the Accounting officers of Ministries are
- A. Directors of Finance and Accounts
 - B. Chief Accountants
 - C. Commissioner for Finance
 - D. The officer controlling votes
 - E. Permanent Secretaries

8. In line with Section 84 of the 1999 Constitution of the Federal Republic of Nigeria, the following officers' remuneration and allowances are directly charged to the Consolidated Revenue Fund, **EXCEPT** those of the
- A. Chief Justice of Nigeria
 - B. President
 - C. Inspector-General of Police
 - D. President and Judge of the Customary Court of Appeal
 - E. Auditor-General for the Federation
9. Which of the following is **NOT** a function of the Director-General of Budget Office?
- A. Monitoring of revenue generation and collection of government revenue
 - B. Reconciliation of actual revenue from oil and non-oil sectors and their comparison with estimated revenue.
 - C. To make report in the performance of budget and assess the impact of the budget on the economy.
 - D. Collection and analysis of expenditure returns
 - E. To prepare annual estimates of revenue and expenditure for the Federal Government
10. Which **ONE** of the following arms of Government carries out monetary and fiscal policies as a means of control over Government Expenditure
- A. The Judiciary
 - B. The Legislature
 - C. The Ministry of Finance
 - D. The Accountant General of the Federation
 - E. The House of Representatives
11. In Public Sector Accounting, the Authority to write-off the arrears of revenue is vested on the:
- A. Director of Finance and Accounts
 - B. Auditor-General for the Federation
 - C. The Senate President
 - D. Minister of Finance
 - E. Accountant-General of the Federation

12. Authority/Warrant issued pending the approval of Appropriation Act in the beginning of the year is called
- A. Supplementary General Warrant
 - B. Provisional General Warrant
 - C. Virement Warrant
 - D. Annual General Warrant
 - E. Financial Regulation
13. A Memo issued by the Accountant General of the Federation, addressed to the Accounting Officers, demanding that the budget/estimate be submitted at a particular time is
- A. Internal memo
 - B. Executive order
 - C. Call circular
 - D. Legislative approval
 - E. Appropriation Bill
14. Which of the following is **NOT** a budget terminology?
- A. Line-by-Line Budget
 - B. Periodic Budgeting
 - C. Capital Budget
 - D. Perspective Budget
 - E. Base Estimate
15. The continuous updating of short term plan by adding, say a further month, a quarter or a year and deducting the earliest month, quarter or year, so that the plan can reflect current conditions is referred to as.
- A. Committed Growth
 - B. Updated Estimate
 - C. Yearly Plan
 - D. Revised Estimate
 - E. Rolling Plan

16. The document used by the Department at the end of each financial year to eradicate the problem of ghost workers in the Public Sector is known as
- A. Group Register
 - B. Personal Emolument Card
 - C. Staff Salary Payslip
 - D. Personal Emolument form
 - E. Variation Control Sheet
17. A substitute voucher prepared to cover any voucher which is to be paid outside the central pay office is what?
- A. Cheque/Cash Order Form
 - B. Payment Voucher
 - C. Receipt Voucher
 - D. Adjustment Voucher
 - E. General Order Form
18. Variation Advice is issued when
- A. Contractors are not paid
 - B. Borrowing money from Bank
 - C. An Officer is newly employed
 - D. An Officer is going on annual leave
 - E. A Ministry owes another Ministry
19. Which of the following is **NOT** a Stock Valuation method in Government Accounting?
- A. Weighted Average
 - B. Last-in-First-Out
 - C. First-in-First-Out
 - D. Simple Average
 - E. Specific Identification
20. Which **ONE** of the underlisted cannot be regarded as a function of a storekeeper?
- A. Preparation of store ledger
 - B. Proper arrangement of the store
 - C. Preparation of stores issue Voucher

- D. Proper cleanliness of the store
 - E. Preparation of stores receipt voucher
21. Which **ONE** from the underlisted Voucher is **NOT** used in Government Store?
- A. Store ledger
 - B. Store Survey sheet
 - C. Store Issue Voucher
 - D. Store Register book
 - E. Tally card
22. The contents of Board of Enquiry's Report shall include all the following **EXCEPT**
- A. A Statement on the exact amount of loss incurred
 - B. An opinion as to whether the operation of the accounting system was faulty
 - C. Recommendation not to surcharge the officer suspected to be responsible for the loss
 - D. Recommendation for improving the physical security measures if inadequate
 - E. Recommendation to apportion blames for the loss in whole or part
23. The responsibility for the preparation of financial statements of the federation is vested in the
- A. Auditor-General for the Federation
 - B. Revenue Collector
 - C. Cashier
 - D. Chief Accountant
 - E. Accountant-General of the Federation
24. According to Financial Regulation No: 109 of year 2009, the function of the Auditor-General for the Federation of Nigeria include:
- i. Ensuring that funds are utilized as approved by the National Assembly
 - ii. Value-for-Money Audit
 - iii. Audit of the Accountant-General's yearly financial statement
- A. i only
 - B. ii only
 - C. i, ii, and iii
 - D. i and ii
 - E. ii and iii

25. With reference to International Public Sector Accounting Standard (IPSAS), LEASES are treated under
- A. IPSAS 11
 - B. IPSAS 10
 - C. IPSAS 9
 - D. IPSAS 13
 - E. IPSAS 8
26. The Account which is maintained for each employee by Pension Fund Administrator is called
- A. Pension Fund Account
 - B. Retirement Contribution Account
 - C. Retirement Saving Account
 - D. Retirement Custodian Account
 - E. Retirement Investment Account
27. All Pension Schemes existing before the commencement of Pension Reform Act shall submit to the Pension commission a statement called
- A. Bank Statement
 - B. Investment statement
 - C. Profit and Loss Statement
 - D. Statement of Affairs
 - E. Source and Application of Fund Statement
28. A Pension Fund Administrator shall **NOT** invest in any security issued by
- A. Pension Fund Administrator, Custodian or Shareholder or Employee of Fund Administrator or Custodian
 - B. Government fund, treasury bill or bond
 - C. Debenture, redeemable preference share or other debt instrument
 - D. Bank deposit and securities
 - E. Real Estate Investment
29. Which **ONE** of the following bodies has a part-time Chairman, who also is **NOT** a Civil Servant?
- A. Fiscal Responsibility Commission
 - B. The National Council on Public Procurement
 - C. The Code of Conduct Bureau
 - D. The Economic and Financial Crimes Commission (EFCC)
 - E. The Securities and Exchange Commission (SEC)

30. The Money Laundering Prohibition Act, 2011, puts a limit on the amount of direct cash payment to a corporate body, **EXCEPT** through a Financial Institution to a sum of
- A. ₦500,000
 - B. ₦1,000,000
 - C. ₦2,000,000
 - D. ₦1,500,000
 - E. ₦3,000,000

SECTION A: PART II

ATTEMPT ALL QUESTIONS

(20 Marks)

SHORT-ANSWER QUESTIONS

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

1. State the name of the body that advises the President on how national receipts should be shared between the Federal, States and Local Governments.
2. The period required after the close of each financial year for the Accountant-General of the Federation to submit the Accounts of the Federation to the Auditor General is.....months
3. The Public Procurement Act, 2007, Section 35 fixes the mobilization fees payable to a supplier or contractor at not more than %
4. The deliberate manipulation of the extent and timing of taxes and revenue by the government to achieve certain economic objective is called.....
5. The role of Chief Executive and Accounting Officers of the Local Government include signing of Vouchers and Cheques. **True/False**
6. The Accountant-General exercises control over the funds released by demanding
7. Who issues receipts and license books?
8. To ensure effective operation of bank accounts, there is the need to carry out periodic.....
9. Cost Receipt Analysis (CRA) is **ONE** of the most reliable techniques for evaluatingproject.
10. To control aggregate demand and reduce inflationary pressure in the Country, Government can apply budget.

INSIGHT

11. IPSAS 1 on Presentation of Financial Statements stipulates the way monthly transcripts should be prepared and also dealt with events after the Balance Sheet date. **True/False**
12. Document opened at the beginning of every financial year for each serving officer is called.....
13. Issues from stores should be supported on the evidence of.....
14. The Officers that ensure that goods ordered are received according to specifications and recorded in the store ledger appropriately are called.....
15. Mention **ONE** case where the appointment of a Board of Enquiry is not necessary
16. Which IPSA treats Related Party disclosures
17. A summary of total receipts and payments as posted in the cash book of a self-accounting unit is known as.....
18. A Pension Fund Administrator shall **NOT** employ any person whose name is on the list of maintained by the Commission unless otherwise approved by the Commission.
19. Pension Fund and Asset in the custody of a Pension Fund Custodian should be managed by exclusive order of the.....
20. The ICPC Act, 2000 states that an acceptor or giver of gratification shall on conviction suffer a penalty of imprisonment for..... years.

SECTION B:

ATTEMPT ANY FOUR QUESTIONS

(50 Marks)

QUESTION 1

Mr. Ade was employed as a clerk in 1975. He rose through the ranks to the post of Chief Accountant in 2004, his total annual income was ₦2,705,300. There was a change in Pension Act providing for contributory Pension. He was promoted to level 15 in 2006 on a salary of ₦3,780,000 per annum and later in 2010 he was promoted to grade level 16 with a salary of ₦3,905.000 per annum which he collected till 31st December 2010 when he retired. The calculated annuity was grossed at 5.25% from 1975 to 2004. The contributory deduction was 15% per annum and the Pension Fund Administrator has a bench mark of 4% annual on saving deposit.

Required:

- i. Calculate the value of bond to be collected from the Pension Commission. (4 Marks)
 - ii. Calculate the total Value of his contribution before retirement in December, 2010. (6 Marks)
 - iii. Calculate the total Value of his terminal benefit. (2½ Marks)
- (Total 12½ Marks)**

QUESTION 2

- a.
 - i. Who are Sub-Accounting officers? List **FOUR** examples of Sub-Accounting officers. (5 Marks)
 - ii. What are **TWO** major functions of Sub-Accounting officers? (2 Marks)
 - b.
 - i. Who is a Revenue Collector? (1 Mark)
 - ii. List any **FIVE** important documents used by a Revenue Collector. (2½ Marks)
 - c.
 - i. Who is an Imprest Holder? (1 Mark)
 - ii. Mention any **TWO** types of Imprest. (1 Mark)
- (Total 12½ Marks)**

QUESTION 3

- a. List the various arms of control over Government Expenditure. (2½ Marks)
 - b. What are the main roles of the National Assembly in Planning and Monitoring of Public Expenditure? (10 Marks)
- (Total 12½ Marks)**

QUESTION 4

- a. List any **EIGHT** key elements of monthly Internal Audit Report. (8 Marks)
 - b. Mention **THREE** objectives of Internal Audit. (4½ Marks)
- (Total 12½ Marks)**

QUESTION 5

The following information relates to receipts and use of materials in the store of BANANGA AYIKO LOCAL GOVERNMENT in the month of September 2012.

Date	Particulars	Dept.	SIV/SRV No	Qty	Price
					₦
01/09/12	Bal b/f			580	
03/09/12	Issues			58	
03/09/12	Issues			160	
09/09/12	Issues			46	
06/09/12	Purchases			400	28
10/09/12	Issues			80	
13/09/12	Issues			120	
16/09/12	Purchases			400	30
18/09/12	Issues			120	
21/09/12	Issues			160	
29/09/12	Issues			80	
30/09/12	Purchases			600	35

Required:

Enter the above information in the Bin card with the appropriate headings and rulings.
(Total 12½ Marks)

QUESTION 6

The Economic and Financial Crimes Commission (EFCC) was established by the Act of Parliament No. 5 of December 2002, charged with the responsibility of investigation and enforcement of all laws against economic and financial crimes in all its ramifications.

Required:

- State any **FIVE** functions of the EFCC. (7½ Marks)
 - List any **FIVE** of the members that constitute the membership of the Commission. (5 Marks)
- (Total 12½ Marks)

SUGGESTED SOLUTION

SECTION A

PART I MULTIPLE-CHOICE QUESTIONS

1. B
2. A
3. D
4. D
5. D
6. E
7. E
8. C
9. D
10. C
11. D (FR 231)
12. B
13. C
14. D
15. E
16. D
17. A
18. C
19. E
20. D
21. D

- 22. B
- 23. E
- 24. C
- 25. E
- 26. C
- 27. D
- 28. A
- 29. C
- 30. E

EXAMINER'S COMMENT

The questions cover the whole sections of the syllabus. The performance was fair as over 60% of the candidates scored above 50% of marks obtainable.

PART II SHORT-ANSWER QUESTIONS

- 1. Revenue Mobilisation, Allocation and Fiscal commission
- 2. 7 months
- 3. 15%
- 4. Discretionary fiscal policy
- 5. False
- 6. Monthly Transcripts/Trial Balance
- 7. Accountant General
- 8. Bank Reconciliation
- 9. Capital Project
- 10. Deficit Budget
- 11. False

INSIGHT

12. Personal Emolument form/card
13. Store Issue Voucher
14. Stock Verifier
15. Loss is Immaterial (2) It is an Isolated case (3) Identity of the officer is indisputable
16. IPSA 20
17. Transcript
18. List of Person that have been dismissed, terminated or advised to retire on the ground of fraud.
19. Pension Fund Administrator
20. 7 year.

EXAMINER'S COMMENT

The questions cover all areas of the syllabus. About 70% of the candidate scored above 50% of marks obtainable.

All the areas of the syllabus were covered. Candidate performance was equally fair as about 55% scoring above 50% of marks obtainable.

SOLUTION 1

- (i) Value of the bond
Salary as at 2004 = ~~N~~2,705,300
Gross Annuity = 525%
Bond = ~~N~~2,705,300 x 5.25
= ~~N~~14,202,825 (4 Marks)
- (ii) His contribution = ~~N~~2,705,300 x 15% x 2 = 811590 x (1.04)⁶
2004 – 2005 = ~~N~~1,026,920.26
- 2006 – 2009 = ~~N~~3,780,000 x 15% x 4 = 2,268,000 x (1.04)⁴
= ~~N~~2,653,239.21
- 1/1/ - 31/12/2010 = ~~N~~3,905,000 x 15% = 585,750
Total = ~~N~~4,265,909.47

(iii) Total Terminal Benefit = ~~N~~14,202,825 + ~~N~~4,265,909.47
= N18,468,734.47

EXAMINER'S COMMENT

The question tests the candidate understanding of the New Pension Scheme (2004), a detailed knowledge of computation of interest on deposits and annuity rate to be applied. About 35% of the candidates attempted this question of which none of them scored up to 40% of marks obtainable.

SOLUTION 2

THE CONSTITUTIONAL AND FINANCIAL RESPONSIBILITIES OF PRINCIPAL OFFICERS OF GOVERNMENT

- 1a) Sub-Accounting Officers:- Is the officer who is entrusted with receipt, custody , and disbursement of Public Money, and who is required to keep the recognized cash book prescribed by the Accountant General. The transaction is subsequently embodied in the final Accounts rendered by the Accountant General.

FOUR EXAMPLES OF SUB-ACCOUNTING OFFICERS

- i. The sub-Treasurer of the Federation
 - ii. The Federal Pay officers in the states
 - iii. The Police Pay officers in the states
 - iv. The Custom Area Pay officers in the states
 - v. The Pension Pay officers in the states
- 2a) Two Major Functions Of Sub Accounting Officer
- i. The custody receipt and disbursement of public money
 - ii. Reporting to the Accountant-General of the Federation
 - iii. Recording of transaction in the Cash Book
- bi. A Revenue Collector:

This is an officer, other than a Sub-Accounting Officer entrusted with official receipts; license or ticket booklets for the regular collection of some particular form of revenue and is required to keep a Cash book.

ii. Five Important documents used by a Revenue Collector are

- i. Revenue Collector's cash book
- ii. Revenue receipt booklets
- iii. Tellers/Paying-in-slips
- iv. Cheque summary register
- v. Paper money register
- vi. Paying In form (T15^A), and Paying Voucher

ci. An Imprest Holder

This is an officer, other than a Sub-Accounting Officer entrusted with the disbursement of public money for which vouchers cannot be presented immediately to a Sub-Accounting Officer for payments. He is a petty Cashier (1 mark)

ii. Two types of Imprest are

Special Imprest
Standing Imprest

EXAMINER'S COMMENT

The question which is divided into three (3) parts tests the candidates' understanding of "Sub-Accounting Officer" Revenue Collector and Imprest Holders. About 98% of the candidates attempted the question and less than 30% of them scored above 40% of marks obtainable. Candidates are implored to prepare better in subsequent examinations.

SOLUTION 3

MANAGING FINANCE OF GOVERNMENT; INSTITUTIONAL BACKGROUNG SUGGESTED SOLUTION TO QUESTION

a.) The following are the various arms of control over government expenditures:

- i. The Executive Control
- ii. The Legislature control
- iii. The Ministry of Finance control
- iv. The Treasury control
- v. The Departmental control

- b.) The main roles of the National Assembly in Planning and Monitoring of Government Expenditure:
- i. Consideration and ultimate approval of the nation's budget
 - ii. Ratification of monetary and fiscal policies adopted by the executives
 - iii. Ratification of the appointment of the Auditor-General
 - iv. Ensuring that money was expended for the purpose for which they were meant for.
 - v. Appointment of Public Account Committee to Consider Auditor General present Annual Report to the
 - vi. Monitoring of the implementation of the budget.
 - vii. Monitoring of the actualization of budget
 - viii. Guide against extra budgeting spending
 - ix. Failure to approve the appropriation act, constitute a vote of no confidence on the incumbent administrator.

EXAMINER'S COMMENT

The question is divided into two (2) parts; testing (a) controls over Government expenditure. (b) Roles of the National Assembly in Planning and Monitoring of Public Expenditure. About 95% of the students attempted the question, whereas, only about 40% were able to score 7marks and above out of 12 ½ marks allocated. Students' preparation is obviously inadequate and they are therefore required to prepare better for subsequent examination.

SOLUTION 4

- a. FRSection 1706 ii, Internal Audit Report Content shall disclose:-
- i. Safeguard against fraud
 - ii. The control of the receipt and payments
 - iii. Issues and Consumption of stores
 - iv. Verification of cash license and stamps
 - vi. The accuracy of Accounting Record
 - vii. Observation on economy of operation and effectiveness of other area of activities of Government.
 - viii. Alert on irregularity and weakness on Internal Control
 - ix. Compliance with previous reports and Instruction
 - x. Report on staff activities

- b.
 - i. To evaluate the effectiveness of the Internal Control Procedure
 - ii. Verifying the physical existence of Assets and liabilities
 - iii. To check the validity and reliability of accounting information
 - iv. To embark on special investigation where fraud is established
 - v. To ensure that the financial memoranda is strictly complied with as regard receipt and disbursement of public funds.

EXAMINER'S COMMENT

The question tests the key elements of monthly Internal Audit Report. Candidates' performance was very poor as 80% of the candidates wrongly interpreted this for contents of financial statement as against content of FR 1706. About 60% of the candidates attempted the question and only about 5% scoring above 50% of marks obtainable while the rest scored outright Zero

This tests objectives of Internal Audit. Out of about 60% that attempted the question, about 25% scored above 50% of marks obtainable. Candidates are advised to study well and cover all areas of the syllabus.

SOLUTION 5

Date	Particulars	Price ₦	& Invoicing	Receipts Qty	Issue Qty	Balance Qty
01/09/12	Bal. b/f					580
03/09/12	Issue				58	522
03/09/12	Issue				160	362
05/09/12	Issue				46	316
06/09/12	Purchase	28		400		
10/09/12	Issue				80	636
13/09/12	Issue				120	516
16/09/12	Purchase	30		400		916
18/09/12	Issue				120	796
21/09/12	Issue				160	796
29/09/12	Issue				80	556
30/09/12	Purchase	35		600		1156

EXAMINER'S COMMENT

The question tests preparation of BIN CARD with the appropriate headings and rulings. Candidates' performance was good more than 75% of those who attempted

INSIGHT

the question scored above 50% of total marks obtainable. Good performance like this will enhance candidate's success in the examination.

SOLUTION 6

(a) Functions of the EFCC include the following:

- i. Enforcement and due administration of the provisions of the EFCC Act.
- ii. Investigation of reported cases of financial crimes such as Advance Fee Fraud (419), money laundering, counterfeiting, contract scam, illegal fund transfer, issuance of dud-cheques, forgery of financial instrument e.t.c
- iii. Adoption of measures to identify, trace, freeze, and seize proceeds derived from financial crime-related offences.
- iv. Adoption of measures to identify, trace, freeze, confiscate or seize proceeds derived from terrorist activities.
- v. 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.
- vi. Determination of the extent of financial loss and such other losses by government, private individuals' and organizations.
- vii. Dealing with matters connected with extradition, deportation, and mutual, Legal and other assistance between Nigeria and other organizations.
- viii. Collaboration with government bodies within and outside Nigeria in carrying out the functions of the Act.
- ix. The collection analysis and dissemination of all report relating to suspicious transactions to the public.
- x. Carrying out and sustaining all public enlightenment against economic crimes.

b. Composition of the EFCC Membership

- i. A Chairman, who shall be the Chief Executive and Accounting Officer of the Commission.
- ii. A Director-General who shall be the Head of Administration.
- iii. The Governor of Central Bank or his representative
- iv. A representative of the Foreign Affairs Ministry
- v. A representative of the Ministry of Finance
- vi. A representative of the Ministry of Justice
- xi. The Chairman, National Drug Law Enforcement Agency
- xii. The Director-General – The National Intelligence Agency
- xiii. The Director-General - The Department of State Security Service
- xiv. The Director-General – Securities and Exchange Commission
- xv. The Commissioner for Insurance
- xvi. The Postmaster-General, Nigeria Postal Service
- xvii. The Chairman, Nigeria Communication Commission
- xviii. The Comptroller-General, Nigeria Customs Service.
- xix. The Comptroller-General, Nigeria Immigration Service
- xx. A representative of the Nigeria Police Force
- xxi. Four eminent Nigerians with vast experience in Finance, banking and accounting.

EXAMINER'S COMMENT

The question tests Functions of EFCC and composition of EFCC Membership. About 80% of the candidates attempted this question. While about 50% of the candidates scored above 60% of marks allocated.

**ASSOCIATION OF ACCOUNTANCY BODIES IN WEST AFRICA
ACCOUNTING TECHNICIANS SCHEME
PART II EXAMINATION - MARCH 2014**

QUANTITATIVE ANALYSIS

Time Allowed: 3 Hours

SECTION A: PART I

ATTEMPT ALL QUESTIONS

(30 Marks)

MULTIPLE-CHOICE QUESTIONS

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

1. The marks obtained by five students in Accounting and Economics are ranked and the sum of squares of difference in each pair of ranks is computed to be 2.5. The calculated spearman's rank correlation coefficient is
 - A. 0.68
 - B. 0.77
 - C. 0.78
 - D. 0.87
 - E. 0.88
2. If the cost of purchasing an item is given by $C(x) = 1000^{0.1x}$ where x is the quantity produced and sold, the cost (in Cedis) of purchasing 10 items is
 - A. 400
 - B. 600
 - C. 800
 - D. 1,000
 - E. 1,200
3. In a minimisation linear programming problem, the objective function is given by $Z = 600x + 450y$. If the corner points of the feasible region are (0,30), (35,50) and (75,0) then the optimal value of Z is
 - A. 10,000
 - B. 13,500
 - C. 43,000
 - D. 45,000
 - E. 48,000

4. Two events are said to be independent if
- A. The sample points are not the same
 - B. They are mutually exclusive
 - C. The occurrence of one does not affect the occurrence of the other
 - D. They cannot occur at the same time
 - E. The occurrence of one determines the occurrence of the other
5. Which **ONE** of the following is **NOT** a symbol used to express inequalities?
- A. $<$
 - B. \leq
 - C. $=$
 - D. $>$
 - E. \geq
6. Ayobami wants to purchase a one-bed room self-contained flat for ~~₦~~1.8m in 5 years time. Interest rate remains constant at 10% per annum computed by simple interest method. How much should he invest now?
- A. ~~₦~~1.50m
 - B. ~~₦~~1.21m
 - C. ~~₦~~1.20m
 - D. ~~₦~~1.19m
 - E. ~~₦~~1.16m
7. What is the 5th term of the Geometric Progression whose first three terms are 243, 81 and 27?
- A. 9
 - B. 6
 - C. 5
 - D. 3
 - E. 1
8. The geometric mean of 2, 8, 4 is
- A. 1
 - B. 2
 - C. 3
 - D. 4
 - E. 5

9. Which of the following is a probability sampling method?
- A. Systematic sampling
 - B. Purposive sampling
 - C. Judgement sampling
 - D. Convenience sampling
 - E. Quota sampling
10. A generic term for a family of related techniques developed to aid management to plan and control project is known as
- A. Critical path planning
 - B. Critical path analysis
 - C. Critical path scheduling
 - D. Critical path method
 - E. Network analysis
11. A component used in large quantities in an equipment has the following tabulated data on rate of failure which have been collected over 3 months.

	Month after replacement		
Months	1	2	3
Cumulative percentage of failures	35	60	100

Determine the average number of replacement per month with 615 components in the equipment.

- A. 100
- B. 200
- C. 250
- D. 300
- E. 350

12. In a simple annual re-order level system, the maximum usage for a stock and the lead time are given as 4,000 per day and 20 – 25 days respectively. Determine the associated re-order level.
- A. 160 units
 - B. 800 units
 - C. 20,000 units
 - D. 80,000 units
 - E. 100,000 units
13. Which of the following is not an inventory cost?
- A. Shortage cost
 - B. Holding cost
 - C. Planning cost
 - D. Stock cost
 - E. Procurement cost

14.

Source	Destination			
	I	II	III	Available (Units)
A	3	1	4	800
B	2	3	5	600
C	4	2	1	1000
Required (Units)	800	700	900	2400

Use the North West Corner method to find the total transportation cost in Naira.

- A. ₦5,100
- B. ₦5,200
- C. ₦5,300
- D. ₦5,500
- E. ₦5,800

15. A transportation problem is said to be **UNBALANCED** when
- A. The number of destinations is not equal to the number of sources
 - B. The transport costs are high
 - C. The number of products required is equal to the number of products available
 - D. The transportation costs are low
 - E. The number of products required is not equal to the number of products available
16. A maximisation problem with objective function $Z = 20x + 30y$ has the following corner points as the boundary of the feasible region A(0,0), B(0,70), C(36, 45) and D(60, 0). The optimal value of Z is
- A. 1,200
 - B. 1,500
 - C. 2,070
 - D. 2,100
 - E. 3,000
17. If marginal revenue is equal to marginal cost, then profit is
- A. Minimised
 - B. Equal to zero
 - C. Maximised
 - D. Undeterminable
 - E. Minimised or maximised
18. If the total cost function y is given as $y = 16x^2 - 6xz + 15z^2 + 18$, then the sum of the partial derivatives of y with respect to x and z when $x = 1$ and $z = 2$ is
- A. -38
 - B. -34
 - C. 74
 - D. 84
 - E. 94

19. The chart drawn to compare actual performance with planned performance is known as a
- A. Z-chart
 - B. Ogive
 - C. Bar chart
 - D. Gantt chart
 - E. Histogram
20. In statistics, the following points are to be borne in mind while preparing a good statistical table **EXCEPT** that the
- A. table should be simple and compact
 - B. classification in the table should be so arranged so as to focus the attention on the main comparisons
 - C. table should be complete and self explanatory
 - D. table should always be in a square form
 - E. classification of the data in the table should be in alphabetical, geographical or chronological order
21. A family consists of 4 men and 2 women. If a random sample of 3 people is to be chosen from the family, what is the probability that the second choice is a man given that the first choice is a woman?
- A. $\frac{24}{120}$
 - B. $\frac{27}{120}$
 - C. $\frac{32}{120}$
 - D. $\frac{36}{120}$
 - E. $\frac{40}{120}$
22. The test-statistic for single population proportion for large sample is computed by
- A. Z - test
 - B. F - test
 - C. T - test
 - D. One - tailed test
 - E. Two - tailed test

23. A major cassava producer had kept extensive records on the weights of cassava sold to his customers. If a random sample of 65 of these records shows an average of 76kg with a standard deviation of 8kg, a 95% confidence interval for the mean of the population sample is
- A. $73.05 \leq \mu \leq 76.95$
 - B. $74.05 \leq \mu \leq 77.95$
 - C. $75.05 \leq \mu \leq 78.95$
 - D. $76.05 \leq \mu \leq 79.95$
 - E. $77.05 \leq \mu \leq 80.95$
24. In a University, a sample of 100 female students was taken in order to find the average height. From the sample, the computed average height was 136cm while the mean of actual population height was 128cm with a standard deviation of 95cm. The resulting appropriate test statistics is
- A. 0.83
 - B. 0.84
 - C. 0.85
 - D. 0.87
 - E. 0.89
25. A business man breaks even when the difference between his revenue and cost functions is
- A. One
 - B. Zero
 - C. Greater than one
 - D. Less than one
 - E. Very high
26. Consumers' surplus arises when consumers pay
- A. more than what they are willing to pay
 - B. what they are willing to pay
 - C. less than what they are willing to pay
 - D. for the commodity in bulk
 - E. for the commodity in arrears

27. Which of the following is a sequence of solving a typical Operations Research problem?
- A. Problem recognition, model building, data collection, problem solution and interpretation
 - B. Data collection, model building, problem solution, problem recognition and interpretation
 - C. Interpretation, problem recognition, model building, data collection and problem solution
 - D. Model building, problem recognition, data collection, problem solution and interpretation
 - E. Interpretation, data collection, model building, problem recognition and problem solution
28. The quantity of a product produced (in '000 units) by a manufacturing company in the years 2012 and 2013 are 120 and 125 respectively. Using the year 2012 as the base year, the quantity relative is
- A. 104.00%
 - B. 96.00%
 - C. 95.83%
 - D. 4.17%
 - E. 4.00%
29. Using the usual notations, the expression for the Paasche's price index is given as
- A. $\frac{\sum p_0 q_0}{\sum p_n q_0} \times 100$
 - B. $\frac{\sum p_n q_0}{\sum p_0 q_0} \times 100$
 - C. $\frac{\sum p_n q_n}{\sum p_0 q_0} \times 100$
 - D. $\frac{\sum p_n q_n}{\sum p_0 q_n} \times 100$
 - E. $\frac{\sum p_0 q_n}{\sum p_n q_n} \times 100$

30. The solution obtained when decision variables which satisfy all constraints and the non-negativity conditions of linear programming problem simultaneously is called
- A. Unbounded solution
 - B. Infeasible solution
 - C. Basic solution
 - D. Feasible solution
 - E. Basic feasible solution

SECTION A: PART II ATTEMPT ALL QUESTIONS (20 Marks)

SHORT-ANSWER QUESTIONS

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

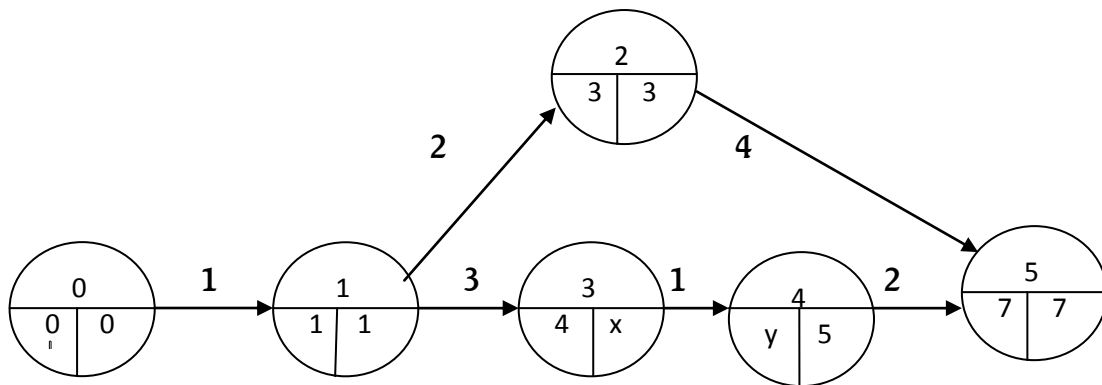
1. The commonly used percentile range is the one which corresponds to the and percentile.
2. The maximum size of the Type I error, which we are prepared to risk is known as the.....
3. A central part of an operations research project consists of building a model of the situation under study.
4. The technique of rounding off a number so that some digits are neglected to make the number clearer and more understandable is.....
5. The profit function of a given business can be stated as the difference between the function and the..... function.
6. Producers' surplus arises when producers supply at a.....higher than the
7. The point at which the second derivative of a function is positive is called a point.
8. The level of stock at which a further replenishment order should be placed is known aslevel.
9. The probabilities that 3 brothers give monthly allowances of ₦2,000, ₦1,000 and ₦3,000 to their sister are 0.4, 0.6 and 0.2 respectively. The expected monthly allowance of their sister is.....

INSIGHT

10. The price index that tends to under estimate price changes is theprice index.
11. The two main sources of data for statistical use are and sources.
12. The order quantity that minimises the annual holding cost plus the annual ordering cost is called the.....
13. The least squares regression line is that line which the sum of the squares of the.....
14. Use the Least Cost method to find y in the following table

Source	Destination		Available (Units)
	P	Q	
A	4	y 2	50
B	1	3	90
Demand (Units)	60	80	140

15. In time series analysis, the original time series data and the trend obtained are used to estimate.....
16. A method of solving a linear programming problem that requires at least two decision variables is the.....
17. The rate of interest which produces the same yield as the nominal or stated rate of interest when compounded annually is known as.....
18. The type of float which does not affect the float of either the preceding or succeeding activities is known as float.
19. The activities for a project in AKPOS Construction Company are depicted in the network shown below



The value of x and y respectively are..... and.....

20. **ONE** of the rules of inequalities states that, the symbol of an inequality changes if both sides of the inequality are multiplied (or divided) by a..... Number.

SECTION B: Attempt any **FOUR** questions out of which at least one must come from each sub-section **(50 Marks)**

STATISTICS

QUESTION 1

A trading outfit purchased three currency counting machines A, B and C from a manufacturer who claimed that the probabilities that machines A, B and C will last for 10 years are 0.3, 0.4 and 0.2 respectively.

Determine the probability that

- a. None of them will last for 10 years. (3½ Marks)
- b. Machine A only will last for 10 years (2 Marks)
- c. Any two of them will last for 10 years (4½ Marks)
- d. At least one of them will last for 10 years (2½ Marks)

(Total 12½ Marks)

INSIGHT

QUESTION 2

The table below shows the output of production (in thousand tons) of a certain company.

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013
Output of Production	68	72	84	96	80	86	92	94	85

You are required to:

- Fit a straight line by the method of least squares and estimate the trend values (10½ Marks)
- Determine the monthly increase in output production? (2 Marks)
(Hint: use 2009 as the origin) (Total 12½ Marks)

BUSINESS MATHEMATICS

QUESTION 3

The production manager of a manufacturing company stated that the marginal cost function for producing x number of units, in thousands, is $MC = 8x^2 - 11x + 3$. If the cost is in thousands of naira, determine the:

- Total cost function for producing x number of units. (2½ Marks)
 - Total cost for producing 2,000 units of the item. (2½ Marks)
 - Number of units to be manufactured to minimize the cost. (5½ Marks)
 - Associated minimum total cost. (2 Marks)
- (Total 12½ Marks)

QUESTION 4

- a. The sale and cost functions of a cement company are estimated and given respectively as

$$S(x) = 250x - 150$$

$$C(x) = 200x^2 - 30x + 2500$$

where x represents the number of bags of cement produced and sold.

You are required to determine the break-even quantity for the company.

(7 Marks)

- b. The annual revenue of MAJKAM Nig. Plc is given by $R = (500,000)(0.08)^{0.2x}$ where x is the amount (in GH¢'000) spent on overheads.

You are required to find the:

- i. Maximum revenue (3 Marks)

- ii. Total revenue if GH¢2,000 is spent on overheads (2½ Marks)
(Total 12½ Marks)

OPERATIONS RESEARCH

QUESTION 5

An electric component used in an Automated Teller Machine (ATM) of a commercial bank has a limited life span. The following information has been collected on failures of these components monthly:

	Month after replacement			
	1	2	3	4
Cumulative percentage of failures	15	35	70	100

The bank operates replacement policy of item as it fails suddenly. It will cost ~~₦~~2,500 to replace individually and ~~₦~~1,200 per component for group replacement. If the bank has 420 ATMs.

You are required to determine the cost of:

- a. i. Individual replacement (4 Marks)
 - ii. Group replacement (7½ Marks)
 - b. Suggest the best replacement policy for the bank (1 Mark)
- (Total 12½ Marks)**

QUESTION 6

XYZ Limited manufactures a line of small outboard engines for recreational use. The motors are three-cycle engines and each engine is filled with motor oil just prior to completion. The company's expected production for the coming year is tabulated as follows:

Engine size	Quantity	Oil capacity/unit
15HP	16,000 Units	3.0 litres
25HP	28,600 Units	3.5 litres
30HP	12,000 Units	4.5 litres

The company orders motor oil in 100-litre drums.

Inventory related costs for next year are as follows:

Holding costs ~~₦~~25 per drum per year

Ordering Costs ~~₦~~18 per order.

You are required to:

- a. Determine the Company's Economic Order Quantity (EOQ) for motor oil. (6 Marks)
 - b. Calculate the number of orders required in the year to meet the company's Requirement of motor oil (2½ Marks)
 - c. Find the total inventory cost (4 Marks)
- (Total 12½ Marks)**

SUGGESTED SOLUTION

SECTION A

PART I MULTIPLE-CHOICE QUESTIONS

(30 Marks)

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

- 19. D
- 20. D
- 21. C
- 22. A
- 23. B
- 24. B
- 25. B
- 26. C
- 27. A
- 28. A
- 29. D
- 30. C

(Workings)

1.
$$R = 1 - 6 \frac{\sum d^2}{n(n^2 - 1)} = 1 - \frac{6(2.5)}{5(5^2 - 2)}$$
$$= 1 - 0.125 = 0.85$$

2. $C(x) = 1000^{0.1x}$
If $x = 10$, $c(10) = 1000^{0.1 \times 10}$
 $= 1000$

3. $Z = 600x + 450y$
 $(0, 30), Z = 600(0) + 450(30) = 13,500^*$
 $(35, 50), Z = 600(35) + 450(50) = 43,500$
 $(75, 0), Z = 600(75) + 450(0) = 45,000$

$$\begin{aligned}
 6. \quad A_n &= P (1 + r.n) \\
 1.80m &= P [1 + (0.10)5] \\
 &= 1.5p \\
 P &= \frac{1.80}{1.5} = \text{R}1.20m
 \end{aligned}$$

$$\begin{aligned}
 7. \quad T_n &= ar^{n-1} \\
 &\quad 243, 81, 27, \dots \\
 \therefore r &= \frac{81}{243} = \frac{1}{3} \\
 \therefore T_5 &= 243 \left(\frac{1}{3}\right)^{5-1} = \frac{243}{81} = 3
 \end{aligned}$$

$$\begin{aligned}
 8. \quad G.M. &= \sqrt[3]{x_1 \cdot x_2 \cdot x_3} \\
 &= \sqrt[3]{2 \times 8 \times 4} \\
 &= \sqrt[3]{64} \\
 &= 4
 \end{aligned}$$

$$\begin{aligned}
 11. \quad \text{No of replacements per month is} \\
 &= \frac{615}{(1 \times 0.35) + (2 \times 0.25) + (3 \times 0.4)} \\
 &= \frac{615}{2.05} \\
 &= 300
 \end{aligned}$$

$$\begin{aligned}
 12. \quad \text{Re-order level} &= \text{max. usage} \times \text{max. lead time} \\
 &= 4000 \times 25 \\
 &= 100,000 \text{ units}
 \end{aligned}$$

14. Destination

Source	I	II	III	Available
A	800 3	1	4	800 0
B	2	600 3	5	600 0
C	4	100 2	900 3	1000 900 0
Required	800 0	700 100 0	900 0	2400

Total transportation cost is $800 \times 3 + 600 \times 3 + 100 \times 2 + 900 \times 1 = 5,300$

16. $Z = 20x + 30y$

$A(0,0), Z = 20(0) + 30(0) = 0$

$B(0,70), Z = 20(0) + 30(70) = 2100^*$

$C(36, 45), Z = 20(36) + 30(45) = 2070$

$D(60, 0), Z = 20(60) + 30(0) = 1200$

18. $y = 16x^2 - 6xz + 15z^2 + 18$

$\frac{\partial y}{\partial x} = 32x - 6z$

$\frac{\partial y}{\partial z} = -6x + 30z$

$\therefore \frac{\partial y}{\partial x} - \frac{\partial y}{\partial z} = 32x - 6z - 6x + 30z = 74 \text{ (at } x = 1, z = 2)$

21. The possibilities are

W M W or W M M

i.e. required probability is $\frac{2}{6} \cdot \frac{4}{5} \cdot \frac{1}{4} + \frac{2}{6} \cdot \frac{4}{5} \cdot \frac{3}{4} = \frac{32}{120}$

23. $\bar{X} \pm 1.96 \sigma / \sqrt{n}$

$76 \pm \frac{1.96 \times 8}{\sqrt{65}}$

76 ± 1.95

$74.05 \leq \bar{x} \leq 77.95$

$$\begin{aligned} 24. \quad z &= \frac{\bar{x} - \mu_0}{\sigma / \sqrt{n}} \\ &= \frac{136 - 128}{95 / \sqrt{100}} \\ &= \frac{+8}{9.5} \\ |z| &= 0.84 \end{aligned}$$

$$\begin{aligned} 28. \quad QR &= \frac{Q_n}{Q_o} \times 100 \\ &= \frac{125}{120} \times 100 = 104.00\% \end{aligned}$$

EXAMINER'S COMMENT

Sizable portion of the syllabus is fairly covered. Generally, candidates performed fairly well with an average mark of about 60%

SHORT- ANSWER QUESTIONS' ANSWERS

1. 10th, 90th (in that order)
2. Level of significance
3. Real-world or problem
4. Approximation
5. Revenue, cost
6. Price, fixed price/market price (in that order)
7. Minimum
8. Re-order
9. ₦2000

10. Paasche's
11. Primary, secondary
12. Economic Order Quantity (EOQ)
13. Minimises, errors or deviation (in that order)
14. 50
15. Seasonal variation
16. Simplex method
17. Annual percentage rate
18. Independent
19. $x = 4, y = 5$
20. Negative

Workings

9. Her monthly expectation is
 $(0.4)(2000) + (0.6)(1000) + (0.2)(3000) = \text{R}2000$

14. Destinations

Sources	P	Q	Available
A	4	50 2	50 0
B	60 1	30 3	90 30 0
Demand	60 0	80 30 0	140

$$y = 50$$

19. $y = 7 - 2 = 5$
 $x = 1 + 3 = 4$

EXAMINER'S COMMENT

A reasonable part of the syllabus is covered by the 20 questions.

On the average, candidates' performance stood at about 50%.

SOLUTION 1**(PROBABILITY)**

$$P(A) = 0.3 \quad \therefore P(\bar{A}) = 0.7$$

$$P(B) = 0.4 \quad \therefore P(\bar{B}) = 0.6$$

$$P(C) = 0.2 \quad \therefore P(\bar{C}) = 0.8$$

$$\begin{aligned} \text{(a) } P(\text{none}) &= P(\bar{A}\bar{B}\bar{C}) = P(\bar{A}) P(\bar{B}) P(\bar{C}) \\ &= (0.7) (0.6) (0.8) \\ &= 0.336 \end{aligned}$$

$$\begin{aligned} \text{(b) } P(A \text{ only}) &= P(A \bar{B} \bar{C}) = P(A) P(\bar{B}) P(\bar{C}) \\ &= (0.3) (0.6) (0.8) \\ &= 0.144 \end{aligned}$$

$$\begin{aligned} \text{(c) } P(\text{Any 2}) &= P(ABC) \text{ or } P(\bar{A}BC) \text{ or } P(A\bar{B}C) \\ &= P(A) P(\bar{B}) P(\bar{C}) + P(\bar{A}) P(B) P(C) + P(A) P(\bar{B}) P(C) \\ &= (0.3) (0.4) (0.8) + (0.7) (0.4) (0.2) + (0.3) (0.6) (0.2) \\ &= 0.188 \end{aligned}$$

$$\begin{aligned} \text{(d) } P(\text{at least 1}) &= 1 - P(\text{none}) \\ &= 1 - 0.336 \\ &= 0.664 \end{aligned}$$

EXAMINER'S COMMENT

This question tests the candidates' knowledge of basic probability. About 55% of the candidates attempted the question. The average marks obtained stood at about 50%.

The major pitfall of the candidates was their not knowing that the sum of all probabilities is always 1.0.

SOLUTION 2

Let x represent the coded period

Let y represent the production output

Year	x	Y	x ²	xy
2005	-4	68	16	272
2006	-3	72	9	-216
2007	-2	84	4	-168
2008	-1	96	1	-96
2009	0	80	0	0
2010	1	86	1	86
2011	2	92	4	184
2012	3	94	9	282
2013	4	85	16	340
<hr/>				
	$\sum x = 0$	$\sum y = 757$	$\sum x^2 = 60$	$\sum xy = 140$

Let the fitted straight line be

$$Y = a_0 + a_1x$$

$$\text{where } a_1 = \frac{n \sum xy - \sum x \sum y}{n \sum x^2 - (\sum x)^2}$$

But $\sum x = 0$

$$\therefore a_1 = \frac{\sum xy}{\sum x^2} = \frac{140}{60} = 2.33$$

$$G_0 = \bar{y} = \frac{\sum y}{n} = \frac{757}{9} = 84.11$$

$$\therefore \text{Trend line} = 84.11 + 2.33x$$

$$Y = 84.11 + 2.33x$$

INSIGHT

Estimation of trend values

x	$Y = 84.11 + 2.33x$
-4	$84.11 + 2.33 (-4) = 74.79$
-3	$84.11 + 2.33 (-3) = 77.12$
-2	$84.11 + 2.33 (-2) = 79.45$
-1	$84.11 + 2.33 (-1) = 81.78$
0	$84.11 + 2.33 (0) = 84.11$
1	$84.11 + 2.33 (1) = 86.44$
2	$84.11 + 2.33 (2) = 88.77$
3	$84.11 + 2.33 (3) = 91.10$
4	$84.11 + 2.33 (4) = 93.43$

- (b) The yearly increase in production is given by the gradient of the least squares fitted straight line i.e. a_1 in $y = a_0 + a_1 x$. In this case $a_1 = 2.33 \times 1000 = 2,330$.

Hence, the monthly increase in production is given by $2330 \div 12 = 194.17$ tons.

EXAMINER'S COMMENT

This question is on fitting a straight line using the method of Least Squares. Candidates are also required to use the Least Squares Model to predict the monthly increase in the output production.

About 70% of the candidates attempted the question. The performance was very poor with an average score of about 24%.

The major pitfall of the candidates was their inability to use the given origin. This made most of the candidates to lose lots of marks.

Candidates are advised to follow the given instructions in future.

SOLUTION 3

(a) Total cost function = $\int M.C. dx$

$$= \int (8x^2 - 11x + 3) dx$$

$$= \frac{8}{3}x^3 - \frac{11}{2}x^2 + 3x + c$$

(b) Total cost for producing 2000 units implies that

$$x = 2$$

$$\therefore TC = \frac{8}{3}(2)^3 - \frac{11}{2}(2)^2 + 3(2)$$

$$= \frac{64}{3} - \frac{44}{2} + \frac{6}{1} = \frac{128 - 132 + 36}{6}$$

$$= \frac{32}{6}$$

$$= 5.333$$

$$\therefore TC = \text{R}5,333.33$$

(c) To determine the minimum number of units to be produced;

$$\frac{dy}{dx} = MC = 8x^2 - 11x + 3 = 0$$

$$8x^2 - 3x - 3x - 8x + 3 = 0$$

$$8x(x-1) - 3(x-1) = 0$$

$$(x-1)(8x-3) = 0 \quad (1/2)$$

$$x = 1 \text{ or } \frac{3}{8}$$

For minimum, $\frac{d^2y}{dx^2}$ must be positive

$$\text{i.e., } \frac{d^2y}{dx^2} = 16x - 11$$

$$\text{for } x = 1; \frac{d^2y}{dx^2} = 16 - 11 = 5 \text{ minimum}$$

\therefore the number of units required is 1000 units

(d) Associated minimum total cost is,

$$\begin{aligned} & \frac{8}{3}(1)^3 - \frac{11}{2}(1)^2 + 3(1) \\ &= \frac{8}{3} - \frac{11}{2} + \frac{3}{1} = \frac{16 - 33 + 8}{6} = \frac{1}{6} \quad \text{i.e.} \quad \frac{1}{6} \times 1000 \\ &= 0.16667 \end{aligned}$$

$$\therefore \text{min } \text{inum cost} = 0.16667 \times 1000 = N166.67$$

EXAMINER'S COMMENT

This question tests the candidates' knowledge of simple integration. That is, given the Marginal cost, candidates are expected to obtain the total cost. They are also expected to use the second derivative concept to determine the minimum cost.

Their major pitfall is their inability to carry out the required basic integration. About 65% of the candidates attempted the question. The performance was very poor with an average score of about 20%.

Candidates are advised to learn the basics of integration as the inverse of differentiation.

SOLUTION 4

(a) Revenue

$$\begin{aligned} R(x) &= (\text{number of bags of cement sold}) \times (\text{sales function}) \\ &= (x)(250x - 150) \\ &= 250x^2 - 150x \end{aligned}$$

But for break-even

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

$$\therefore 250x^2 - 150x = 200x^2 - 30x + 2500$$

$$\therefore 50x^2 - 120x - 2500 = 0$$

$$\text{or } 5x^2 - 12x - 250 = 0$$

By using quadratic formula,

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

where $a=5$, $b=-12$, $c=-250$

$$\begin{aligned}\therefore x &= \frac{12 \pm \sqrt{(-12)^2 + 4(5)(250)}}{2(5)} = \frac{12 \pm \sqrt{144 + 5000}}{10} \\ &= \frac{12 + 71.7217}{10} \\ &= 8.3722 \text{ or } -5.9722 \\ &\approx 8 \text{ or } -6\end{aligned}$$

Therefore, since the quantity cannot be negative, the break-even quantity is taken as 8.

(b)(i) $R = (500,000) (0.08)^{0.2x}$

Revenue is maximum when no amount is spent on overheads i.e. $x = 0$

$$\begin{aligned}\therefore R_{\max} &= (500000)(0.08)^{0.2 \times 0} \\ &= 500,000 \times 1 \\ &= \text{¢ } 500,000\end{aligned}$$

(ii) Since x is in thousands of cedis

$$\text{then, } x = \frac{2000}{1000} = 2$$

$$\begin{aligned}\therefore R &= (500,000) (0.08)^{0.2 \times 2} \\ &= (500,000) (0.08)^{0.4} \\ &= 500,000 \times 0.3641 \\ &= \text{¢ } 182,056.42\end{aligned}$$

EXAMINER'S COMMENT

Candidates are required to know when a company breaks even. Also they are expected to know that sales function is the same as demand function and the product of the quantity and sales gives the Revenue. This was the major pitfall of most of the candidates.

About 80% of the candidates attempted the question with an average mark of about 45%. Majority of the candidates did not understand the question. They confused sales function with revenue function.

SOLUTION 5

- (a) Proportion of the component that fails in each month

Month	Probability
1	15% = 0.15
2	(35 – 15)% = 20% = 0.20
3	(70 – 35)% = 35% = 0.35
4	(100 – 70)% = 30% = 0.30

The average lifetime of the component is

$$\begin{aligned}
 &= (1 \times 0.15) + (2 \times 0.20) + (3 \times 0.35) + (4 \times 0.30) \\
 &= 0.15 + 0.40 + 1.05 + 1.20 \\
 &= 2.8 \text{ months}
 \end{aligned}$$

$$\text{The average monthly replacement} = \frac{420}{2.8}$$

$$= 150$$

$$\begin{aligned}
 \therefore \text{Individual replacement will cost} &= 150 \times \text{N}2,500 \\
 &= \text{N}375,000
 \end{aligned}$$

- (ii) The number of failures each month given that the failures are replaced is calculated as follows:

$$\text{Month 1: } 0.15 \times 420 = 63$$

$$\text{Month 2: } (0.20 \times 420) + (0.15 \times 63) = 93$$

$$\text{Month 3: } (0.35 \times 420) + (0.20 \times 63) + (0.15 \times 93) = 174$$

$$\text{Month 4: } (0.30 \times 420) + (0.35 \times 63) + (0.20 \times 93) + (0.15 \times 174) = 193$$

Cost of group replacement

Month	Individual Replacement Cost	Cumulative Individual Replacement	Cumulative Total Costs	Average monthly cost
1	2500 x 63 = 157,500	157,500 + 504,000	661,500	661,500
2	2500 x 93 = 232,500	390,000 + 504,000	894,000	447,000
3	2500 x 174 = 435,000	825,000 + 504,000	1,329,000	443,000
4	2500 x 193 = 482,500	1,307,500 + 504,000	1,811,500	452,875

*Note that the bank's policy for group replacement will attract ~~N~~(420 x 1200)
i.e. ~~N~~504,000

∴ Group replacement will cost = ~~N~~443,000 (it is seen that after the 3rd month, the best replacement policy for the bank is individual replacement because it is cheaper compared to the group replacement).

EXAMINER'S COMMENT

This question is on Gradual Failures and candidates are required to compare individual replacement policy with group replacement policy.

Their major pitfall was their mis-interpretation of the unit replacement costs under individual and group policy replacements.

About 60% of the candidates attempted the question. About 10% of them scored 6 marks out of 12½% which comes to about 48%.

SOLUTION 6

Total oil consumption is

$$\begin{aligned} &= 16000(3) + 28600(3.5) + 12000(4.5) \\ &= 48,000 + 100,100 + 54,000 \\ &= 202,100 \end{aligned}$$

Total oil consumption per annum in drums is

$$D = \frac{202,100}{100} = 2,021$$

$$(i) \quad Q = \sqrt{\frac{2DS}{H}}, \quad S = \text{cost of making one order}$$

H = Holding cost per unit of stock per period

Q = Re-order quantity

$$\begin{aligned} \text{i.e. } Q &= \sqrt{\frac{2 \times 2,021 \times 18}{25}} = 53.95 \approx 54 \\ &= 54 \text{ drums (EOQ)} \end{aligned}$$

$$(ii) \quad \text{No of orders} = \frac{D}{EOQ} = \frac{2021}{51} = 37.4 \approx 38$$

INSIGHT

$$\begin{aligned} \text{(iii) Total inventory costs} &= \frac{DS}{Q} + \frac{Q}{2}H \\ &= \left(\frac{2021 \times 18}{54}\right) + \frac{54(25)}{2} \\ &= 673.67 + 675 \\ &= \text{R}1,348.67 \end{aligned}$$

EXAMINER'S COMMENT

The question tests the candidates' knowledge of basic Inventory Problem. About 70% of the candidates attempted the question. The average mark scored stood at about 24%.

AT/141/PII.8

**ASSOCIATION OF ACCOUNTANCY BODIES IN WEST AFRICA
ACCOUNTING TECHNICIANS SCHEME
PART II EXAMINATION - MARCH 2014**

INFORMATION TECHNOLOGY

Time Allowed: 3 Hours

SECTION A: PART 1 ATTEMPT ALL QUESTIONS

(30 Marks)

MULTIPLE-CHOICE QUESTIONS

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

1. Examples of System Software include
 - I Operating System
 - II Utility Programs
 - III Computer Language
 - A. I and II only
 - B. I and III only
 - C. I, II and III
 - D. I only
 - E. II only
2. The following are types of software **EXCEPT**
 - A. System Software
 - B. Application Software
 - C. Multi- user Software
 - D. Computer Language
 - E. User developed programs
3. Which of the following is **NOT** an example for Utility programs?
 - A. Merge routine
 - B. File sorting
 - C. File Sourcing
 - D. File organisation
 - E. File copying

4. A software consists of programs that instruct the computer to perform certain
 - A. Duties
 - B. Counting utilities
 - C. Processing functions
 - D. Multiplication operations only
 - E. Additive operations only
5. The two basic types of information systems software are systems software and
 - A. Systems programs
 - B. Application software
 - C. Operating system
 - D. Off-the-shelf Application packages
 - E. Utility programs
6. Input, output and storage devices are collectively referred to as
 - A. Computer system
 - B. Permanently fixed devices
 - C. Computer component
 - D. Computer terminals
 - E. Peripheral devices
7. Visual Display Unit has the following features **EXCEPT**
 - A. Uses inbuilt microprocessors
 - B. Displays are highlighted or contrasted
 - C. Cursor control
 - D. Produces output on the screen
 - E. Does not allow paper wastage
8. An output device that produces a single sheet or continuous stationery is referred to as
 - A. Visual Display Unit
 - B. Actuator
 - C. Printer
 - D. Voice output
 - E. Loudspeaker

9. A Special Computer Software used in the production of office documents is called
- A. Notebook
 - B. Digital Computer
 - C. Word processor
 - D. Personal Computer
 - E. Special Purpose Computer
10. Data must be transferred to the storage before it can be processed by the processor
- A. Main
 - B. Backing
 - C. Auxiliary
 - D. Cache
 - E. External
11. Design and implementation of data structures are the responsibilities of
- A. Programmers
 - B. Project Managers
 - C. Technical writers
 - D. Database administrators
 - E. Data processors
12. Which of the following personalities spends most of its time talking with end users, gathering information, documenting systems and proposing solutions?
- A. System analyst
 - B. Project manager
 - C. Network engineer
 - D. Database administrator
 - E. Programmer
13. It is the function of.....to manage system development, assign staff, manage the budget, report and ensure that deadlines are met
- A. Graphic designers
 - B. Network engineers
 - C. System analysts
 - D. Database administrator
 - E. Project managers

14. The process of transmitting a task into a series of commands that a computer will use to perform those tasks is called
- A. Project design
 - B. Installation
 - C. Systems analysis
 - D. Programming
 - E. Graphic design
15. Translating a problem statement into a series of sequential steps describing what the program must do is known as
- A. Coding
 - B. Debugging
 - C. Creating the algorithm
 - D. Writing documentation
 - E. Designing graphics
16. Data that have been processed in such a way as to increase the knowledge of the person who uses the data is known as
- A. Knowledge
 - B. Wisdom
 - C. Understanding
 - D. Information
 - E. Communication
17. Byte is the smallest unit of information representation which is addressable on the computer memory and byte is a group of
- A. 8 bits
 - B. 7 bits
 - C. 6 bits
 - D. 4 bits
 - E. 2 bites

18. Conversion of the binary number 100111_2 to a decimal number is
- A. 59
 - B. 58
 - C. 39
 - D. 38
 - E. 29
19. A collection of related fields is known as
- A. File
 - B. Field
 - C. Character
 - D. Data
 - E. Record
20. A technique which facilitates the running of two or more tasks concurrently on a microcomputer is known as
- A. Multitasking
 - B. Multiprogramming
 - C. Multiprocessing
 - D. Distributed processing
 - E. Interactive processing
21. The two broad categories of transmission media are
- A. Infrared and microwave
 - B. Twisted and untwisted
 - C. Shielded and unshielded
 - D. Guided and wireless
 - E. Microwave and satellite
22. On network, what enables traffic to flow from one computer to another is
- A. Network protocol
 - B. ARPANET
 - C. Uniform Resource Locator
 - D. LAN Server
 - E. LAN Client

23. What facility allows two or more people to engage in online interactive conversation over the Internet?
- A. Content streaming
 - B. Chat rooms
 - C. Newsgroup
 - D. Gopher space
 - E. Usenet
24. A type of Computer network where users within an office building are connected to each other's devices for rapid communication is known as
- A. Personal Area Network
 - B. Metropolitan Area Network
 - C. Wide Area Network
 - D. International Network
 - E. Local Area Network
25. Which of the following statements about call centres is true?
- A. They are used to handle incoming calls only, not outgoing calls
 - B. They frequently employ automatic call distribution to forward calls to the right party and balance the workload of support personnel
 - C. It is illegal for charitable organisation to employ them
 - D. 'Do Not Call' legislation has had a minimal impact on their operation
 - E. Offshore call centres do not provide technical support services for many technology vendors and their customers
26. Which of the following poses a threat to an information system?
- A. Authorised Access
 - B. Authorised modification
 - C. Denial of service
 - D. Regular activities update
 - E. Cookie

27. A specially designed page at a website which brings information together from diverse sources and from which the user can configure which information he/she can display is known as
- A. Portal
 - B. Web
 - C. Web centre
 - D. Web host
 - E. Web com
28. Internet explorer, Mozilla Firefox and Google chrome are examples of
- A. Hyperlinks
 - B. Protocols
 - C. Servers
 - D. Web browsers
 - E. Uniform Resource Identifiers
29. Offences that are committed against individuals or group of individuals with a criminal motive to intentionally harm the reputation of the victim or cause physical or mental harm to the users of internet and mobile phones is called
- A. Espionage
 - B. Computer crime
 - C. Cybercrime
 - D. Privacy infringement
 - E. Sabotage
30. Office Automation hardware do not include **ONE** of the following
- A. Computer
 - B. Telephone
 - C. Scanner
 - D. Barcode reader
 - E. Printer

SHORT-ANSWER QUESTIONS

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

1. Software that controls file systems in a computer is called
2. The software that is normally used to prepare a budget forecast is a
3. A numerical address assigned to every computer and router connected to the internet, serving as the destination address of the computer and enabling the network to route messages to proper destination is called
4. A network based on Web technology that links customers, suppliers and others to the company is known as
5. The telecommunication technology that delivers high bandwidth information to homes and small businesses over ordinary copper telephone wire is called
6. A batch processing technique where jobs are entered at a remote terminal and transmitted to a computer through telecommunication link is called
7. Monitors with only one colour e.g. amber upon black are called
8. The “power house” of a computer is called
9. The component of the computer system through which data, instructions, programs enter the computer is theunit
10. A collection of related records is known as
11. A button that allows users to access their computer programs is known as
12. An attack that occurs when electronic intruders deliberately attempt to prevent legitimate users of a service from using the service is referred to as
13. A scientific discipline concerned with the goals of health, safety and productivity of the human being is called
14. A standard network protocol used to transfer files from one host to another over the internet is called
15. An attachment to an electronic message to verify that a user sending a message is who he or she claims to be and to provide the receiver with the means to encode a reply is called

INSIGHT

16. The process of justifying a new system before recommendation is referred to as
17. The process of creating the new computer files from the converted computer acceptable data is called
18. A structured process in which users, managers and analysts work together for several days in a series of intensive meetings to specify or review system requirements is called
19. A standard process followed in an organisation to conduct all the steps necessary to analyse, design, implement and maintain information systems is known as
20. A reference on a Web page to other documents that contain related information is known as

SECTION B

ATTEMPT ANY FOUR QUESTIONS

(50 Marks)

QUESTION 1

Computers are essential devices in modern society affecting virtually every facet of life and living.

Required:

- a. List **FIVE** advantages of using computers. (5 Marks)
 - b. What are microcomputers? (1½ Marks)
 - c. Enumerate **SIX** features of micro computers that distinguish them from other types of computers. (6 Marks)
- (Total 12½ Marks)**

QUESTION 2

Filing is an essential requirement in any organisation and files can be stored in different ways in a computer system.

- a. Briefly explain the following file organisations:
 - i. Serial
 - ii. Sequential
 - iii. Indexed Sequential
 - iv. Random Access
- (12 Marks)**

- b. Mention one example of a magnetic storage medium (½ Marks)
(Total 12½ Marks)

QUESTION 3

The world has become a very complex place. The advantage goes to organisations that collect, manage and interpret information effectively and efficiently through the use of database.

- a. What do you understand by the term database (1½ Marks)
b. Enumerate **FOUR** advantages of using a database (4 Marks)
c. List **FOUR** challenges of using a database (4 Marks)
d. State **THREE** operations involved in using a database (3 Marks)
(Total 12½ Marks)

QUESTION 4

The use of electronic mail is continually gaining acceptability globally.

- a. What is an Electronic mail (1½ Marks)
b. Enumerate any **FIVE** benefits and **THREE** shortcomings of using electronic mails in an organisation (8 Marks)
c. Give **THREE** purposes of a Network operating system? (3 Marks)
(Total 12½ Marks)

QUESTION 5

Observation of a system is one of the methods of fact-finding available to the System Analyst.

- a. List **TWO** other methods of fact-finding (2½ Marks)
b. Outline **THREE** advantages and **TWO** disadvantages each of the two methods listed above (10 Marks)
(Total 12½ Marks)

QUESTION 6

Office automation, in spite of its peculiar numerous benefits has its own challenges.

- a. i. What is office Automation? (2½Marks)
- ii. Enumerate **FIVE** functions involved in office automation (5 Marks)
- b. State **FIVE** reasons why backup is needed for an information system (5 Marks)
 environment. (Total 12½ Marks)

SUGGESTED SOLUTION

SECTION A

PART I MULTIPLE-CHOICE QUESTIONS

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

- 24. E
- 25. B
- 26. C
- 27. A
- 28. D
- 29. C
- 30. D

EXAMINER'S COMMENT

This section consists of thirty questions, which cover almost the whole syllabus. The performance was very good as over 60% of the candidates scored above 50% of the allocated mark.

PART II: SHORT-ANSWER QUESTIONS

- 1. Operating System (OS)
- 2. Spreadsheet
- 3. Internet Protocol (IP) Address
- 4. Extranet
- 5. Digital Subscriber Line (DSL)
- 6. Remote Job Entry (RJE)
- 7. Monochrome Monitors
- 8. Central Processing Unit (CPU)
- 9. Input
- 10. File
- 11. START button
- 12. Denial – of - Service
- 13. Ergonomics
- 14. File Transfer Protocol (FTP)

15. Digital Certificate
16. Feasibility Study
17. File Conversion
18. Joint Application Development (JAD)
19. Systems Development Life Cycle (SDLC)
20. Hyper Link

EXAMINER'S COMMENT

This section consists of twenty questions which cover almost the whole syllabus. The performance was poor as less than 40% of the candidates scored below 50% of the allocated marks.

This performance indicates that the candidates were not very familiar with the technical terms in Information Technology.

The candidates need to pay more attention to the technical terms in I.T.

SOLUTION 1

- 1a. Advantages of using computers include:
 - i. High Speed of Operations': Computers operate at a high speed
 - ii. Accurate Processing: Information produced by computers are accurate
 - iii. Flexibility of Operation: Computer has the ability to handle several operations at the same time.
 - iv. Automatic Operation: Computer operation is automatic with little or no human intervention
 - v. Large Volume Processing: Computers can process large volume of data in a relatively short period of time
 - vi. Management Use: Computers can be used by management at various levels to make decision
 - vii. Reliable and Efficient: During large volume Processing, information produced are reliable and consistent
- 1b. Microcomputers are portable computers with micro processor as the central processing unit. They are based on micro processor chips (from where their names were derived). Microcomputers have existed since about 1971. Their low costs and high conveniences have been responsible for large levels of production and sales.

1c. Features of Microcomputers include:

- i. It is portable i.e., it has a small size
- ii. It is easy to use
- iii. It uses 4th Generation Query Languages
- iv. It uses microchip processor i.e. the processor is based on microchip technology
- v. It is easy to install
- vi. It can operate at room temperature
- vii. It has low cost
- viii. It is easily available from most shops
- ix. It uses different types of monitors i.e. monitors with different resolutions

EXAMINER'S COMMENT

This question tests the candidates' understanding on the advantages of Computer Systems. It also tests for the definition and features of Microcomputers.

Almost all the candidates attempted this question and the performance was very good as over 60% of the candidates scored above 50% of the allocated marks.

The major pitfall was that some candidates did not realise that the question requested for the features peculiar to Microcomputers only. These features are those that distinguish the microcomputers from the super machine, mainframe and the mini-computers.

SOLUTION 2

2a. Serial file organisation: Accessing file serially means when files are stored, they are retrieved in the order in which they are written. Each new record goes at the end of the file. To read a record from the files, it is necessary to read through all the preceding records first.

Sequential Access: This occurs when records are written in sequence according to the record keys. Sequential access means that records in a file are accessed in a predetermined, order sequence. Sequential access allows data stored to be accessed in a fixed order.

Indexed Sequential: This is same as in sequential but with an important difference. An index is provided to enable individual records to be located. Thus the index will determine the sequence.

Random access stores record in no particular order. Random access allows stored data to be accessed directly in any order. Random access is generally called direct access.

- 2b. Magnetic Storage media include:
- i. Magnetic tape
 - ii. Magnetic disk (which include hard disk and floppy diskettes)
 - iii. Magnetic Cassette
 - iv. Magnetic Cartridge
 - v. Strip card

EXAMINER'S COMMENT

This question tests candidates' knowledge on file Organisation. It demands for the definitions of major types of file organisation. About 40% of the candidates attempted this question and the performance was very poor, as less than 10% of the candidates scored below 20% of the allocated mark.

The pitfall was that the candidates did not show any understanding of the concept of file organisation.

The candidates are advised to consult good and reliable text books like the ICAN study guide on this topic.

SOLUTION 3

- a) Database is an organized collection of logically related data
- b) Advantages of using a database include:
- i. It provide greater access to information
 - ii. It minimizes data redundancy
 - iii. It minimizes errors
 - iv. It provides for proper file monitoring
 - v. It provides for easier file maintenance and updating
 - vi. It can process a complete file serially and sequential
 - vii. It increases data integrity
 - viii. It can process a complete file randomly or selective sequential
- c) Disadvantages of using a database include:
- i. Computer virus can corrupt the data in the database
 - ii. Lack of skilled database Administrator could lead to deficiency of data in the database. Unauthorized access to the database could lead to Data corruption.
 - iii. Insecurity of information held in the database as a result of the activities of computer hackers.
 - iv. If the integrity of the Database Administrator is at stake, then information held in the database is not secured.

- d) Operations performed on a Database include:
- i. Create a record
 - ii. Delete a record
 - iii. Sorting the database
 - iv. Query or interrogating a file

EXAMINER'S COMMENTS

This question tests the candidates' understanding on the concept of Database Management. It demands for the definition, advantages and disadvantages of the database.

It also demands for the operations involved in using a database. About 40% of the Candidates attempted this question and the performance was very poor as less than 45% of the candidates scored less than 10% of the allocated mark.

The candidates did not show any understanding of the concept of database. Infact, the candidates took a database for a data store.

The candidates are advised to consult good and reliable textbooks on this topic.

SOLUTION 4

- a) Electronic mail (e-mail) is an internet application used to send text messages and attached files (which could contain video, audio and pictures) from one computer to another.
- b) Benefits of e-mail include:
- i. Messages can be read at any time
 - ii. Since transmission is electronic, it is almost instantaneous and accurate.
 - iii. e-mail reduces paper work
 - iv. Message is prepared once but can be transmitted to several different people at different locations
 - v. Access is generally restricted by the use of password
 - vi. Attachments can be used to send documents, reports and even memoranda.
 - vii. A received message can be forwarded to several other people.
 - viii. Enhances interaction among staff of the organisation
 - ix. Reduces cost of communication
 - x. Enhances decision making
 - xi. It encourages e-commerce
 - xii. Time of e-mail delivery is known

Shortcomings of e-mail include:

- i. Full import of a message may not be felt since users tend to be very informal and casual
 - ii. e-mail is good for short messages but inappropriate for message that demand detailed discussion.
 - iii. There is likelihood of information overload, for users may easily become obsessed with using the facilities i.e. spamming is common with e-mail.
 - iv. Virus infection is very common with e-mail usage
 - v. It is vulnerable to hackers.
 - vi. It could encourage abuse of company resources on personal e-mails
 - vii. Increase internet traffic due to unofficial e-mail which may reduce processing of the organisation's computers' facilities.
 - viii. It may compromise the safety and security of official information
- c) Network operating system is a system software necessary to control the access to and flow of information around a network. The purposes of network operating systems include:
- i. Provide access control and security through the use of user account with names and passwords
 - ii. Provide data and files sharing of data stored on database server or file server
 - iii. Enable communication among users' diary systems or working group software.
 - iv. Enable sharing of devices e.g. backing to tape of data on the server or printer sharing i.e. resource sharing.

EXAMINER'S COMMENT

This question tests the candidates' knowledge on the concept of e-mail. It demands for the definition, benefits and shortcomings of e-mail.

Almost all the candidates attempted this question and the performance was good as over 60% of the candidates scored above 50% of the allocated mark.

SOLUTION 5

- a) Other methods include:
- i. Interview: Interview with members of staff is the most effective method of fact-finding, it enables the analyst to overcome the fears and resistances to change that may be felt by the employee
 - ii. Questionnaires: This is useful whenever a limited amount of information is required from a large number of individuals or where the organisation is decentralized with many separate entity locations.
 - iii. Experimentation: This technique is very useful since it might be used to supplement other techniques in case of inconclusiveness.
 - iv. Documentation/File Inspection: Information related to the system are published in the secondary sources like journals.

- b) Advantages of Interview include:
- i. It is probably the most productive fact finding technique available
 - ii. It is a most widely used technique
 - iii. Information is obtained by means of conversation method upsetting the other party involved

Disadvantages of Interview

- i. The confidence of the person to be interviewed may not be gained by the analyst
- ii. There is likelihood of resistance as a result of the new system to be introduced by management
- iii. The Analyst may use technical terms, which may be confusing to the interview

Advantages of Questionnaires

- i. A small amount of information is required from a large number of persons
- ii. There is a limited amount of time and investigations cover a large number of outstations in a large decentralized organization.
- iii. The respondent is given time to assemble the required information thus saving his time

Disadvantages of Questionnaires

- i. Difficulties in designing questionnaires to obtain exactly the information required
- ii. People may object to answer numerous time consuming and tedious questions
- iii. No face to face interactions like interview

Advantages of Experimentation

- i. It gives first hand information
- ii. One is able to understand the worth of the system through personal assessment
- iii. It ensures that data collected is accurate
- iv. It allows analyst to verify and clarify the most difficult issues and problems
- v. Given all data are already collected, it can assist in the design and distribution of the questionnaire to clear doubts.

Disadvantages of Experimentation

- i. Experiments are expensive to conduct
- ii. The material and other needed resources may not be easily available to the system analyst

Advantages of Documentation/File Inspection

- i. It allows analyst to have first hand information about this system and the organisation
- ii. It helps in understanding how the current system works
- iii. It allows one to verify statements made in the interview and determine whether procedure really operate as they are described
- iv. It can provide important information as the development process continue e.g recommendation are being accepted
- v. It can provide knowledge needed to test and to install future changes and it can help build relationship with users.

Disadvantages of Documentation/File Inspection

- i. The document used may not be up-to-date
- ii. It might require going through large volume of document
- iii. The organisation might be reluctant to release vital document for verification and inspection.

EXAMINER'S COMMENT

This question tests the candidates' understanding on techniques of fact-finding in systems development. Over 60% of the Candidates attempted this question and the performance was encouraging as over 60% of the candidates scored above 50% of the allocated mark.

SOLUTION 6

- a) i. Office automation refers to the varied computer devices and software used to digitally create, collect manipulate and relay office. Information needed to accomplish tasks.
- ii. Functions involved in office automation include creation of:
- Electronic Publishing
 - Electronic Communication
 - Electronic Collaboration
 - Image processing
 - Office Management
 - Local Area Network
- b) Backup is needed for information system environment for the following reasons:
- i. Accidental data deletion
 - ii. Hard disk failure
 - iii. System software failure which requires re-installment
 - iv. Virus attack
 - v. Natural disaster
 - vi. Man-made disaster
 - vii. Intentional sabotage such as stealing or damage to system

EXAMINER'S COMMENT

The question tests the candidates' understanding on the concept of Office Automation. It demands for the definition and the major activities involved in office automation.

Almost all the candidates attempted this question and the performance was good as over 60% of the candidates scored above 50% of the allocated mark.