INSIGHT

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.

INSIGHT

FOREWORD

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

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

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

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

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

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

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

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

ASSOCIATION OF ACCOUNTANCY BODIES IN WEST AFRICA
ACCOUNTING TECHNICIANS SCHEME
PART II EXAMINATIONS - SEPTEMBER 2014

PRINCIPLES & PRACTICE OF FINANCIAL ACCOUNTING

Time Allowed: 3 Hours

Section A: PART I   MULTIPLE-CHOICE QUESTIONS   (30 MARKS)

ATTEMPT ALL 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.   In determining the initial cost of property, plant and equipment, which of the following cost items should **NOT** be considered?

    A.   Demurrage paid at the port on the asset
    B.   Remuneration paid to expert for setting up the asset
    C.   Transportation cost of the asset to the site
    D.   Training of employees that will use the asset
    E.   Borrowing cost on the asset

2.   A multi columned list of balances extracted from the ledger account in order to carry-out adjustments for preparation of the final accounts is called

    A.   Adjustment trial balance
    B.   Original trial balance
    C.   Extended trial balance
    D.   Multi column trial balance
    E.   Multi column final trial balance

3.   VAT is a consumption tax because the

    A.   Tax incidence is determined by government
    B.   Consumers goods and services are VATable
    C.   Tax incidence is on the final consumers
    D.   Tax rate is determined by government
    E.   Tax incidence is not customer friendly

4.   Reduction in the value of property, plant and equipment as a result of usage or passage of time is called

   A.   Depreciation
   B.   Diminution
   C.   Depletion
   D.   Amortisation
   E.   Wear and tear

5.   At the end of the financial year, the debit ledger balance in the subscriptions account of a Social Club will be reflected in the statement of financial position as
   A.   Subscriptions in arrears
   B.   Subscriptions carried forward
   C.   Subscriptions in advance
   D.   Subscriptions written off
   E.   Subscriptions prepaid

6.   Which of the following statement(s) is/are **TRUE** of International Financial Reporting Standards (IFRS)?

   A.   Statements of Accounting Standards (SAS) should be considered when preparing Income Statement
   B.   Financial Reporting Council/Regulatory body in your country is in charge of adoption of IFRS in the global financial market
   C.   IFRS comprise of IFRS(s), IAS(s) IFRIC and SIC

   A.   Items 1 and 2 only
   B.   Items 2 and 3 only
   C.   Item 1
   D.   Item 3
   E.   Items 1, 2 and 3

7.   Which of the following is **NOT** compatible under the OLD GAAP and IFRS?

   A.   Balance sheet and statement of financial position
   B.   Profit and loss accounts and Statement of profit or loss and other comprehensive income
   C.   Cash flow statement and statement of cash flows
   D.   Value Added Statement and Statement of Equity
   E.   Notes to the Account and Explanatory Notes

8. A building valued at ₦50 million has as part of its components protective roofing which was valued at ₦10 million with a useful life of 10 years but it was estimated that the whole building would have a life span of 50 years.
   What is the annual depreciation of the componentised property?

   A. ₦5,500,000
   B. ₦1,800,000
   C. ₦1,090,909
   D. ₦1,000,000
   E. ₦500,000

9. The conceptual framework issued by International Accounting Standards Board (IASB) deals with the following **EXCEPT**

   A. Elements of financial statements
   B. Qualitative characteristics of financial statements
   C. Objectives of financial Statements
   D. Concept of capital and capital maintenance
   E. First Time adoption of IFRS

10. Which of the following is an example of non-current Assets?

   A. Inventory
   B. Investment property
   C. Trade and other receivables
   D. Cash and cash Equivalent
   E. Provisions

11. The balances in the current accounts of partners must be transferred to the capital accounts of the partners in the following situations, **EXCEPT**

   A. Amalgamation of partnerships
   B. Conversion of partnership to limited liability company
   C. Dissolution of partnership
   D. Retirement of a partner
   E. Change in profits sharing ratio of partners

12. When a partnership is converted to limited liability company, the excess of the purchase price over the partnership assets taken over is

   A.   Goodwill
   B.   Consideration
   C.   Share premium
   D.   Investment
   E.   Gain

13. Kweku and Kwame have been trading in partnership for many years and were sharing profits and losses in ratio 3:2. Agodo was admitted on 1 October 2013. The profit and loss sharing ratio was adjusted to 4:3:1 respectively. Both Kweku and Kwame guaranteed Agodo a minimum profit of GH¢23 million.
   How much is the share of profit of Kweku when the total divisible profit amounted to GH¢108 million?

   A.   GH¢54 million
   B.   GH¢49 million
   C.   GH¢40.5 million
   D.   GH¢38 million
   E.   GH¢33 million

14. The profits earned by a bar run by a Social club should be

   A.   Distributed among members
   B.   Transferred to receipt and payment account
   C.   Transferred to accumulated funds
   D.   Credited to income and Expenditure account
   E.   Donated to charity

15. In which of the following Not-for-profit organisation's accounts would you make adjustment for accruals and prepayments

   I.   Subscriptions account
   II.   Income and Expenditure account
   III. Receipts and payment account
   A.   I and II
   B.   II and III
   C.   I and III
   D.   I, II and III
   E.   III

16. The statement of cash flows of an organisation provides users with the following information **EXCEPT**

    A. Reconciliation of the profit or loss with the cash flow
    B. Assess the ability of the organisation to meet its debts obligations
    C. Determine the profit made by the organisation
    D. Estimate future cash flows
    E. Assess the ability of the organisation to finance its current operations using its own cash or external sources of cash

17. KATSAWA Ltd issued 5,000 ordinary shares of L$0.50 for L$6,000. What are the entries for share capital and share premium in the statement of financial position?

	Credit Share Capital Account	Credit Share Premium Account
A.	L$1,000	L$5,000
B.	L$2,500	L$3,500
C.	L$3,500	L$3,500
D.	L$5,000	L$1,000
E.	L$6,000	L$1,000

18. How is a bank overdraft classified in the statement of financial position?

    A. Non-current Asset
    B. Current Asset
    C. Current Liability
    D. Non-current Liability
    E. Intangible Asset

19. Which of the following describes the carrying amount of a non-current Asset?

    A. Its cost less annual depreciation
    B. Its cost less accumulated depreciation
    C. Its net realizable value
    D. Its replacement value
    E. Its purchase price

20. The cost of goods sold is calculated as

    A.   Opening Inventory + Purchases – closing inventory
    B.   Opening inventory + Purchases + closing inventory
    C.   Opening inventory + closing inventory - purchase
    D.   Closing inventory + purchase – closing inventory
    E.   Purchase + closing inventory + opening inventory

21. Which of the following is **NOT** related to segmenting Construction contract?

    A.   Separate proposal has been submitted for each asset
    B.   Cost of segmented contract must be similar to the total cost of the whole contract of the company
    C.   Each contract has been subjected to separate negotiation
    D.   Both contractor and contractee were able to accept or reject that part of the contract relating to each asset
    E.   The costs and revenues of each asset are separately identifiable

22. In hire purchase transactions, sum-of-the-year-digit method involves hire-purchase interest being written off over the period of hire purchase in a/an

    A.   Reducing manner based on digit of the year affected
    B.   Increasing manner based on digit of the year affected
    C.   Reducing manner at fixed rate based on digit of the year affected
    D.   Increasing manner at fixed rate based on digit of the year affected
    E.   manner whereby fixed rate of interest is charged on outstanding balance at the due date of installment

23. State the accounting entry for the returns inward in the ledgers if the sales transaction is on credit

    A.   Debit Returns Inward Account; Credit Accounts receivable Accounts
    B.   Debit Accounts Receivable Accounts; Credit Returns Inward Account
    C.   Debit Returns Inward Account; Credit Sales Account
    D.   Debit Returns Inward Account; Credit Purchases Account
    E.   Debit Purchases Account; Credit Returns Inward Account

24. In Container accounting, which of the following is **NOT** an account to be opened when using Containers Profit and Loss Account method?

    A. Containers Stock Account
    B. Containers Suspense Account
    C. Container's Profit and Loss Account
    D. Container's Trading Account
    E. Containers sent to customers Account

25. State the accounting entries for goods purchased for cash by the venturer

    A. Debit Cash Account; Credit Joint Venture Account
    B. Debit Joint Venture Account creditors; Credit Cash Account
    C. Debit Joint Venture Account; Credit Cash Account
    D. Debit Cash Book; Credit Joint Venture Account
    E. Debit Joint Venture debtors Account; Credit Joint Venture Account

26. The accounts of not-for profit organisation include the following **EXCEPT**

    A. Statement of Financial position
    B. Statement of Profit or loss
    C. Receipts and Payments Account
    D. Subscription Account
    E. Income and Expenditure Account

27. Which of the following is peculiar to a Partnership?

    A. Shareholder fund
    B. Equity
    C. Dividends
    D. Interest on Capital
    E. Right issues

28. Which of the following clauses in a Partnership Deed will **NOT** have accounting implication?

    A. The amount of capital to be contributed by each partner
    B. The ratio of sharing profits and Losses
    C. How the books of accounts would be kept
    D. The rate of interest on capital
    E. The rate of interest on loans advanced by partners

Use the following information to answer questions 29 and 30

Drogba, Towre and Troore entered into a partnership with effect from 1 January, 2013 with total initial capital of Le60 million but without a formal partnership agreement.

29. Which of the following rules is **NOT** applicable to the partnership?

   A.   Every partner may take part in the management of the firm
   B.   Partners share of profits and losses will be equal
   C.   Each partner's contribution to the business capital shall be Le20 million
   D.   Any advance or payment in excess of Le20 million capital contributions will attract an interest at the rate of 10%
   E.   None of the partners shall be entitled to remuneration.

30. The Trading and Profit and Loss Account of the partnership for the year ended 31 December, 2013 showed a Net profit of Le750,000.

   How much should be the Drogba's share of profit for the year?

   A.   Le375,000
   B.   Le312,500
   C.   Le250,000
   D.   Le125,000
   E.   Le62,500

SECTION A: PART II   SHORT-ANSWER QUESTIONS   (20 Marks)

ATTEMPT ALL QUESTIONS

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

1. Babu Enterprises exported GH¢1,500,000 goods to a customer in Togo. What is the VAT amount to be added to the invoice value of the goods, if the VAT rate is 5%

2. What is the gross profit on sales worth GH¢240,000, if gross profit is $33\frac{1}{3}\%$ on cost of goods sold?

3. When the closing capital of an enterprise is more than the opening capital. The difference is................

4.   What is the main purpose of preparing the Receipts and Payments in accounts of a not-for-profit organisation?

5.   The amount at which an asset is recognized after deducting any accumulated depreciation and impairment losses is called………………

6.   Watergate Ltd electricity expenses ledger account for the year ended 30 June 2013 are as follows:

	L$
Prepayment b/Fwd	2,200
Cash paid	2,160
Accrual C/Fwd	2,600

What is the amount charged as electricity expenses in the statement of profit   or loss for the year ended 30 June, 2013?

7.   According to IAS 16 on Property Plant and Equipment state **ONE** factor that should be considered when estimating the useful life of a depreciable asset

8.   State **TWO** reasons why Asset Register balance may not agree with non-current asset balance in the ledger

9.   Bibi and Kuku are partners who shared profit/losses equally. Bibi gave a loan of ₦15 million to the partnership at 10% per annum. State the double entry for the interest on the loan.

10.   State the basic income item that is added to the net profit in the books of a partnership firm to arrive at divisible profit

11.   What is the technical name for the basic document that sets out the conditions under which partners would carry on the business of the partnership?

12.   What is the effect of not adjusting for subscription received in advance on income and expenditure account?

13.   IAS 7 requires that statement of cash flows could be prepared using………….and ……………methods.

14.   The amount by which the carrying amount of an asset or a cash generating unit exceeds the recoverable amount is known as………………………

15.   In the statement of comprehensive income, expenses can be classified according to their……………………… and nature basis.

16. Direct material, direct labour and direct expenses in manufacturing account is referred to as..........................

17. In Joint Venture business, the memorandum Joint Venture Account is to determine........................

18. State any **TWO** methods of Inventory count........................

19. In relation to Construction contract account, state **TWO** methods of revenue and cost recognition...........................

20. A credit transaction system where ownership resides with the vendor until the final installment is paid by the buyer is called........................

SECTION B   **ATTEMPT ANY FOUR QUESTIONS**   **(50 Marks)**

QUESTION 1

Akin Fani an artisan failed to keep proper books of accounts for the year ended 31 December, 2013. A summary of his cash/bank transactions for the year are as follows:

	L$		L$
Balance b/d	28,000	New machinery	100,000
Capital	200,000	Purchases	34,000
Balance of proceeds	86,480	Trade payables	47,600
		Machinery expenses	27,600
		Rent & Rates	20,000
		Transfer to private account	48,000
		Balance c/d	37,280
	314,480		314,480

Additional information:

i. Payments from proceeds; weekly drawings of L$1720, Electricity L$8480, Wages L$97,440 and sundry expenses L$3,120.

ii.

	1 January	31 December
	L$	L$
Amount Outstanding:		
Electricity	2,840	2,760
Trade Payables	8,360	9,600
Inventory	63,800	70,000

iii. The new machinery is to be written down to L$90,000 and the old machinery is to be written down to L$56,000

You are required to:

Prepare the Income Statement in vertical format for the year ended 31 December, 2013. Show all workings. **(12½ Marks)**

QUESTION 2

"International Accounting Standards Board (IASB) conceptual framework describes the elements of Financial statements as broad classes of financial effects of transactions and other events."

a. Explain **FIVE** elements of financial statements **(5 Marks)**

b. State **FOUR** models of measurements of the elements of financial statements **(4 Marks)**

c. According to the provisions of IAS 1, state the content of a complete set of financial statements as required IFRS **(3½Marks)**
(Total 12½ Marks)

QUESTION 3

Some organisations are formed mainly to enhance the social status, spiritual and material welfare of members. They also provide essential services to the society at little or no cost and create avenue for recreational activities. These categories of organisations are described as Not-for-profit organisations

You are required to:

a. State any **FOUR** features of Not-for-profit organisations **(4 Marks)**

b. i. State any **FOUR** sources of income for such organisations **(4 Marks)**
   ii. State any **THREE** of its uses **(1½ Marks)**

c. Outline any **THREE** main differences between receipts and payments account and the income and expenditure account **(3 Marks)**
(Total 12½ Marks)

QUESTION 4

The following balances were extracted from the books of Amatex Plc, a manufacturer of leather materials in Accra, Ghana at 31 December, 2013

		GH¢ '000
Raw materials purchased		5,808
Manufacturing wages		2,831
Factory sundry expenses		1,518
Revenue		20,250
Inventory at 1 January, 2013	- Raw materials	1,269
	- Work-in-progress	460
	- Finish goods	1,857
Depreciation	- Plant & machinery	1,134
	- Delivery vans	456
	- Office equipment	121
Repairs of plant & machinery		453
Factory power		456
Foreman's salary		380
Advertising		533
Discount allowed		228
Office expenses		437
Rent and rates		1,260
Salesmen's salaries		963
Carriage inward on raw materials		408
Other direct factory expenses		315
Office salaries		775

You are given the following additional information:

Rent and rates should be apportioned as follows:

Factory	50%
Administration	30%
Selling and distribution	20%
Closing Inventory at 31 December, 2013 were:	

	GH¢
Raw materials	1,647
Work-in-progress	368
Finished goods	2,186

You are required to:

Prepare the statement of Profit or Loss Account of Amatex Plc for the year ended 31 December, 2013   (12¹/₂ Marks)

QUESTION 5

Abubakar leased an expanse of land from Garba for stone crushing. The terms of the lease provide that:

a.   The lessee should pay a royalty of Le400 for every ton of gravel produced
b.   The minimum royalty should be Le200,000 per annum
c.   The lessee could recoup in the second and third years any short workings in the first year of production

Details of production of Abubakar for the first four years are as follows:

Year ended 31 December	Production (Tons)
2007	180
2008	590
2009	700
2010	900

You are required to:

Prepare the necessary ledger to record the above transactions in respect of royalties in the books of Abubakar which are closed on 31 December of each year.
                                                                                (12¹/₂ Marks)

QUESTION 6

The Accountant of Nanah Limited gave you the following summary of the company's activities for the year ended 31 December, 2013

	₦
Inventory at the beginning, at invoice price	1,500,000
Inventory at the close of the period, at invoice price	1,200,000
Goods sent to branch at invoice price	10,000,000
Credit sales	25,000
Returns to head office at invoice price	25,000
Cash sales	9,000,000
Invoiced value of goods stolen	100,000
Normal loss due to wastage	150,000
Cash takings stolen	40,000
Allowances of selling prices	50,000

Nanah Limited invoices its Lokoja branch at cost plus 33⅓%.

You are required to:

Prepare the necessary accounts in the Head office books in the light of the above

(12½ Marks)

SUGGESTED SOLUTIONS

SECTION A

PART I   MULTIPLE-CHOICE QUESTIONS

1.   D

2.   C

3.   C

4.   A

5.   A

6.   D

7.   D

8.   B

9.   E

10.   B

11.   E

12.   A

13.   B

14.   D

15.   A

16.   C

17.   B

18.   C

19.   B

20.   A

21.   B

22.   A

23.   A

24.   D

25.   C

26.   B

27.   D

28.   C

29.   D

30.   C

TUTORIALS

8. Roofing $\dfrac{10,000,000}{10}$ = ₦1,000,000

    Other part of building = $\dfrac{40,000,000}{50}$ = $\dfrac{800,000}{1,800,000}$

30. Net Profit for the year – CFA 750,000

    Profit to be share equally $\dfrac{750,000}{3\,CFA}$ = 250,000

13. Sasa's Share = ₦85 x $\dfrac{4}{7}$ = ₦49m

EXAMINER'S COMMENT

The thirty multiple-choice questions were attempted by all the candidates and 75% of them put up good performance by scoring above 50% of the marks allocated to the questions.

PART II: SHORT-ANSWER QUESTIONS

1. NO VAT (NIL) All export goods are zero rated VAT goods

2. GH¢60,000

3. Net Profit

4. To ascertain Cash/Bank balance

5. Carrying Amount

6. L$6,960

7. (i)   Expected Physical Wear and Tear

    (ii)   Obsolescence

    (iii)   Legal or other limits on use of the assets

8. (i)   Assets stolen or damaged

    (ii)   New assets purchased not yet recorded in Register

    (iii)   Improvement in Assets not yet recorded

9.   DR: Profit or loss Account with ₦1.5m

      CR: Current Assets with ₦1.5m

10.   Interest on drawings

11.   Partnership deed/agreement

12.   Income/Surplus would be overstated

13.   Direct and Indirect method

14.   Impairment Loss

15.   Functions

16.   Prime Cost

17.   The Profit or Loss on the venture

18.   (i)   Annual Inventory taking method

      (ii)   Periodic Inventory taking method

      (iii)   Continuous Inventory taking method

19.   (i)   Percentage of completion method

      (ii)   Completed Contract method

20.   Hire Purchase/Lease

TUTORIALS

2. $33\frac{1}{3}$ on cost of goods sold = 25% on sales

      25% × GH¢240,000 = ₦60,000

6.   L$2,200 + L$21,600 – L$2,600 It is not prepayment, i.e. it shall be added.

      L$2,200 + L$1,160 + L$2,600 = LS6,960

EXAMINER'S COMMENT

The twenty short-answer questions were attempted by all candidates and about 75% performed poorly. About 25% of the candidates scored above half of the marks.

SOLUTION 1

Akin Fani
Income Statement for the year ended
31 December, 2013

	N	N
Sales		284,960
Opening Stock	63,800	
Purchases	82,840	
	146,640	
Less Closing Stock	70,000	
		76,640
		208,320
Depreciation:		
New Machinery (₦100,000 – ₦90,000)	10,000	
Machinery expenses	27,600	
Rent & Rates	20,000	
Electricity	8,400	
Wages	97,440	
Sundry Expenses	3,120	166,560
Net profit		41,760

Workings   **Trade Payables Account**

	N		N
Cash	47,600	Balance b/d	8,360
Balanced c/d	9,600	Purchases	48,840
	57,200		57,200

Purchases Account

	N		N
Trade Payables	48,840	Income Statement	82,840
Cash	34,000		
	82,840		82,840

Sales

	₦		₦
Income Statement	284,960	Cash	86,480
Balanced c/d		Drawing(₦1720 x 52)	89,440
		Electricity	8,480
		Wages	97,440
		Sundry Expenses	3,120
	284,960		284,960

EXAMINER'S COMMENT

The question which tests candidates' understanding of preparation of final account from incomplete records was attempted by 50% of the candidates. The performance was generally poor. About 40% of the candidates who attempted it scored less than average marks.

SOLUTION 2

2a.   **ELEMENTS OF FINANCIAL STATEMENTS**

i.   ASSETS: - These are resources controlled by the entity as a result of past events and from which future economic benefits are expected to flow to the entity.

ii.   LIABILITIES: - These are present obligations of an entity arising from past events, the settlement of which is expected to result in an outflow from the entity of resources embodying economic benefit.

iii. EQUITY: - The residual interest in the assets of an entity after deducting all of its Liabilities may also be referred to as shareholders fund.

iv.   INCOME: -   This is the increase in economic benefit during the accounting period in form of inflows or enhancement of assets or decrease of liabilities that result in an increase in equity. Income comprises of both revenue and gains.

v.   EXPENSES:- This is the decrease in economic benefits during the accounting period in form of out flows or depletion of assets or incurrencies of Liabilities that result in decrease in equity, other than those relating to distributions to equity participants

2b.   MODEL OF MEASUREMENTS OF

ELEMENTS OF FINANCIAL STATEMENTS

The models of measurements of elements of Financial Statements are as follows:-

i.   Historical Costs
ii.   Current Costs
iii.   Realizable (Settlement) value
iv.   Present value

2c.   COMPLETE SETS OF FINANCIAL STATEMENT ACCORDING TO IFRS

A complete set of financial statements comprises the following:-

Statement of financial position

i.   Statement of comprehensive income
ii.   Statement of changes in equity
iii.   Statement of cash flows
iv.   Notes to the financial statement that contains accounting policies and other explanatory notes.
v.   Statement of Financial position for the beginning of earliest comparative period when an entity applies an accounting policy retrospectively makes a retrospective restatement of items in its financial statements.

EXAMINER'S COMMENT

The question which tests the candidates' knowledge of the elements of financial statements was attempted by about 45% of the candidates and they put up poor performance. The general score of the candidates was below average.

SOLUTION 3

(a)   Features of Not-for-Profit Organisations

i.   Membership of the organisations is determined by prescribed moral and financial conditions.

ii.   They are formed mainly to cover for welfare of members and create avenue for better life for the society at no cost.

iii.   They derive their income mainly from members' subscriptions and other levies.

iv.   Their activities are regulated by constitutions including policies on financial transactions.

v.   The accounts of the organisation are self regulated not legally regulated.

vi.   Inflow and outflow of cash are recorded in receipts and payments account.

vii.   Network of the organisations is described as accumulated fund.

viii.   Surplus or deficit is obtained through the income and expenditure account.

b.   Sources of Income of Not-for-profit Organisations

  i.   Membership subscriptions and other levies
  ii.   Income from bar or restaurants
  iii.   Income from social activities such as dance, parties, matches or competitions.
  iv.   Subventions
  v.   Donations
  vi.   Income from organizing lectures and symposia

Uses of the funds

  i.   For publicity of the activities of the organisation
  ii.   Donation to charity
  iii.   To organize activities that improve welfare of the public
  iv.   To grant loan or other helps to members in distress
  v.   To meet expenses of bar, restaurant and guest house
  vi.   Administration and distribution expenses.

c. **Main differences between receipts and payments account and income and expenditure account**

i. Receipts and payments accounts are maintained on cash basis but income and expenditure are maintained on accrual basis.

ii. Receipts and Payments account does not include national charges whereas income and expenditure account records national charges such as depreciation.

iii. Payments for capital expenditure and receipts of capital incomes are recorded in the receipts and payments account whereas only revenue items are included in income and expenditure account.

iv. The objective of preparing receipts and payments account is to ascertain cash in hand or at bank but the objective of income and expenditure is to ascertain surplus or deficit.

EXAMINER'S COMMENT

This question which tests the Candidates' knowledge of not-for-profit organisation was attempted by 95% of the candidates. Good performance was put up by about 85% of the candidates. The few with poor performance were unable to understand the difference between Receipts and payments account and Income and Expenditure account.

SOLUTION 4

AMATEX PLC
Manufacturing, Trading Profit or Loss Account
For the year ended 31 December 2013

	GH¢000	GH¢000
Opening stock of raw materials		1,269
Purchases of raw materials		5,808
Carriage inward on raw materials		408
		7,485
Closing stock of raw materials		(1,647)
COST OF RAW MATERIALS USED		5838
Manufacturing wages		2831
Other direct factory expenses		315
PRIME COST		8,984

Factory overheads

Factory sundry expenses	1518	
Depreciation of Plant & Machinery	1134	
Repairs of plant & Machinery	453	
Factory power	456	
Foreman's salary	380	
Rent and rates (50% x 1260)	630	4571
		13,555
Opening work-in-progress	460	
Closing work-in-progress	(368)	92
COST OF GOODS SOLD		13,646
Revenue		20,250
Less: Cost of goods sold:		
Opening stock of finished goods	1,857	
Cost of goods sold	13,646	
Cost of goods available for sale	15,503	
Closing stock of finished goods	(2,186)	13,317
GROSS PROFIT		6,932

	GH¢ '000	GH¢ '000
Gross Profit		6,932
Administrative expenses		
Depreciation of office equipment	121	
Office Expenses	437	
Rent and Rates (30% x1260)	378	
Office Salaries	775	(1,711)
Selling and Distribution Expenses		
Depreciation: Delivery Van	456	
Advertising	533	
Discount allowed	228	
Rent and Rates (20% x 1260)	252	
Salesman salaries	963	(2432)
NET PROFIT		2789

EXAMINER'S COMMENT

The question on Manufacturing Account was attempted by 95% of the candidates and good performance was put up. About 70% of them scored high marks. Few Candidates with poor performance failed to segregate the various expenses heads required.

SOLUTION 5

Abubakar's Records
Royalty Payable Account

Year		Le	Year		Le
2007	Landlord	72,000	2007	Production	72,000
2008	Landlord	236,000	2008	Production	236,000
2009	Landlord	280,000	2009	Production	280,000
2010	Landlord	360,000	2010	Production	360,000

Garba Account

Year		Le	Year		Le
2007	Bank	200,000	2007	Royalty Payable	72,000
				Short workings	128,000
		200,000			200,000
2008	Bank	200,000	2008	Royalty Payable	236,000
	Short workings	36,000			
		236,000			236,000
2009	Bank	200,000	2009	Royalty payable	280,000
	Short workings	80,000			
		280,000			280,000
2010	Bank	360,000	2010		360,000

Short Workings Account

		Le			Le
2008	Garba	128,000	2008	Garba	36,000
				Balance c/d	92,000
		128,000			128,000
2009	Balance b/d	92,000	2009	Freetown	80,000
				Income Statement	12,000
		92,000			92,000

EXAMINER'S COMMENT

The question on Royalty accounts was attempted by 75% of the candidates, while 45% scored above average. Some of the candidates put up poor performance as they could not present the necessary ledger accounts in the books of the lessee as required by the question.

SOLUTION 6

Branch Stock Account

	N		N
Stock balance b/f	1,500,000	Receivable Accounts Sales	25,000
Goods sent to branch	10,000,000	Goods sent to branch(Returns)	25,000
Branch Adjustment Account	40,000	Cash Sales	9,000,000
Apparent profit		Defalcation Account	75,000
		Branch Inv. Adj. Account	25,000
		Branch Defalcation Account	150,000
		Branch Adj. Account	50,000
		Defalcation Account	40,000
		Inventory Deficiency	950,000
		Closing Inventory c/d	1,200,000
	11,540,000		11,540,000
b/d	1,200,000		

Branch Inventory Adjustment Account

	N		N
Branch Inv. A/c (Goods stolen)	25,000	Inventory bal. b/f	375,000
Branch Inv. (Normal loss)	150,000	Branch Inv. A/c	2,500,000
Branch Inv. (Authorised reduction)	50,000	Branch Inv. A/c (Apparent point)	40,000
Inventory Deficiency	950,000		
Closing Inv. c/d	300,000		
Profit and Loss	1,440,000		
	2,915,000		2,915,000

Goods sent to Branch Account

	N		N
Branch Inventory Acct. (Returns)	375,000	Branch Inventory A/c	7,500,000

Defalcation Account

	N		N
Branch Inventory Account	75,000		
Branch Inv. Account	40,000	P & L	115,000
	115,000		115,000

EXAMINER'S COMMENT

The straight forward question on branch account was attempted by 55% of the candidates and about 60% of those who attempted scored average marks.

AT/142/PII.6
ASSOCIATION OF ACCOUNTANCY BODIES IN WEST AFRICA
ACCOUNTING TECHNICIANS SCHEME
PART II EXAMINATIONS - SEPTEMBER 2014

PUBLIC SECTOR ACCOUNTING

Time Allowed: 3 hours

SECTION A: PART I   MULTIPLE-CHOICE QUESTIONS   (30 Marks)

ATTEMPT ALL 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. Which of the following instruments is **NOT** designed to regulate accounting functions in government?

    A.   Finance (Control and Management) Act, 1958 as amended by CAP F26 LFN 2004
    B.   The Audit Act of 1956
    C.   Financial Regulations
    D.   The Constitution of the Federal Republic of Nigeria, 1999
    E.   Government Gazettes

2. On which of the following laws rests the fundamental basis of government accounting in Nigeria?

    A.   The Economics and Financial Crimes Commission Act 2005
    B.   The Public Procurement Act 2007
    C.   The Annual Appropriation Act
    D.   The Finance (Control and Management) Act of 1958 (CAP F26 LFN 2004)
    E.   The Audit Ordinance (or Act) of 1956.

3. Section 80(1) of the constitution of the Federal Republic of Nigeria, 1999 requires that all revenues should be paid into the Consolidated Revenue Fund (CRF). Which of the following is an exemption granted by Section 162?

    A.   Royalties from mining
    B.   Licenses and internal revenue
    C.   Direct taxes
    D.   Indirect taxes
    E.   Armed Forces taxes

4. The powers of the Accountant-General of the Federation include the following **EXCEPT**

    A. Power of access to books and records of every ministry at any reasonable time
    B. Power to request for information and explanation necessary for his duties
    C. Power to carry out annual and supplementary estimates in any ministry
    D. Power to carry out special investigation in any ministry
    E. Power to carry out ad-hoc investigation in any ministry

5. The Accountant-General of the Federation is appointed by

    A. The President on the recommendation of the National Judicial Service Commission
    B. The President on the recommendation of the National Assembly
    C. The President on the recommendation of the Federal Civil Service Commission
    D. The President on the recommendation of the Financial Reporting Council
    E. The President on the recommendation of the Federal Service Commission

6. Which of the following officers is **NOT** a member of the Executive arm of Government?

    A. The President
    B. The State Governor
    C. The President of the Senate
    D. A Local Government Chairman
    E. A Minister

7. Financial Authorities legally empower and guide all public officers in carrying out governments' financial transactions. Such financial transactions include the following **EXCEPT**

    A. Receipts
    B. Custody of and accounting for government revenue
    C. Procurement
    D. Custody and utilization of government stores and Assets
    E. Registration of Cashiers of government revenue

8. All the following are statutory regulations that affect receipts and payments of Government money **EXCEPT**.

    A. Financial Regulations 2009
    B. Companies and Allied Matters Act, (CAMA), 2004
    C. Government Gazette
    D. Finance (Control and Management) Act of 1958
    E. The Constitution of the Federal Republic of Nigeria, 1999

9. Which of the following is **NOT** an external user of Government Accounting information?

    A. Suppliers
    B. Employees
    C. Government other than the reporting Government
    D. Investors
    E. The Public

10. Budgets are used as a measure for ………………..in the Public Sector.

    A. Profit earnings
    B. Distribution of resources
    C. Profit Ratio
    D. Debt analysis
    E. None of the above

11. A Government budget usually shows authorized appropriation and

    A. Fixed assets schedule
    B. Cashflow statement
    C. Profit forecast
    D. Estimated loans
    E. Estimated revenues

12. Which of the following is **NOT** a basic technique of preparing budget?

    A. Traditional incremental technique
    B. Zero Base Budgeting method
    C. Cash inflow method
    D. Programming, Planning and Budgeting System
    E. Line -by -line method

13.   The independent organ of Government that reviews all contracts awarded which are of significant values is the

A.   Procurement Body
B.   Board of Enquiry
C.   Budget Monitoring and Price Intelligence Unit
D.   Board of Survey
E.   Federal Executive Council

14.   Which of the following will **NOT** be contained in the payment voucher relating to contracts?

A.   The name of the contractor
B.   The vote of charge
C.   The name of members of the Tenders Board
D.   The name of project
E.   Certificate number that is being paid

15.   Statement 3 of Federal Government of Nigeria Financial statements is a statement of

A.   Assets and Liabilities
B.   Cash flows
C.   Responsibility for the Financial Statements
D.   Consolidated Revenue Fund
E.   Capital Development Fund

16.   Which of the following is **NOT** a characteristic of cash basis of accounting?

A.   Very simple to develop
B.   Based on mere recording of cash receipts and payments
C.   The concept does not make for proper measurement of performance
D.   It recognizes the time when resources are used
E.   Financial statements generated with this technique are not complicated

17. The functions and responsibilities of finance officers in public sector are spelt out in the

    A. Financial Regulations
    B. Civil Service Rules
    C. Appropriation Bills
    D. Cashflow Statement
    E. None of the above

18. A complete set of financial statements under International Public Sector Accounting Standard (IPSAS) includes the following **EXCEPT**:

    A. Statement of financial position
    B. Statement of profit or loss
    C. Statement of financial performance
    D. Cash flow Statement
    E. Accounting policies and notes to the financial statements

19. What are the two documents that must be prepared before stores can be released by the store-keeper.

    A. Unallocated Stores and Store Ledger
    B. Bin card and Stores Transfer Requisition
    C. Local Purchase Order and Stores Delivery Note(SDN)
    D. Store Request Form(SRF) and Store Issues Voucher (SIV)
    E. Store Transfer Requisition and Store Delivery Note(SDN)

20. The International Public Sector Accounting Standard (IPSAS) which deals with inventories is

    A. IPSAS 1
    B. IPSAS 2
    C. IPSAS 12
    D. IPSAS 10
    E. IPSAS 5

21. Unserviceable and obsolete stores shall be posted in a ledger supported by.

    A. Consignment Note
    B. Store Issue Voucher
    C. Receipt Book Issue Note
    D. Store Receipt Voucher
    E. Store Requisition Note

22. Which of the following is **NOT** a circumstance for setting up a Board of Enquiry for investigating an abnormal situation in the public service?

    A. If fraud is probable
    B. If loss is substantial
    C. If collusion is suspected
    D. If several officers are involved
    E. If the identity of the Officer responsible is disputable

23. The International Public Sector Accounting Standard (IPSAS) No 2, deals with the presentation of **ONE** of the following:

    A. Borrowing cost
    B. Construction contracts
    C. Inventories
    D. Cash flow statements
    E. Related Party Disclosures

24. Which of the following is **NOT** a function of the Accountant-General of the Federation?

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

25. The Officer that is required to report on the strength of the internal control system is

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

26. A public servant that is missing will be declared dead if a board of enquiry set up by the commission concluded that there is reasonable basis to conclude that he is dead after................year(s).

   A. Seven
   B. Six
   C. One
   D. Two
   E. Three

27. Where an employee transfers his service or employment from one employer or organization to another, his Pension Savings Account shall be

   A. Changed
   B. Consolidated
   C. Retained
   D. Abandoned
   E. Closed

28. Pension Account Examiners are appointed by the

   A. Head of Service
   B. Accountant-General
   C. Auditor-General
   D. Pension Commission
   E. Attorney-General

29. Which of the following ministries listed below has a representative on the Board of the Economic and Financial Crimes Commission (EFCC)?

   A. Ministry of Trade and Investment
   B. Ministry of Justice
   C. Ministry of Education
   D. Ministry of Agriculture
   E. Ministry of Works

30. The Corrupt Practices and Other Related Offences Act, 2000 requires the Chairman of the Commission to hold office for a maximum of.........years aggregate on re-appointment.
   A. 4
   B. 5
   C. 8
   D. 10
   E. 12

SECTION A: PART II   SHORT-ANSWER QUESTIONS   (20 Marks)

ATTEMPT ALL QUESTIONS

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

1.   The supreme legal instrument which governs the general framework for financial management in government is the ....

2.   The Act which regulates the collection, custody and operation of government funds is known as.......................

3.   Mention any **TWO** users of government accounting information.

4.   The sector of the economy concerned with the transaction of government is referred to as the..................

5.   The **TWO** categories of officers saddled with the responsibility of managing government funds and properties are.................... and ....

6.   The ministerial phase is the stage at which Local Government Council estimates are screened by the ....

7.   What is the term for ensuring strict compliance with the openness, competition and cost accuracy rules and procedures in contract awards in government?

8.   The authority in matters of national accounting is vested in ....

9.   Where Budgeted expenditure is higher than estimated income, the result is ....

10.   The organ of the National Assembly which is responsible for the handling of the queries raised by the Auditor-General is ....

11.   Prior to year 2014, the Accounting basis adopted by the Government is ....

12.   The concept that recognizes the period when revenue is deemed to have been earned rather than when it is received is known as.......................

13.   Stores and materials issued within the same store for conversion or manufacture shall be supported by.......................

14.   All movable property purchased with public fund or otherwise acquired by the Government is called.......................

15.   State any **ONE** of the functions of Boards of Survey and Enquiry.

16.   The process of transferring funds from a sub-head with surplus fund to another under same head is ....

17. The accounts which receive all the nationally distributable revenue among the three tiers of Government is B ....

18. Every employer, Pension Fund Administrator or Custodian should provide books, accounts, documents, vouchers, information and explanations on request to .... for the purpose of control under Pension Reform Act 2004.

19. The income and expenditure items not budgeted for but listed are termed ....

20. The body charged with the responsibility of ensuring the diligent pursuit of the country's public revenue and expenditure is known as ....

SECTION B: **ATTEMPT ANY FOUR QUESTIONS**   **(50 Marks)**

QUESTION 1

There are regulatory and constitutional provisions guiding revenue collections and disbursement of government funds at the Federal, State and Local Government Levels, that ensure probity, transparency and accountability.

Required:

Explain any **FIVE** of such provisions.   **(12½ Marks)**

QUESTION 2

a. The approved budget of Ministry ABC is ₦350 million, out of which ₦90 million was released in the last quarter.

In the second quarter ₦80 million has been released in ratio 50:50 for capital and recurrent expenditure.

Required:

Allocate the releases into the following sub-heads

Sub-head 1	20%
Sub-head 2	15%
Sub-head 3	10%
Sub-head 7	25%
Sub-head 6	15%

The balance for the other subheads should be allocated later
(Show all your workings) (9½ Marks)

b. State any **THREE** major levels that the budget approval passes through.

(3 Marks)

(Total 12½ Marks)

QUESTION 3

The permanent Board of Survey and Enquiry was established and constituted to investigate the loss of funds (excluding losses being dealt with in Financial Regulations 2502 and 2520) materials, assets etc-FR 2531.

Required:

a. List the Officers to whom the covering orders of the Board of Enquiry are forwarded. (2 Marks)

b. Enumerate any **SEVEN** items of the contents of the Board of Enquiry Report.

(10 ½ Marks)

(Total 12½ Marks)

QUESTION 4

You are the Chief Accountant of Oshodi Government Vocational Centre established by the Government to take care of the underprivileged children. The principal invited you to solve the following problems that were observed by the former External Auditors.

i. It was observed that cash amounting to ₦150,000 was missing which might be due to shortfall in cash collected from the bank. The bank refused to take responsibility for this.

ii. The sum of ₦400,000 was overpaid to the food contractor through bank transfer. This amount represents the withholding tax due on the supply.

iii. It was also observed that last year the sum of ₦300,000 was paid for capital expenditure to another contractor. This was due to undeducted withholding tax.

iv. It was discovered that the Bursar fraudulently overpaid a Contractor by the sum of ₦500,000 for the construction of special laboratory which was financed from the foundation trust fund of the School.

v.   The amount of advance outstanding against Chief Ayo, the former principal of the Centre, valued at ₦78,000 was resolved to be written off since the man is now dead.

Required:

a.   Prepare Journal Vouchers to effect the corrections of the above observed anomalies.   (10 Marks)

b.   What procedure should be initiated to clear the entries?   (2½ Marks)
                                                              (Total 12½ Marks)

QUESTION 5

State any **FIVE** duties of an Accounting Officer under the Public Procurement Act, 2007.   **(12½ Marks)**

QUESTION 6

Agbayewa State Ministry of works produces furniture for classrooms and offices. During the year 2013, the following information were extracted from the production department:

	Total Cost Value	Net Realisable Value
	Amount ₦'000	Amount ₦'000
Value of store on hand 01/01/13	246,000	250,000
Store taken on charge during year	720,000	750,000
Store surplus taken on charge	3,000	310,000
Store revaluation on charge		17,500
	17,100	
Store issued during the year	825,000	850,000
Store written off during the year:		
i. Short fall and excess	527	600
ii. Store Differences a/c	₦493	₦500
Store revaluation	₦19	₦25

Required*:*

a*.* Prepare unallocated Store Annual Balances Statement   (10 Marks)

b*.* Value of stores at the end of the year stating your reason   ($2^{1}/_{2}$ Marks)

NOTE*:*

All workings must comply with IPSAS.12-Inventories   **(Total 12½ Marks)**

SUGGESTED SOLUTIONS

SECTION A

PART I   MULTIPLE-CHOICE QUESTIONS

1*.* E

2*.* D

3*.* E

4*.* C

5*.* C

6*.* C

7*.* E

8*.* B

9*.* B

10*.* B

11*.* E

12*.* C

13*.* C

14*.* C

15*.* D

16*.* D

17. A

18. B

19. D

20. C

21. A

22. E

23. D

24. C

25. E

26. C

27. C

28. D

29. B

30. D

EXAMINER'S COMMENT

This consists of thirty compulsory questions covering the entire syllabus. Most of the Candidates showed impressive understanding with about 80% of them scoring above 50% of marks obtainable.

PART II   SHORT-ANSWER QUESTIONS

1.   Constitution

2.   Finance (Control and Management) Act of 1958

3.   Suppliers, Investors, the public, Government other than reporting Government (any two of the above)

4.   Public Sector

5   i.   Officials who have attained their position by promotion, technical or judicial appointment

     ii.   Those who are given their position by way of political and diplomatic appointment

6.   Ministry of Local Government and Chieftancy Affairs

7.   Due process

8.   Accountant-General

9.   Budget deficit

10. Public Account Committee

11. Cash Basis

12. Accrual Basis

13. Conversion voucher

14. Stores

15. a. To survey on cash, store, stamps, receipts and unserviceable assets
     b. To investigate misappropriation and losses
     c. The board can be used to dispose of government asset

16. Virement

17. Federation Accounts

18. National Pension Commission

19. Below the line Accounts

20. The Fiscal Responsibility commission

EXAMINER'S COMMENT

This consists of twenty compulsory questions covering the entire syllabus. Candidates did fairly well in this part as only about 60% of them scoring above 50% of marks obtainable.

SOLUTION 1

The following are the regulatory and constitutional provision guiding revenue collections and disbursement of Government funds at the Federal State and Local Government levels to ensure probity, transparency and accountability:

(a) **THE 1999 CONSTITUTION:** This is the main Legal frame work that states the relationship between the state and the citizens as well as among the citizenry. It states the financial relationship among them.

(b) **THE FINANCE (CONTROL AND MANAGEMENT) ACT 1958 CAP.144, 1990:** This is the major law on which the foundation of government accounting rests. It established the following public funds: Consolidated Revenue Fund, Development Fund and Contingency Fund. The Act regulates the management and operation of government funds.

(c) **APPROPRIATION ACTS:** Money bills/budgets when passed into law become appropriations. They regulate financial matters, including the payment or withdrawal from the Consolidated Revenue Fund. Appropriation Acts are passed yearly, for the releases of public money so as to render services in the years to which they relate. Government spending must be in line with the approved budgets

(d) **AUDIT ORDINANCE (OR ACT) OF 1956:** The Act covers the appointment, tenure, remuneration and termination of the Auditor-General for the Federation. It caters for the audit of public accounts including parastatals. The Act mandates the Accountant-General of the Federation to submit, within seven months after the end of each financial year the accounts of the Federation, to the Auditor-General for the Federation, for his audit report. The Auditor-General shall within sixty days thereafter submit his report to the National Assembly

(e) **FINANCIAL REGULATION 2009:** They are accounting and financial control documents. As a regulatory instrument "Financial Regulation" book is the codification of guiding principles and methods. It advocates uniformity, probity and accountability in the recording of specified positions, transactions and events.

(f) **TREASURY/FINANCE CIRCULARS AND CIRCULAR LETTERS**
These are administrative instruments which are issued for the purpose of guiding day-to- day routine operating of the departments' government. They are used in amending existing provisions of public service rules and financial regulations.

(g) **FISCAL RESPONSIBILITY ACT, 2007:** This Act established the Fiscal Responsibility Commission with the responsibility of ensuring the diligent pursuit of the country's economic objectives. The Act provides for the prudent and legal utilization of the resources of Nigeria

(h) **PUBLIC PROCUREMNET ACT, 2007:** The Act enhanced the establishment of the National Council on Public Procurement (NCPP) and Bereau of Public Procurement (BPP), charged with the responsibility of regulating, overseeing and monitoring of public procurement.

EXAMINER'S COMMENT

Tests the regulatory and Constitutional Provisions guiding revenue collection and disbursement of government funds to secure probity, transparency and accountability. About 70% of the Candidates that attempted the question scored over 60% of total marks obtainable.

SOLUTION 2

a.   Amount to be allocated(recurrent vote only)   40, 000,000

Sub head	1	20%	8,000,000
	2	15%	6,000,000
	3	10%	4,000,000
	7	25%	10,000,000
	6	15%	6,000,000

Workings:

Sub head	1	20% of 40,000,000 = 8,000,000
	2	15% x 40,000,000 = 6,000,000
	3	10% x 40,000,000 = 4,000,000
	7	25% x 40,000,000 = 10,000,000
	6	15% x 40,000,000 = 6,000,000

Amount to be allocated:

For recurrent = 50% x 8000,000 = 40,000,000

NB: Capital vote not relevant

b.   i.   The Ministerial Approval
    ii.   The Executive Council Approval
    iii.   The Legislative Approval

EXAMINER'S COMMENT

The question tests the candidate understands of Departmental Vote Expenditure Allocation Book (Vote Book). Candidates were required to make records of releases into Sub heads of Expenditure. Performance was poor as less than 10% of candidates scoring above 50% of marks obtainable. Part "b" tested on Processes of Budget approval. About 45% of Candidates scored above 50% of marks obtainable.

SOLUTION 3

a.   The covering order are forwarded to :

    i.   Accounting Officer
    ii.   Accountant-General
    iii.   Auditor-General
    iv.   Chairman, Federal Civil Service commission

b.   The Boards report shall include:

    i.   A Statement on the exact amount of the loss incurred.
    ii.   An opinion as to whether the accounting system were faulty with suggestions as to any remedy which may appear to be practicable in view of the local conditions
    iii.   An opinion as to whether the operation of the accounting system was defective in the office concerned.
    iv.   Recommendations for improving the physical security measures if those in existence have been inadequate
    v.   The report should include an assessment of the degree of negligence of the officers considered responsible for the loss and recommendation for sanction of other officers.
    vi.   A recommendation as to the fixing of responsibility for the loss in whole or in part.
    vii. Recommendation as to surcharge of officers responsible for the loss and
    viii. Details of any mitigating circumstances which should be taken into consideration in the assessment of the degree of negligence.

EXAMINER'S COMMENT

This tests the Candidates' understanding on Board of Survey and Enquiry as regards investigation and reports on Loss of Funds. About 70% of the Candidates attempted this question. However, only about 5% of them scored above 50% of marks obtainable.

SOLUTION 4

JOURNAL VOUCHER TO CORRECT AUDIT OBSERVATION

A

DR   Advance Non Personal   ₦150,000
CR   Cash Book   ₦150,000
Being the bank shortage corrected

B

DR   Advance Non Personal ₦400,000
CR   Food supply Ledger   ₦400,000
Being the correction of over payment to supplier

C

DR   Advance Non Personal ₦300,000
CR   Capital Expenditure Ledger ₦300,000
Being the correction of undeduction of Withholding Tax

D

DR   Advance Non Personal ₦500,000
CR   Special Trust fund   ₦500,000
Being the correction of overpayment to contractor

E

DR   Chief Ayo   78,000
CR   Abadoned fund ledger   78,000
Being the correction of abadoned personal Advance written off.

The Sub Accounting Officer should make the entry and pass them over to the Accountant General for approval

EXAMINER'S COMMENT

It tests the preparation of Journal Vouchers in adjusting wrong posting. Only about 70% of the candidates attempted this question out of which about 5% of them scoring above 50% of marks obtainable.

SOLUTION 5

THE CONSTITUTIONAL AND FINANCIAL RESPONSIBILITIES OF PRINCIPAL OFFICERS OF GOVERNMENT UNDER PUBLIC PROCUREMENT ACT: 2007

The Public Procurement Act 2007 as summarized by Financial Regulation 113 requires the Accounting Officer to;

i.   Preside order the activities of the Tenders Board of his ministry or department for the purpose of proper planning and evaluation of tenders and execution of procurements.

ii.   Constitute and preside over the procurement and evaluation committees of the ministry extra- ministerial department

iii. Ensure that adequate appropriation is provided specifically for the procurement in the Federal budget

iv.   Integrate the ministry's or extra-ministerial department procurement expenditure into its yearly budget.

v.   Ensure that no splitting of contract is carried out in order to evade the use of the appropriate procurement method

vi.   Liase with the Bureau for Public Procurement (BPP) for the purpose of proper implementation of the regulation of the Bureau

vii. Render annual returns of procurement records to Bureau for Public Procurement

viii. Ensure compliance with the provisions of public procurement by his/her organization otherwise he/she will be held accountable.

EXAMINER'S COMMENT

The question specifically requested that candidates should state five (5) duties of Accounting Officer as provided in the Public Procurement Act 2007. Most of the candidates that attempted the question misconstrued it culminating in their poor performance. Only about 5% of the candidates scored above 50% of marks obtainable.

SOLUTION 6

AGBAYEWA STATES

Ministry of Works Furniture Production Department

ANNUAL BALANCE STATEMENT AS AT 31/12 STORE ACCOUNT (FR 2520)

			₦000	₦000
Valuation of store on hand	246,000		Store issued	825,000
Store taken on charge	720,000 store		Store written off:	
			a. Short fall & Excess	527
Surplus taken on charge	3,000		b. Deficiencies	493
Store revaluation	17,100		Store revaluation	19
	----------		Value of store on hand	160,061
	986.100			986.100

The value of stock as at 31/12/13 is N160, 061 being the lower cost of the two total cost and net realizable value

EXAMINER'S COMMENT

The question tests candidates' understanding of the Preparation of stores accounting with Particular reference to unallocated Stores Annual Balance Statement and value of stores. Performance was impressive as about 80% of Candidates scoring above 60% of marks obtainable.

INSIGHT

AT/142/PII.7

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

QUANTITATIVE ANALYSIS

Time Allowed: 3 Hours

SECTION A: PART I   MULTIPLE-CHOICE QUESTIONS   (30 Marks)

ATTEMPT ALL 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.   In a Linear programming problem, **ONE** of the basic assumptions is that all decision variables must be

    A.   Linear
    B.   Non-negative
    C.   Negative
    D.   Zero
    E.   Constant

2.   The condition for the expression $ax^2 + bx + c$ to be a quadratic expression is

    A. $a \neq o$ and $b \neq o$
    B. $c \neq o$
    C. $a \neq o$
    D. $b \neq o$
    E. $b \neq o$ and $c \neq o$

3.   If A and B are two independent variables with P(A) = 0.6 and P(B) = 0.4, then $P(A \cup B)$ is

    A.   1.00
    B.   0.76
    C.   0.67
    D.   0.24
    E.   0.20

4.   The objective function for a minimization Linear Programming (LP) problem is $300x + 450y$ and the coordinates of the corner points of the feasible region are (0,20), (10,30), (40,0). The optimal value of the objective function is

    A.   16,500
    B.   12,500
    C.   12,000
    D.   9,500
    E.   9,000

5.   The revenue and cost functions of a particular investment are $R(x) = 150x$ and $C(x) = 80 + 70x$ respectively, where x is the number of items produced and sold, then the profit is made if

    A. $x > 1$
    B. $x < 1$
    C. $x > 2$
    D. $x < 2$
    E. $x > 3$

6.   Pilot survey is necessary during an ideal survey for the following reasons **EXCEPT** that, it

    A.   Tests the adequacy of proposed questionnaire
    B.   Tests the method of presenting the data
    C.   Tests the method of analysing the data
    D.   Makes necessary adjustments before the main survey is carried out
    E.   Tests the respondents' opinions

7.   The revenue function of a particular product is described by $R(x) = 2x^3 + 3x^2 + 5x + 10$ where x is the number of items produced and sold. The revenue (in Cedis) for the product when 2 items are produced and sold is

    A.   GH₵ 48
    B.   GH₵ 58
    C.   GH₵ 68
    D.   GH₵ 78
    E.   GH₵ 88

8.   Efficiency of a test statistic can be measured in terms of

    A.   Critical value
    B.   Standard error
    C.   Type I error
    D.   Type II error
    E.   Coefficient of variation

9.   If data are classified on the basis of parameters such as age, height, weight, prices, income, expenditure, etc, such a classification is known as

    A.   Qualitative classification
    B.   Quantitative classification
    C.   Chronological classification
    D.   Geographical classification
    E.   Variable classification

10.   The demand function for an item is given by $y = 16 - 0.05\sqrt{x}$. What is the elasticity of demand when 3,600 items are demanded?

    A.   -9
    B.   -13
    C.   9
    D.   13
    E.   15

11.   A Linear Programming problem with labour hours and material constraints given respectively as $3x + 4y \leq 90 \; and \; x + 4y \leq 71$. Find the values of x and y if the material unit is increased by one while labour hours remain unchanged.

    A. $x = 7, \quad y = 12.75$
    B. $x = 8, \quad y = 11.75$
    C. $x = 9, \quad y = 15.75$
    D. $x = 10, \quad y = 16.25$
    E. $x = 10, \quad y = 16.75$

12. Which of the following statements is **NOT** a characteristic of the Operations Research method?

    A. Develop a scientific model of the system under investigation
    B. It is essentially an aid to decision making
    C. It is based on the (so called) scientific method
    D. An Operations Research model will be constructed for a particular "problem area"
    E. Objective function is **NOT** essential

13. The following information were obtained for 10 pairs of independent variable, (x) and dependent variable, (y):

$$\sum xy = 90, \quad \sum x = 10, \quad \sum y = 15, \sum x^2 = 85 \; and \sum y^2 = 100.$$ The computed pearson's product moment correlation coefficient is

    A. 0.68
    B. 0.78
    C. 0.88
    D. 0.98
    E. 1.00

14. Mr. Sunday earns ₦250,000 per annum with an annual constant increment of ₦30,000. If he retires after 30 years and his gratuity is 250% of his terminal annual salary, how much will he receive as his gratuity?

    A. ₦2,800,000
    B. ₦2,702,000
    C. ₦2,655,000
    D. ₦2,650,000
    E. ₦2,550,000

15. The annuity paid at the end of a payment period is called

    A. Due annuity
    B. Ordinary annuity
    C. Certain annuity
    D. Perpetual annuity
    E. Present value of an annuity

16.

Source	Destination			Available
	I	II	III	
A	3	1	4	800
B	2	3	5	600
C	4	2	1	1,000
Required	800	700	900	2,400

From the table above, use Vogel's approximate method, to find the highest penalty along the row

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

17. The following are the basic components of a time series **EXCEPT**

A. Secular variation
B. Seasonal variation
C. Cyclical variation
D. Periodical variation
E. Irregular variation

18. The following table gives the moving average calculated for sales (Y) data (in thousands) for six months:

T	1	2	3	4	5	6
Y	20	40	30	80	70	90
Moving average		30	50	60	80	

The order of the moving average is

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

19. Which of the following techniques is **NOT** applicable to project management?

A. Critical Path Analysis
B. Critical Path Method
C. North West Corner Technique
D. Programme Evaluation and Review Technique
E. Critical Path Planning

20. The estimates for a particular project are given as follows:

Optimistic time $(t_o) = 10 \, days$
Most likely time $(t_m) = x \, days$
Pessimistic time $(t_p) = 24 \, days$

Find the most likely time to complete the project if the expected time of completing the project is 16.3 days.

A. 2.3 days
B. 8.2 days
C. 16.0 days
D. 18.0 days
E. 24.1 days

21. Which of the following is a consequence of a component that deteriorates with time?

A. A decrease in its maintenance cost
B. A decrease in its production capacity
C. An increase in the value of the re-sale price of the item
D. A decrease in its operating cost
E. An increase in the efficiency of the equipment

22. When the Revenue function $R(x) = 15x^3 - 3x^2$, the marginal revenue when $x = 2$ is

    A. 108
    B. 118
    C. 164
    D. 166
    E. 168

23. The following are the properties of arithmetic mean **EXCEPT** that

    A. It is unique
    B. It is easily understood by people
    C. There exists a mean for any kind of values
    D. It takes into account all the items in the data
    E. It is sensitive to extreme values

24. Which of the following is **NOT** a necessary assumption for calculation of basic Economic Order Quantity (EOQ)?

    A. There is known constant stockholding cost
    B. There is known constant ordering cost
    C. Lead time is not zero
    D. The rates of demand are known
    E. There is known constant price per unit

25. The disadvantages of periodic review system include the following **EXCEPT**

    A. Larger stocks are required
    B. It may be difficult to set up especially if demands are not consistent
    C. Production planning will be more efficient
    D. Changes in consumption are not taken care of
    E. EOQ not taken into consideration hence re-order quantities are not economical

26. Given that the marginal profit function of a Company is 200 – 60q and it is also known that the company breaks even at q=10, find the fixed cost of the Company.

    A. -1,000
    B. - 800
    C. 800
    D. 1,000
    E. 2,000

27. Which of the following is **NOT** a problem encountered in the construction of price indices?

   A.   Selection of base
   B.   Accurate computation of results
   C.   Choice of weights
   D.   Selection of items for inclusion into the index
   E.   Changes due to time

28. The following are the measures of dispersion **EXCEPT**

   A.   Percentile range
   B.   Quartile deviation
   C.   Interquartile range
   D.   Median range
   E.   Coefficient of quartile deviation

29. Which of the following hypotheses is NOT true about one-tailed test?

   A. H_I: $\mu > 10$
   B. H_I: $\mu \leq 20$
   C. H_I: $\mu < 5$
   D. H_I: $\mu \neq 10$
   E. H_I: $\mu \geq 5$

30. In a sample survey, the sample size, sample mean and sample standard deviation are respectively given as 9, 12, and 3, find the lower 95% confidence interval of the mean of the population

   A.   9.04
   B.   10.08
   C.   10.04
   D.   11.04
   E.   11.08

SECTION A: PART II   SHORT-ANSWER QUESTIONS   (20 Marks)

ATTEMPT ALL QUESTIONS

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

1.   The constant stream of amounts or payments for some length of time in the future is known as.............................

2.   The demand function D(q) and the supply function S(q) of a commodity are given respectively as D(q) = 700 – 8q and   S(q) = 300 + 12q . Calculate the equilibrium quantity.

3.   Partial differentiation is applicable when there are more than................. variables.

4.

| Source	Destination		Available
	P	Q	
A	4	2	~~50~~ 0
B	1	x 3	~~90~~ 80
Demand	~~60~~ ~~10~~—0	80	140

X = 80

       Use the North West Corner Method to find x in the table above.

5.   The feasible region is the region in a graph that satisfies all the...................of a linear programming problem simultaneously.

6.   A set of data that are collected in a successive manner at regular intervals of time is known as.............................

7.   The upward and downward movements of a time series about the trend line is depicted by the graph of..........................

8.   Apart from the graphical method of solving Linear Programming problems, others are ....and.............................methods.

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

10.   If $P(x) = (-x)^3 + x^2 + 250$, then $P(3)$ is..............................

11. The difference between the Latest Start Time (LST) and Earliest Start Time (EST) of an event is the..............................

12. The mathematical expression x ≤ y means x is............................. y.

13. A random experiment is different from other experiments because its outcomes cannot be...............................

14. The ratio of the sum of prices of a group of related items in a given year to the sum of the prices of the items in a base year is called......................... index

15. The sampling method where element of chance is **NOT** applied to select some units from the sampling frame to form the required sample is known as...........................method.

16. The review system where all the stock are reviewed at fixed intervals and replenishment orders issued to bring stock back to predetermined level is known as ....system.

17. The length of time between the placing of **TWO** consecutive orders is known as...............................time.

18. A measure of dispersion based on the upper quartile and the lower quartile is known as ....

19. Consider the network shown below
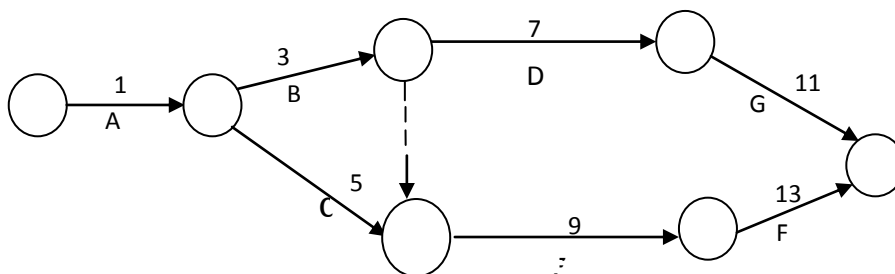
The number of paths in the network above is...................................

20. A sample of 144 gave a mean of 7.2kg and a standard deviation of 1.1kg. Then, the 95% confidence interval for the population mean is obtained as.....................................

INSIGHT

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

$$\boxed{\text{STATISTICS}}$$

QUESTION 1

In an attempt to study the trend of the prices of some accounting equipment purchased by a consultant between the years 2010 to 2013, a research executive generated the data shown in the table below:

Equipment \ Price	Prices (₦'MILLION)			
	2010	2011	2012	2013
I	20	22	24	28
II	8	12	15	20
III	10	14	17	22

You are required to use the year 2010 as the base year to construct the

a.   Price relatives of each equipment for all the other years   (5½ Marks)

b.   Simple aggregate price index of the equipment for all the other years

(7 Marks)

(Total 12½ Marks)

QUESTION 2

A market survey was conducted to estimate the proportion of customers who would recognize the brand name of a cleanser based on the shape and the colour of the container. Out of the 1,500 customers sampled, 340 were able to identify the brand by name.

You are required to:

a.   Estimate the value of the population proportion   (3 Marks)
b.   Compute the standard error of the population proportion   (3 Marks)

c.   Construct a 95 percent confidence interval for the population proportion and interprete your findings.   (6½ Marks)
                                                                                   (Total 12½ Marks)

BUSINESS MATHEMATICS

QUESTION 3

A project is presently estimated to cost L$1.4million. The net cash flows of the project for the first 5 years are estimated respectively as L$325,000, L$490,000, L$720,000, L$400,000 and L$380,000. If the discount rate is 13%,

a.   Calculate the Net Present Value (NPV) for the project and state whether the project is feasible?   (6½ Marks)

b.   If additional L$85,000 and L$100,000 were spent on the project during the third and fifth years respectively, will the project be feasible?   (6 Marks)
                                                                                   (Total 12½ Marks)

QUESTION 4

a.   The Sales Manager of a company claims that the demand function of a particular product is $P = 60 - 3x$ where x is the number of units. It is found out that at the price of Le15, the total number of units demanded is 20. Based on the above information, calculate the consumers' surplus. (6 Marks)

b.   The demand function for a certain item is given as $P = 60 - 0.04\sqrt{q}$. Calculate the elasticity of demand when 1,600 items are demanded and interpret your result.   (6½ Marks)
                                                                                   (Total 12½ Marks)

QUESTION 5

OPERATIONS RESEARCH

The table below shows the transportation cost (in Naira) per unit of a product from any of the factories A, B and C to any of the warehouses X, Y and Z including the demand by each warehouse and number of products available at each factory.

Warehouse / Factory	X	Y	Z	Available
A	3	5	2	6,200
B	4	3	6	4,800
C	2	1	3	4,000
Demand	4,000	6,000	5,000	15,000

a. What is the difference between the total transportation cost when North-West Corner method and Least Cost method are used for the allocation?

(11½ Marks)

b. Which of the two methods will you recommend? (1 Mark)

(Total 12½ Marks)

QUESTION 6

A typical project has the following information:

Activity	Preceding Activity	Duration (Days)
A	-	2
B	-	4
C	A	6
D	-	5
E	B	5
F	C	1

You are required to:

a. Draw the Activity-On–Arrow network diagram for the project   (5½ Marks)

b. Calculate the Earliest Finish Time (EFT), Latest Finish Time (LFT), Earliest Start Time (EST), Latest Start Time (LST), total float, free float and independent float for all the activities of the project.   (7 Marks)

                                                                 (Total 12½ Marks)

SUGGESTED SOLUTIONS

SECTION A

PART I   MULTIPLE-CHOICE QUESTIONS

1.   B

2.   C

3.   B

4.   E

5.   A

6.   E

7.   A

8.   B

9.   B

10.   C

11.   C

12.   E

13.   D

14.   A

15.   B

16.   B

17.   D

18.   C

19.   C

20.   C

21.   B

22.   E

23.   E

24.   C

25.   C

26.   D

27.   B

28.   D

29.   D

30.   C

(Workings)

3. $P(A \cup B) = P(A) + P(B) - P(A \cap B)$

$$= 0.6 + 0.4 - (0.6)(0.4)$$

$$= 0.76$$

4.
Coordinate	Value of the objective function
$(0,20)$	$300(0) + 450(20) = 9000$
$(10,30)$	$300(10) + 450(30) = 16500$
$(40,0)$	$300(40) + 450(0) = 12000$

Since 9,000 is the least value, (0,2) is the optimal solution, hence the optimal value of the object function is 9,000

5. Profit is made if

$$R(x)-c(x)>0$$
$$\therefore 150x-(80+70x)>0$$
$$\therefore 150x-80-70x>0$$
$$80x-80>0$$
$$\therefore 80x>80$$
$$\therefore x>1$$

7. $R(x)=2x^3+3x^2+5x+10$
If $x=2,$
$$R(2)=2(2)^3+3(2)^2+5(2)+10$$
$$=2\times8+3\times4+5\times2+10$$
$$=16+12+10+10=\not\subset 48$$

10. $y=16-0.05\sqrt{x}$

$$\frac{dy}{dx}=-0.05\left(\frac{1}{2}x^{-\frac{1}{2}}\right)$$

If $x=3600,$

$$\frac{dy}{dx}=-0.05\left(\frac{1}{2}(3600)^{-\frac{1}{2}}\right)$$

$$=-0.00041667$$

But $E=\left(\frac{-y}{x}\right)\left(\frac{1}{dy/dx}\right)$

where $y=16-0.05\sqrt{3600}$

$$=13$$

$$\therefore E=\frac{-13}{3600(-0.00041667)}=8.6680536$$

$$\approx 9$$

11. $3x + 4y = 90.....(i)$

$x + 4y = 71 + 1.........(ii)$

$(i) - (ii)$ $gives$ $2x = 18$

$x = 9$

$\therefore y = 63/4 = 15.75$

13. $r = \dfrac{n\sum xy - \sum x \sum y}{\sqrt{\left[n\sum x^2 - \left(\sum x\right)^2\right]\left[n\sum y^2 - \left(\sum y\right)^2\right]}}$

$= \dfrac{10(90) - (10)(15)}{\sqrt{\left[10 \times 85 - (10)^2\right]\left[10 \times 100 - (15)^2\right]}}$

$= \dfrac{900 - 150}{(850 - 100)(1000 - 225)} = \dfrac{750}{762.4} = 0.98$

14. $a = 250,000, \ d = 30,000, \ n = 30$

$30th \ term = 250,000 + (30 - 1)(30,000)$

$= 250,000 + (900,000 - 30,000)$

$= ₦1,120,000$

$\therefore His \ ter\min al \ annual \ salary = N1,120,000$

$\therefore His \ gratuity = \dfrac{250,000}{100} \times 1,120,00 = N2,800,00$

16.

Source	Destination I		Destination II		Destination III		Available	Penalties
A		3		3		4		2
B		2		3		5		1
C		4		2		1		1
Required								
Penalties	1		1		3			

$\therefore The \ highest \ penalty \ along \ the \ row = 2$

18. $\dfrac{20 + 40 + 30}{3} = 30, \dfrac{40 + 30 + 80}{3} = 50$

$\therefore The \ Order \ of \ the \ moving \ average = 3$

20. $t_m = \dfrac{1}{4}\left(6T - t_0 - t_p\right)$

$\quad\quad = \dfrac{1}{4}\left(6 \times 16.3 - 10 - 24\right)$

$\quad\quad = 16$ *days as the most likely time to complete the project*

22. $R(x) = 15x^3 - 3x^2$

$\quad\quad \dfrac{dR(x)}{dx} = 45x^2 - 6x$

when $x = 2$, $\dfrac{dR(x)}{dx} = 180 - 12 = 168$ *as the marginal revenue.*

26. $P(q) = \int (200 - 60q)dq$

$\quad\quad = 200q - \dfrac{60}{2}q^2 + c = 200q - 30q + c$

When $q = 10$,

$\quad\quad P(q) = 200 \times 10 - 30 \times (10)^2 + C = 0$

$\quad\quad\quad\quad \therefore C = 1000$ *as the fixed* $\cos t$

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

$\quad \therefore 12 \pm \dfrac{1.96 \times 3}{\sqrt{9}}$

$\quad\quad 12 \pm 1.96$

$\quad \therefore 10.04 \le \mu \le 13.96$

$\quad \therefore$ *The lower* 95% *confidence* int *erval of the mean of the population*

$\quad\quad$ *is* 10.04

EXAMINER'S COMMENT

All the thirty questions are okay. Candidates' performance was average and the syllabus is fairly covered.

SHORT- ANSWER QUESTIONS

1.   Annuity

2.   20

3.   Two

4.   80

5.   Constraints

6.   Time series

7.   Seasonal Variation

8.   Algebraic and Simplex

9.   Cumulative frequency

10.   232

11.   Float

12.   Less or equal to

13.   Predetermined

14.   Simple Aggregate price

15.   Non-probability Sampling

16.   Periodic review

17.   Lead time

18.   Interquartile range

19.   3

20. $7.02 \leq \mu \leq 7.38$

Workings

2. At equilibrium, $D(q) = S(q)$

$$\therefore 700 - 8q = 300 + 12q$$
$$\therefore 20q = 400$$
$$q = 20$$

4.

Source	P		Q		Available	
A	50	4		2	50̶	0
B	10	1	x	3	9̶0̶	80
Demand	6̶0̶ 10		1		140	

Allocate $\cdots 50$ to PA, 10 to PB $\therefore 80$ should be allocated to QB
$$\therefore x = 80$$

10. $P(3) = (-3)^3 + (3)^2 + 250$

$$= -27 + 9 + 250 = 232$$

19. *Path $1: A - B - D - G$*

Path $2: A - B - E - F$

Path $3: A - C - E - F$

$\therefore$ *There are 3 paths in the network*

20. $n = 144, \sigma = 1.1, \bar{x} = 7.2$

$$CI : \bar{x} \pm \frac{1.96\sigma}{\sqrt{n}} = 7.2 \pm \frac{1.96 \times 1.1}{\sqrt{144}}$$

$$7.2 \pm 0.18$$
$$7.02 \leq \mu \leq 7.38$$

EXAMINER'S COMMENT

All the twenty questions are okay. The syllabus is fairly covered. Majority of the candidates performed fairly well.

SOLUTION 1 (Index Numbers)

(a)   The price relatives for the equipment using

2010 as the base year: $PR = \dfrac{\sum P_n}{\sum p_o} \times \dfrac{100}{1}$

Equipment I: $PR\,^{2011}\!/_{2010} = \dfrac{22}{20} \times \dfrac{100}{1} = 110.00\%$

$PR\,^{2012}\!/_{2010} = \dfrac{24}{20} \times \dfrac{100}{1} = 120.00\%$

$PR\,^{2013}\!/_{2010} = \dfrac{28}{20} \times \dfrac{100}{1} = 140.00\%$

Equipment II: $PR\,^{2011}\!/_{2010} = \dfrac{12}{8} \times \dfrac{100}{1} = 150.00\%$

$PR\,^{2012}\!/_{2010} = \dfrac{15}{8} \times \dfrac{100}{1} = 187.50\%$

$PR\,^{2013}\!/_{2010} = \dfrac{20}{8} \times \dfrac{100}{1} = 250.00\%$

Equipment III: $PR\,^{2011}\!/_{2010} = \dfrac{14}{10} \times \dfrac{100}{1} = 140.00\%$

$PR\,^{2012}\!/_{2010} = \dfrac{17}{10} \times \dfrac{100}{1} = 170.00\%$

$PR\,^{2013}\!/_{2010} = \dfrac{22}{10} \times \dfrac{100}{1} = 220.00\%$

b.   **To find simple Aggregate Price indices**

$$\sum P2010 = 20 + 8 + 10 = 38$$
$$\sum P2011 = 22 + 12 + 14 = 48$$
$$\sum P2012 = 24 + 15 + 17 = 56$$
$$\sum P2013 = 28 + 20 + 22 = 70$$

$$\therefore (i) \, Agg. \, PR \, ^{2011}\!/_{2010} = \frac{\sum P_{2011}}{\sum P_{2010}} \times \frac{100}{1} = \frac{48}{38} \times \frac{100}{1}$$

$$= 126.32\%$$

$$(ii) \, Agg. \, PR \, ^{2012}\!/_{2010} = \frac{\sum P_{2012}}{\sum P_{2010}} \times \frac{100}{1} = \frac{56}{38} \times \frac{100}{1}$$

$$= 147.37\%$$

$$(iii) \, Agg. \, PR \, ^{2013}\!/_{2010} = \frac{\sum P_{2012}}{\sum P_{2010}} \times \frac{100}{1} = \frac{70}{38} \times \frac{100}{1}$$

$$= 184.21\%$$

EXAMINER'S COMMENT

This question tests candidates' knowledge of Index numbers bordering on Price Relatives and Simple Aggregate Price Index. About 90% of all the candidates attempted the question with about 20% of them scoring above 80% of the marks allocated. The major pitfalls identified are wrong interpretation of the question and applying the laspeyre's and Paasche's methods to solve the problem. The candidates are advised to distinguish very carefully between different index number expressions.

SOLUTION 2

a. The estimate of the population proportion is

$$P = \frac{x}{n}$$

$$= \frac{Number \; that \; was \; able \; to \; identify \; the \; colour \; by \; name}{Number \; sampled}$$

$$= \frac{340(1)}{1500} = 0.23(1) \quad or \; 23\%$$

b. The standard error of the proportion is

$$\sigma_p = \sqrt{P\left(\frac{1-P}{n}\right)}$$

$$= \sqrt{\frac{0.23(0.77)}{1500}}$$

$$= 0.01$$

c. The $Z - value\ that\ corresponds\ to\ the\ 95\ percent\ level\ of\ significance\ is$ 1.96

$C.I\ for\ P\ :\ P \pm Z_{95}\ \sigma_p$

$\qquad 0.23 \pm 1.96(0.01)$

$\qquad 0.23 \pm 0.0196$

$\therefore CI\ for\ proportion\ is\ 0.2104 \leq p \leq 0.2496$

We conclude that 23 percent of the population will be able to identify the brand by name because the interval estimate includes value greater than 23%.

EXAMINER'S COMMENT

The question tests candidates' knowledge of Estimation (based on proportion) and computation of Confidence Interval. Only 5% of the candidates attempted the question with 30% of them scoring marks in excess of 5 out of the maximum of 12½ marks. Their major pitfall was their inability to quote the correct formula for the Confidence Interval. Candidates should get themselves familiar with this formula in future examinations.

SOLUTION 3

a.   The usual set up is r = 0.13

Year	Net Cash Flow (A) ₦	Discounting Factor $\frac{1}{(1+r)^n}$	$pv = \frac{A}{(1+r)^n}$
0	-1.4m	$\frac{1}{(1+0.13)^0} = 1$	-1.4m
1	325,000	$\frac{1}{(1+0.13)^1} = 0.88496$	287612
2	490,000	$\frac{1}{(1+0.13)^2} = 0.78315$	383743.50
3	720,000	$\frac{1}{(1+0.13)^3} = 0.69305$	498996
4	400,000	$\frac{1}{(1+0.13)^4} = 0.61332$	245328
5	380,000	$\frac{1}{(1+0.13)^5} = 0.54276$	206248.80
			NPV = ₦221,928.30

The tables are available for the discounting factors.

∴   = ₦1,400,000+₦287,612+₦383,743.5+₦498,996+₦245,328 − ₦206,248.8
    = ₦221,928.3
    Since the NPV is positive, the project is desirable

b.   The new net cash flow for
      3rd year =₦720,000 − ₦85,000 = ₦635,000
      and for 5th year = ₦380,000 − ₦100,000 = ₦280,000

      We now have

Year	Net Cash Flow	Discounting Factor	PV
0	-1.4m	1	-1.4m
1	325,000	0.88496	287612
2	490,000	0.78315	383,743.50
3	635,000	0.69305	440,086.75
4	400,000	0.61332	245,328
5	280,000	0.54276	151,972.80
		NPV = ₦108,743.05	

Since the NPV is positive, the project is desirable.

EXAMINER'S COMMENT

The question is on the computation of the Net Present Value (NPV) and its interpretation. About 98% of the candidates attempted the question. The performance was very good with an average score of 6½ marks out of 12½ marks. Actually about 40% of those that attempted the question scored the maximum 12½ marks.

SOLUTION 4

a. Consumer's surplus $= \int_{0}^{20} (demand\ function)dx - P_0 q_0$

But Demand function $= P = 60 - 2x$

$P_0 = 15$, $q_0 = 20 = x$

$\therefore C.S = \int_{0}^{20}(60 - 3x)dx - P_0 q_0$

$= 60x - \frac{3}{2}x^2 \Big|_{0}^{20} \quad (15)(20)$

$= \left[(60)(20) - \left(\frac{3}{2}\right)(20)^2\right] - \left[(60)(0) - \left(\frac{3}{2}\right)(0)^2\right] - 300$

$= 1,200 - 600 - 0 - 300$

$= 300$

(b) $p = 60 - 0.04\sqrt{q}$

$\frac{dp}{dq} = \frac{0.04q}{2} = \frac{-0.04}{2\sqrt{q}}$

when $q = 1600$,

$\frac{dp}{dq} = \frac{-0.04}{80} = -0.0005$

when $q = 1600$, $p = 60 - (0.04)\sqrt{1600} = 58.4$

Elasticity of demand (e) $= \left(\frac{-p}{q}\right)\left(\frac{dq}{dp}\right)$

$= \frac{-58.4}{(1600)(-0.0005)}$

$= 73$

This means that e is elastic, since it is greater than 1

$\therefore$ there will be a decrease in revenue if there is an increase in price

EXAMINER'S COMMENT

This question is on the application of Integration to typical business transactions bordering on Consumer Surplus and Elasticity of demand. About 50% of the candidates attempted the question with about 20% of them scoring 40% of the allocated marks. Their major pitfalls include inability to carry out simple integration and not knowing the correct expressions and how to interpret when elasticity of demand is greater than ONE.

SOLUTION 5

TRANSPORTATION

a.   NorthWest Corner Method

Warehouses

Source	X		Y		Z		Available	
A		3		5		2	~~6000~~ 2200	0
	4000		2200					
B		4		3		6	~~4800~~ 1000	0
			~~3800~~	1000				
C		2		1		3	4000	0
					4000			
Demand	~~4000~~		~~6000~~		~~5000~~		15000	
	0		~~3800~~		~~4000~~			
			0		0			

Total transportation cost is
$$3\times4000+5\times2200+3\times3800+6\times1000+3\times4000$$
₦52,400

Least Cost Method

Warehouses

Source	X		Y		Z		Available	
A		3		5	5000	2	~~6000~~ 1200	0
	1200							
B	2800	4	2000	3	1000	6	~~4800~~ 2800	0
C		2	4000	1		3	~~4000~~ 0	
Demand	4000		~~6000~~		~~5000~~		15000	
			~~2000~~		0			
			0					

Total transportation cost is
3 x 1200 + 2 x 5000 + 4 x 2800 + 3 x 2000 + 4000
= ₦34,800

Difference in total transportation cost is
   ₦52,400 – ₦34,800 = ₦17,600

b.   Least Cost Method should be used because the method leads to cheaper transportation cost.

EXAMINER'S COMMENT

This question tests candidates' knowledge of basic transportation problem bordering on North-West Corner (NWC) and Least Cost (LC) methods. About 98% of the candidates attempted the question with about 75% scoring above average. The major pitfall of the candidates was their inability to allocate correctly using NWCM and LCM.

SOLUTION 6

i.
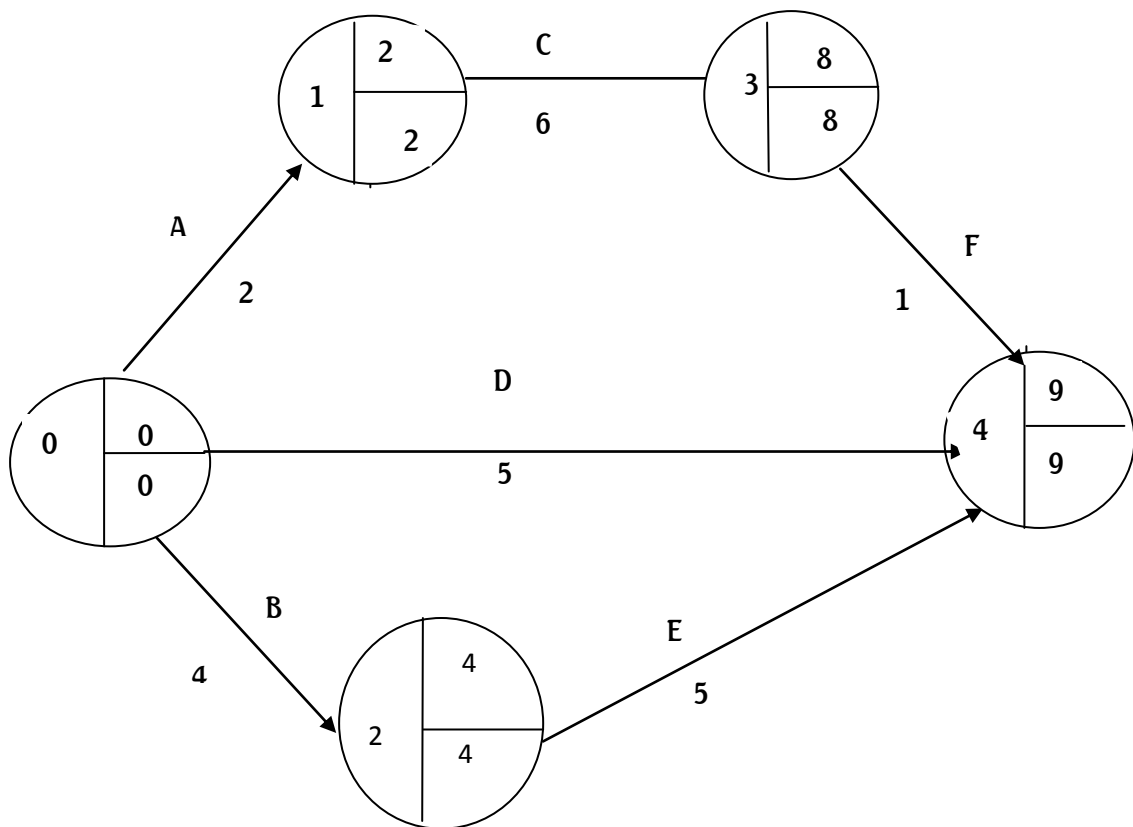
ii.

Activity	EFT	LTF	EST	LST	Duration (D)	Total Float LFT-EST-D	Free Float EFT-EST-D	Independent Float EFT-LST-D
A	2	2	0	0	2	0	0	0
B	4	4	0	0	4	0	0	0
C	8	8	2	2	6	0	0	0
D	9	9	0	0	5	4	4	4
E	9	9	4	4	5	0	0	0
F	9	9	8	8	1	0	0	0

EXAMINER'S COMMENT

The question tests the candidates' knowledge of the Network Theory. The candidates are expected to drawn the Network diagram based on the Activity–on–Arrow principle. Also candidates are to use the data given to compute, among others, all the three forms of floats. About 90% of the candidates attempted the question with 70% of them scoring 6½ marks and about out of the maximum allocated marks of 12½ marks. Major pitfalls were their inability to draw the correct Network Diagram and, their inability to use correct formulae to carry out the relevant calculations.

INSIGHT

ASSOCIATION OF ACCOUNTANCY BODIES IN WEST AFRICA
ACCOUNTING TECHNICIANS SCHEME
PART II EXAMINATIONS - SEPTEMBER 2014

INFORMATION TECHNOLOGY

Time Allowed: 3 Hours

SECTION A: PART I   MULTIPLE-CHOICE QUESTIONS   (30 Marks)
                          ATTEMPT ALL 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.   A mainframe computer has the following features **EXCEPT**

     i.   It is very expensive
     ii.   It is a large system
     iii.   Generate low quantity of heat
     iv.   It can run for several uninterrupted hours
     v.   It has a large primary memory

     A.   i, only
     B.   ii only
     C.   iii only
     D.   i, ii
     E.   i, ii, iii

2.   A device that contains a rolling metal ball that can be pressed to execute commands by enhancing the user's cursor moving ability is called

     A.   Joystick
     B.   Graphic plotter
     C.   Light pen
     D.   Mouse
     E.   Key

3.   Which of the following is **NOT** correct? A microcomputer

     A.   Can be used as part of a network
     B.   Can be operated by unskilled users
     C.   Can only be installed by skilled users
     D.   Has a small word length size
     E.   Can be used as a stand-alone computer

4. Semi-conductor memory is made of

   A.   Silicon chips
   B.   Arsenic clips
   C.   Hard core
   D.   Memory chips
   E.   Mercury chips

5. A device used to store large amount of information in very small amount of space usually for archival purposes is called

   A.   RAM
   B.   Computer Output on microfilm (COM)
   C.   ROM
   D.   Hard disk
   E.   Flash

6. Application software do the following specific tasks **EXCEPT**

   A.   Writing a business letter
   B.   Processing payroll
   C.   Enhancing hardware operations
   D.   Managing a stock portfolio
   E.   Forecasting sales

7. Utility programs perform **ONE** of the following functions

   A.   Transferring data from one medium to another
   B.   Allow for data transmission
   C.   Efficient use of the hardware system
   D.   Ease of output devices
   E.   Allocation of time slices during multi-user operations

8. The process of using computer system to produce text documents and business letters is known as

   A.   Data manipution
   B.   Graphic display
   C.   Word processing
   D.   Information display
   E.   Management process

9. The following are the advantages of Tailor-made application package over Off-the-shelf software **EXCEPT**

   A. Easy to use in training users
   B. Easy to install
   C. Provides better security
   D. It is more accurate
   E. It is more expensive to develop

10. The software package that performs automatic posting of transactions to the various accounting books is the

    A. Business Graphics
    B. Accounting package
    C. Database management system
    D. Lotus 1-2-3
    E. Super-cal

11. A processing technique whereby large volumes of data are gathered over a period of time and processed periodically or at time intervals is known as

    A. Batch processing
    B. Real-time processing
    C. Distributed processing
    D. On-line processing
    E. Centralised processing

12. A method of interaction between a user and a computer based upon a graphical display is known as

    I. Command driven interface
    II. Menu driven interface
    III. Graphical user interface

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

13. Accounting Information System (AIS) is a special type of information system for accounting professionals. AIS enable the Professional Accountant to perform the following

    I.   Accounting systems and financial reporting
    II. Long term strategic planning
    III. Managing the accounting and finance function
    IV. Process improvement

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

14. The smallest element of data, which can be alphabetic, numeric or special symbols, is known as

    A. Character
    B. File
    C. Entity
    D. Byte
    E. Field

15. Deleted files are kept in

    A. My computer
    B. My document
    C. Recycle Bin
    D. Control panel
    E. Network neighborhood

16. A leadership style in managing change where widespread participation of employees occurs to define the changes required and techniques to achieve them is called

    A. Coercive
    B. Consultative
    C. Collaborative
    D. Directive
    E. Divide and rule

17. The make or buy decision is associated with the................Step in the System Development Life Cycle

    A. Problem Identification
    B. Design
    C. Analysis
    D. Development
    E. Documentation

18. Accounting packages may **NOT** be used for

    A. Recurring journal entries
    B. Variance analysis reports
    C. Desktop design
    D. Accounts payable
    E. Creation of chart of accounts

19. Actual programming of software code is done during the ....step in the System Development Life Cycle

    A. Problem definition
    B. Maintenance and evaluation
    C. Design
    D. Analysis
    E. Development

20. Whether the project should go forward or **NOT** is determined by the

    A. Feasibility assessment
    B. Opportunity identification
    C. System evaluation
    D. Program specification
    E. Design justification

21. A type of transmission cable consisting of many extremely thin strands of glass bound together in a jacket for transmitting signals with light beams is called.....................

    A. Twisted pair cable
    B. Coaxial cable
    C. Fiber-optic cable
    D. Untrusted pair cable
    E. Shielded cable

22. A work arrangement whereby employees work outside the office using personal computers and networks to communicate through e-mail with other workers and to pick up and deliver result is called

   A. Telecommunication
   B. Telecommuting
   C. Teleconferencing
   D. Video-conferencing
   E. Audio conferencing

23. An Internet application that enables you to send text, binary files, sound and images to others and vice-versa is called

   A. File transfer protocol
   B. Usenet
   C. Telnet
   D. Instant messaging
   E. e-mail

24. Which **ONE** of the following sits between the computer and the internet to prevent unauthorized access to a computer system?

   A. Telnet
   B. Extranet
   C. Internet
   D. Firewall
   E. Digital signature

25. After connection of individual devices to the network, multiple segments of transmission media can be connected to form one large network. All the following **EXCEPT** .... are used to extend the range and size of the network

   A. Modems
   B. Bridges
   C. Repeaters
   D. Hubs
   E. Routers

26. E-mail messages can take any form **OTHER** than

    A. Data
    B. Surfing
    C. Fax
    D. Video
    E. Text

27. Voice verification, signature dynamics and retina scanning are examples of ………………….measures

    A. Biometric security
    B. Hardware security
    C. Software security
    D. Antivirus
    E. Malware

28. A type of computing that relies on sharing computing resources rather than having local servers or personal devices to handle applications is referred to as

    A. Forensic computing
    B. Parallel computing
    C. Cloud computing
    D. Forex computing
    E. Web computing

29. A software application for retrieving, presenting and traversing information resources on the World Wide Web is called

    A. Protocal
    B. Browser
    C. File transfer protocol
    D. Hypertext
    E. Software downloader

30. Businesses that develop attractive electronic market places to entice and sell products and services to consumers is referred to as

    A. Consumer to consumer
    B. Business to customer
    C. Business to business
    D. Customer to consumer
    E. Customer to customer

SECTION A: PART II   SHORT-ANSWER QUESTIONS   (20 Marks)

ATTEMPT ALL QUESTIONS

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

1.   A terminal equipment that enables dissimilar networks to communicate is known as........................

2.   Star, Linear, Ring, Mesh networks are examples of................

3.   A computer network is a communication system that links two or more computers and peripheral devices and enables transfer and sharing of hardware and.................resources

4.   The technology that enables switching between phones or voice and data using existing telephone lines describes...........................

5.   The Software that is used to access the internet is known as............................

6.   A computer language used to make enquiries into Database and information system is called..............

7.   Magnetic disks and magnetic strips are examples of ....storage devices

8.   Present day systems consist of four broad components, Hardware, Software ,...................... and communication units

9.   Computers known as.......................... are more powerful than the mainframe computers

10.   A support equipment designed primarily to be used in an online mode is called........................

11.   A number system that has its decimal digits between 0 and 15 with 15 as the highest number and 0 as the least number is known as............................

12.   In Data processing, WIMP is an acronym for...............................

13.   Software is divided into system software and....................packages

14.   A computer system or computer server that acts as an intermediary for requests from clients seeking resources from other computer servers is called................

15.   The system of interlinked hypertext documents accessed via the internet is called........................

16.   What is the name given to an application protocol for distributed, collaborative and hypermedia information?

17. The organized process or set of steps that needs to be followed to develop an information system is known as.........................

18. Which of the members of the feasibility study committee has the views of the management?

19. An overall strategy to information system development that focuses on how and when data are moved through and changed is called.......................

20. An expansion board that is plugged into a computer so that it can be connected to a network is referred to as ....

SECTION B   **ATTEMPT ANY FOUR QUESTIONS**   **(50 Marks)**

QUESTION 1

a. What do you understand by Visual Presentation Unit (VPU)?   (1½ Marks)

b. State **THREE** features of Visual Presentation Unit (VPU)   (3 Marks)

c. Give **TWO** differences between peripheral equipment and auxiliary equipment stating **TWO** examples each   (5 Marks)

d. State **THREE** functions of a Central Processing Unit (CPU) in Personal Computers (PCs).   (3 Marks)
          (Total 12½ Marks)

QUESTION 2

a. Briefly identify and describe **THREE** different forms of e-commerce
          (7½Marks)

b. Enumerate **FIVE** benefits of e-commerce.   (5 Marks)
          (Total 12½ Marks)

QUESTION 3

a. Define the term Data processing   2½Marks)

b. Explain **THREE** factors that determine the methods of data processing (6 Marks)

c. List **FOUR** stages of Data processing.   (4   Marks)
          (Total 12½ Marks)

QUESTION 4

a.   What is a Network protocol?   (2 Marks)

b.   List sequentially the layers of the Open Systems Interconnection (OSI)
      model that serves as a standard model for network architecture   (3½ Marks)

c.   Enumerate the functions of any **FOUR** Layers in (b) above   (6 Marks)

d.   What is TCP/IP.   (1 Mark)
                                                                    (Total 12½ Marks)

QUESTION 5

ONE of the phases in Systems Development Life Cycle (SDLC) is System
Implementation.

a.   What is System Implementation?   (1½ Marks)

b.   Explain the term "System Changeover"   (1 Mark)

c.   List and explain **FOUR** types of System Changeover.   (10 Marks)
                                                                    (Total 12½ Marks)

QUESTION 6

a.   Enumerate **FIVE** activities normally performed by a computer forensic specialist
                                                                            (5 Marks)
b.   Differentiate between a Hacker and a Cracker.   (3 Marks)

c.   State **TWO** reasons why it is necessary to have a website.   (2 Marks)

d.   What makes the following different from each other?

      i.   Virus
      ii.   Worm   (2½ Marks)
                                                                    (Total 12½ Marks)

SUGGESTED SOLUTIONS

SECTION A

PART I   MULTIPLE-CHOICE QUESTIONS

1.   C

2.   D

3.   C

4.   A

5.   B

6.   C

7.   A

8.   C

9.   E

10.   B

11.   A

12.   C

13.   E

14.   A

15.   C

16.   C

17.   C

18.   C

19.   E

20.   A

21.   C

22.   B

23.   E

24.   D

25.   A

26.   B

27.   A

28.   C

29.   B

30.   B

EXAMINER'S COMMENT

The choice of the questions had a wide spread and it covered the entire syllabus. The performance was encouraging as many candidates scored above 50% of the allocated mark.

PART II: SHORT-ANSWER QUESTIONS

1.   Gateway

2.   Network Topology

3.   Software/Data/File Resource

4.   Private Branch Exchange (PBX)

5.   Browser

6.   Query Language

7.   External/Secondary/Backing/Auxillary

8.   Humanware/Manware/Userware

9.   Super computers/Machines

10.   Terminals/Peripheral equipment

11.   Hexadecimal number system/base 16 number system

12.   Windows, Icon, Mouse and Pulldown/Pointer

13.   Application

14.   Proxy Server

15.   World Wide Web (WWW)/Web

16.   HyperTest Transfer Protocol (HTTP)

17.   System Development Life Circle (SDLC)/System Development

18.   Executive member of the company

19.   Process-Oriented Approach

20.   Network Interface Cord (NIC)

EXAMINER'S COMMENT

The spread of the questions was good as it covers the major parts of the syllabus. The performance was poor as many candidates scored below 40% of the allocated mark. The major pitfall was the candidates' inability to supply the correct technical terms demanded by the questions.

SOLUTION 1

1a.   Visual Presentation Unit (VPU) is also known as Visual Display Unit (VDU), Monitor, Video Display Unit and Screen.

VPU is a display device which works in conjunction with a keyboard. Monitor and the keyboard together serve as an input device for micro computers while a monitor alone serves as an output device.

b.   Features of Visual Presentation Unit include:

-   Screen Resolution
-   Colour Presentation
-   Screen Shape
-   It produces soft copy

c. - A peripheral equipment is a support equipment designed primarily to be used in an online mode.

Examples: Printers, VDU, Keyboard, Communication terminals while Auxiliary equipments are support equipment designed to work in an offline mode.

Examples: microfilm reader, data-entry devices used in large data processing centres to enter data offline on a tape or a disk e.g. key-to-disk, key-to-diskette.

- Peripheral equipment are set up to transmit data to or receive output information from the CPU over a communication line (e.g. connected to CPU) while Auxiliary equipment transmit data and receive output information without been designed to work with the CPU or not connected to CPU.

d. Functions of Central Processing Unit (CPU) include:

- Co-ordinates the activities of the components of the computer systems.

- It processes the input data

- It transfers information not meant for immediate output to the RAM.

- It transfers information meant for immediate output to the output devices.

- It receives input data.

EXAMINER'S COMMENTS

This question tests candidates' understanding of basic components of the computer systems. It demands for the definition of Virtual Presentation Unit (VPU) and the uses of Central Processing Unit. 85% of the candidates answered this question and the performance was good as over 60% of the candidates scored over 50% of the allocated mark.

The major pitfall among those who scored low marks was the inability to distinguish between peripheral and auxiliary equipment and their examples. Candidates are advised to read extensively on these basic topics.

SOLUTION 2

a.   The different forms of e-commerce include:

   i.   Business-to-Business (B2B)
   ii.   Business-to-Consumer (B2C)
   iii. Customer-to-Consumer (C2C)

Explanation

   i.   Business-to-Business e-commerce involves selling of products and services between businesses or companies on a wholesale rather than retail: This is normally conducted through industry sponsored market places and through private exchanges set up by large companies.

   ii.   Business-to-consumer or Business-to-Customer: This model of e-commerce involves the selling of products and services by a company to individual consumers. Here, businesses sell their products directly to the consumers. This involves electronic retailing of products by the companies.

   iii. Customer-to-Customer or Consumer-to-Consumer: This is the online selling of goods and services among people or individuals. Though there is no major parties needed but the parties will not fulfill the transactions without the program which is supplied by an online market dealer such as e-bay.

b.   Benefits of E-Commerce include:

   i.   Overcoming Geographical Limitation: If you have a physical store, you are limited by the geographical area that you can service. With an e-commerce website, the whole world is your playground.

   ii.   Gaining new customer with search engine visibility: Physical retail is driven by branding and relationships. In addition to these two drivers, online retail is also driven by traffic from search engines. It is not unusual for customers to follow a link in search engine results, and land up on an e-commerce website that they have never heard of.

   iv.   Lower Cost: One of the most tangible benefits of e-commerce is the lowered cost. A part of these lowered costs could be passed on to customers in the form of discounted prices.

v. Locate the product quicker: It is no longer about pushing a shopping cart to the correct aisle, or scouting for the desired product. On an e-commerce website, customers can click through intuitive navigation or use a search box to immediately narrow down their product search.

vi. Eliminate travel time and cost: It is not unusual for customers to travel long distances to reach their preferred physical store. E-commerce allows them to visit the same store virtually, with a view mouse click.

vii. Provide comparison shopping: E-commerce facilitates comparison shopping. There are several online services that allow customers to browse multiple e-commerce merchants and find the best prices.

viii. Provide abundant information: E-commerce websites can make additional information easily available to customers. Most of this information are provided by vendors, and does not cost anything to create or maintain.

ix. It eliminates the idea of middlemen.

EXAMINER'S COMMENTS

This question tests candidates' understanding on e-commerce. It demands for the different forms and benefits of e-commerce. Over 95% of the candidates attempted the question and the performance was encouraging as over 60% of the candidates scored over 50% of the allocated mark.
Candidates are advised to read widely on this modern interesting topic.

SOLUTION 3

a. Data processing is the collection, analysis and manipulation of items of data to produce meaningful information for decision making.

b. Factors determining the methods of data processing include:

i. Size of Business:

The size means the volume of transaction in the business. Business with large volume of transaction will require the use of computers, while businesses with low volume of transaction will use manual method or electro-mechanical devices like calculations.

ii.   Timing Aspect: The frequency of information will determine the methods and the equipment needed for processing. For example, information on payroll might be monthly while information on invoices are virtually all the time.

iii.   Link between application: Sometimes, a simple pool of data might be needed by many applications and this will determine the technique to be used. For example, the data on items sold will be needed by the price list, the stock file, the invoicing production. This can easily be done through the Data Base Management Systems (DBMS) unlike the manual system.

iv.   Purpose for which data is needed

v.   Cost implication of the data

vi.   Intended users of the data to be processed

c.   Stages of Data Processing include:

i.   Origination of date i.e. the source of data

ii.   Preparation for data entry depending on the method, whether batch, on-line or real time

iii.   Input the data

iv.   Processing to get the information using appropriate software

v.   Output through appropriate medium

vi.   Storage of information

vii.   Distribution of information to appropriate recipients

EXAMINER'S COMMENTS

This question tests candidates' knowledge on data processing. It demands for the definition and stages of data processing.

About 65% of the candidates attempted the question and the performance was just fair as over 60% of the candidates scored over 40% of the allocated mark.

The major pitfall was the inability to explain the factors that determine the methods of data processing.

Data Processing is a major topic in the syllabus, so candidates are advised strongly to read widely on it.

SOLUTION 4

a.   Network Protocol is a standard set of rules and procedures that governs communication between networked computers and related devises that exchange data.

It includes mechanism for devices to identify and make connections with each other, as well as formatting rules that specify how data is packaged into messages sent and received.

b.   The layers of the OSI model arranged in sequential order are:

   i.   Physical layer

   ii.   Data link layer

   iii.   Network layer

   iv.   Transport layer

   v.   Session layer

   vi.   Presentation layer

   viii.   Application layer

c.   The functions of the above layers include:

Physical (Layer 1):

   i.   This layer conveys the bit stream-electrical impulse, light or radio signal through the network at the electrical and mechanical level.

   ii.   Physical layer provides the hardware means of sending and receiving data on a carrier, including defining cables, cards and physical aspect.

   iii.   It represent the physical channels of communication equipment such as cables and other communication devices.

   iv.   Fast Ethernet RS232, and ATM are protocols with physical layer components.

Data Link (Layer 2)

i.   It ensures that data packets are encoded and decoded into bits.

ii.   It helps furnish transmission protocol knowledge and management.

iii.   It helps handle errors in the physical layer, flow control and frame synchronization.

iv.   It helps control how a computer on the network gains access to the data and permission to transmit it.

v.   It controls frame synchronization, flow control and error checking.

Network (Layer 3):

i.   It helps provide switching and routing technologies, creating logical paths, known as virtual circuits, for transmitting data from node to node.

ii.   It provides routing and forwarding.

iii.   It also addresses internetworking, error handling, congesting control and packet sequencing.

Transport (Layer 4)

i.   It provides transparent transfer of data between end systems, or hosts.

ii.   It is also responsible for end-to-end error recovery and flow control.

iii.   It ensures complete data transfer.

Session (Layer 5)

i.   It helps establish, manage and terminate connections between applications.

ii.   It sets up, co-ordinates, and terminates conversations, exchanges, and dialogues among the applications at each end.

iii.   It deals with session and connection coordination.

Presentation (Layer 6)

i.   It provides independence from differences in data representation (e.g. Encryption) by translating from application to network format, and vice versa.

ii. The presentation layer works to transform data into the form that the application layer can accept.

iii. It formats and encrypts data to be sent across a network, providing freedom from compatibility problems.

iv. It is also called the syntax layer.

Application (Layer 7)

i. It helps support application and end-user processes.

ii. Communication partners are identified, quality of service is identified, user authentication and privacy are considered, and any constraints on data syntax are identified.

d. TCP/IP means Transmission Control Protocol/Internet Protocol which is responsible for verifying correct delivery of data from sender to receiver. In other words, it is responsible for moving packets of data from node to note in the network.

EXAMINER'S COMMENT

The question tests candidates' knowledge on data transmission. It demands for the definition of Network Protocol and the various levels in OSI model.

About 45% of the candidates attempted this question and the performance was just above average as over 50% of the candidates scored below 50% of the allocated mark.

The major pitfall was the inability to state the functions of the different layers in the model.

Students are advised to be familiar with this modern topic.

SOLUTION 5

b. **System implementation:** This is the stage that carries development from design to operations. It involves acquisition (or writing) of software, program testing, file conversion, file set-up, education and training, acquisition and installation of hardware, and changeover. This stage of turning the theoretical design (logical design) into a working system (the physical design) comprises the following steps (in the form of a flow chart): Implementation Planning, System testing, education and training, etc.

b.   **System changeover:** This is when the full developed system is ready to be put into use by changing the old system into the newly developed system, after the user has certified that the new system has met their requirements.

c.   **Types of system changeover:**

i.   **Direct Changeover:** This is the method of system changeover in which the old system is suddenly replaced with the new system. This is a very old approach that should be attempted during slack periods. Conditions under which this method may be adopted include – previous success of new system in a similar situation – no basis for comparison by virtue of both systems being substantially different-no-extra staff to oversee parallel running.

ii.   **Parallel Running:** In this technique, both the old system and the new system are used to process current data simultaneously. Results from both systems are checked for consistency. Where the results do not agree, the reasons may be attributed to – Errors in the new system, or – errors in the old system, or – sabotage of the new system, or – wrong handling of the new system although it is error-free. This method provides a degree of safety but is expensive in terms of the duplication of efforts and resources used. The method should be properly planned to cater for – a firm time limit on parallel running – details of the type of results to be checked. – instructions on how errors are to be dealt with – instructions on how to cope with major problems in the new system – simulation of period – end processing (e.g. year-end).

iii. **Pilot Operation Changeover:** This method is easier to control than parallel running, and provides a greater degree of safety than does a direct changeover. There are two types:

-    **Retrospective Parallel Running,** in which the new system operates on data previously processed by the old system. The existing results are available for checking with results from the new system without the problems of staffing and disruption caused by parallel running and

-    **Restricted Data Running:** This involves a complete logical part of the system file being chosen and it is run as a unit on the new system. If that is shown to be working well, the remaining parts are then transferred. Gradually, the entire system can be transferred in this piecemeal fashion.

iv.   **Staged/Phased Changeover:** This is best suited to very large or complex projects. The first stage is implemented using the parallel approach and, thereafter, it is a series of discrete direct amendments incorporated in the later stages in order to ensure that the overall system remains totally compatible.

Note carefully that the difference between this approach and the restricted data running approach discussed above is that this approach looks at implementing the entire new system in stages while the restricted data running considers the implementation of part of the entire system in a piecemeal fashion.

EXAMINER'S COMMENT

This question tests candidates' knowledge on System Development. It demands for the definition of systems implementation and change over. It also demands for the types of systems change over.

Over 80% of the candidates attempted this question and the performance was just fair as over 60% of the candidates scored below 50% of the allocated mark.

The major pitfall was the inability to explain the pilot and phase change over techniques. Students are advised to read widely on this topic.

SOLUTION 6

a.   Computer forensics (also known as computer forensic science) is a branch of digital forensic science pertaining to legal evidence found in computers and digital storage media. The goal of computer forensic is to examine digital media in a forensically sound manner with the aim of identifying, presenting facts and opinions about the digital information.

The activities performed by a computer forensic specialist include:

*   ❖   Examination of digital media and other media for presentation as evidence in the court of law.
*   ❖   Identification, preservation and analyzing computer resources for litigation purposes
*   ❖   Investigating/inquiry storage media and other storage devices to obtain evidence
*   ❖   Network intrusion/transmission misuse investigation

b.   **Difference between Hacker and Cracker**

A hacker is an individual who is knowledgeable enough to gain access without authorization to computer system to identify security flaws.

<u>On the other hand</u>

A cracker exploits those flaws for his own advantage with the intention of doing damage or committing crime. Sometimes, crackers are called criminal hackers.

c.   Reasons why it is necessary to have a website include:

  ❖   It serves as a platform to advertise the products of an organization to the customers.
  ❖   It makes the company accessible at all times to its customers.
  ❖   It makes people to know more about the organization.
  ❖   Being hosted on the website makes an organization more professional.
  ❖   It makes more people to be accessible to an organization/company.

d.   A virus is a type of malware resident in a segment of a program which when executed makes the virus to replicate itself by inserting itself into other computer programs, data files, hard disk etc in order to cause harm.

A worm is a type of virus that uses computer network to spread itself, relying on security failures on the target computer to access it.

Whereas a worm does not require human intervention, a computer virus requires it.

EXAMINER'S COMMENT

This question tests candidates' knowledge on computer forensic and computer abuses. It demands for the differences between hacker and cracker, virus and worms. Less than 40% of the candidates attempted this question and the performance was poor, as over 60% of the candidates' scores less than 40% of the allocated mark.

The major pitfall was the inability to distinguish between virus and worm.

Students are advised to read more on these topics.