

# INSIGHT

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## **EXAMINERS GENERAL COMMENTS**

### **BREACH OF EXAMINATION INSTRUCTIONS**

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

- A) BY ATTEMPTING MORE QUESTIONS THAN ALLOWED IN EACH PAPER;  
AND
  
- B) BY ATTEMPTING MORE QUESTIONS THAN ALLOWED IN EACH SECTION.

### **INADEQUATE COVERAGE OF THE SYLLABUS**

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

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## 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.

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NOTE

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

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AT/211/PII.5

EXAMINATION NO:.....

**ASSOCIATION OF ACCOUNTANCY BODIES IN WEST AFRICA  
ACCOUNTING TECHNICIANS SCHEME  
PART II EXAMINATION – SEPTEMBER 2011  
PRINCIPLES AND PRACTICE OF FINANCIAL ACCOUNTING**

Time allowed: 3 hours

**Insert your examination number in the space provided above**

**SECTION A - Attempt All Questions**

**PART I MULTIPLE-CHOICE QUESTIONS (10 Marks)**

1. Over-valuation of closing stock in the financial statements of an enterprise will create one of the following problems:
  - A. Net profit will be understated
  - B. Gross profit will be understated
  - C. Equity will be understated
  - D. Net profit will be overstated
  - E. Liabilities will fluctuate adversely
  
2. Where there is no partnership deed, the partners will share profits and losses
  - A. In same proportion as capital
  - B. Equally
  - C. Equally after the adjusting for interest on capital
  - D. In the same proportion as drawings
  - E. In the same proportion as capitals after adjusting for interest on capital
  
3. The part of the minimum rent in royalty not represented by the use of the right in the case of a mine is known as
  - A. Dead rent
  - B. Mine royalty
  - C. Minimum income
  - D. Short workings
  - E. Patent income
  
4. Working capital is the excess of
  - A. Current assets over fixed assets
  - B. Current assets over current liabilities
  - C. Fixed assets over current liabilities
  - D. Current assets over long-term liabilities
  - E. Fixed assets over long-term liabilities

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5. Which of the following is **NOT** an asset?
- A. Goodwill
  - B. Prepayment
  - C. Stock/Inventory
  - D. Accruals
  - E. Bills receivables
6. Which of the following is **NOT** an item of property, plant and equipment (with reference to IAS 16)?
- A. Motor Vehicle
  - B. Business Premises
  - C. Plant
  - D. Office Machinery
  - E. Investment Property
7. Trade Mark is an example of a/an
- A. Tangible asset
  - B. Intangible asset
  - C. Current asset
  - D. Current liability
  - E. Non-current liability
8. Kofi, Lamidi and Taylor are partners with fixed capitals of 200,000 cedis each. They share profits in the ratio 2:1:1. Premises that are recorded at a cost of 1 million cedis less accumulated depreciation of 100,000 cedis are revalued for 1.5 million cedis. After the revaluation, the capital of Lamidi will be ..... cedis
- A. 325,000
  - B. 350,000
  - C. 366,667
  - D. 400,000
  - E. 700,000
9. Each of the following is a qualitative characteristic of financial information **EXCEPT**
- A. Reliability
  - B. Relevance
  - C. Completeness
  - D. Going Concern
  - E. Materiality
10. Which type of company uses the abbreviation Plc?
- A. Private companies only
  - B. Public and private companies
  - C. Public companies only
  - D. All companies incorporated by shares
  - E. Companies limited by guarantee

## **PART II SHORT-ANSWER QUESTIONS (30 Marks)**

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1. The Value Added Tax which is charged on sales or supplies is termed.....
2. In IAS 16; Property, Plant & Equipment, the amount by which the carrying amount of an asset exceeds its recoverable amount is called.....
3. In royalties account, after the right of recoupment has entirely lapsed and the royalties fall below the minimum royalties payable, what entry would you make in the books?
4. The process of systematic allocation of the cost of an intangible asset over the estimated economic useful life is called.....
5. The statement that an agent prepares to the consignor showing proceeds, charges incurred and commissions is called.....
6. The Companies and Allied Matters Act 1990 (Companies Code 1963) requires the statutory books and returns of a company to be kept at.....
7. A composite account that is outside the double entry system which shows the total position from which the total profit or loss can be calculated and its division between the joint venturers is called.....
8. Items that are normal to activity of an enterprise and abnormal as a result of their infrequency of occurrence and size is known as.....
9. A method of keeping accounts whereby revenue and expenses are recorded in the books of account when received and paid without regard to period to which they apply is called.....
10. Where the number of shares demanded on application is more than the number of shares available for issue, the issue is regarded as being.....
11. The economic reward associated with holding shares in a company limited by shares is.....
12. The VAT which is charged by suppliers on goods purchased is termed.....
13. In what **TWO** ways should users be able to compare an entity's financial statement?
14. Amount retained for any liability or loss which is either likely to be incurred or is certain to be incurred but uncertain as to amount or date on which it will arise is called a.....
15. In accordance with IAS 2, inventory is measured at cost or ..... whichever is lower.
16. The ratio that indicates the strength of the working capital and the degree of solvency of the business is.....
17. The main objective of preparing receipts and payments accounts in the books of not-for profit making organisation is to ascertain.....
18. The major problem of valuing plantation products is.....
19. What is the meaning of the phrase "ex div"?

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20. What is equity?
21. The financial statement prepared to ascertain the increase or decrease in cash and cash equivalent during a period is called.....
22. The excess of issue price of a share over the nominal value is called.....
23. The accounting measure used to match tax effect of transactions with their accounting impact is termed.....
24. What term describes a possible obligation that arises from past event, where the existence of the obligation will be confirmed only in the future, with the occurrence or non-occurrence of an event that is not wholly within the control of the enterprise?
25. The difference between the monetary value of output and input of goods and services attributed to a business is called.....
26. The formula for calculating dividend yield is.....
27. State the formulae for calculating the working capital ratio.
28. The International Accounting Standard that regulates the preparation of statement of cash flow is.....
29. The relationship between debt capital and the equity capital of a company is referred to as the.....
30. Explain the term “scrip issue”.

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## SECTION B - Attempt any FOUR questions (60 Marks)

### QUESTION 1

The following is the summary of the receipts and payments for the year to 31 December 2009 of Skylet Social Club.

Receipts:	₤
Club subscriptions	3,525,000
Donations	637,500
Christmas dance	191,250
Bar takings	6,575,000
Payments:	₤
Rates	202,500
General expenses	6,095,000
Bar purchases	4,162,500
Christmas dance expenses	33,750

Other relevant information at the beginning and end of the year are as follows:

	1 Jan. 2009	31 Dec. 2009
	₤	₤
Subscriptions due	200,500	135,000
Subscription paid in advance	11,250	22,500
Rates owing	101,250	112,500
Bar stock	450,000	562,500
Club premises (cost ₤11,250,000)	4,500,000	4,050,000
Furniture (Cost ₤2,250,000)	675,000	450,000
Bank and cash in hand	360,000	795,000

**You are required to prepare:**

- The club's bar trading account for the year to 31 December 2009.
- The club's Income and Expenditure account for the year to 31 December 2009 and a balance sheet as at that date. (Show workings).

**(Total 15 Marks)**

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## QUESTION 2

Valuation of plantation products and livestock are fraught with problems.

### Required:

- (a) What are these problem and the solutions normally proffered for them? (9 Marks)
- (b) What are the disclosure requirements under IAS 2? (6 Marks)
- (Total 15 Marks)**

## QUESTION 3

Ibrahim and John are in partnership sharing profits and losses equally.

Due to meltdown in the economy, their business has been experiencing losses for the past two years and they foresee no prospect of reversal in the trend. They therefore decided to dissolve the partnership on 1 July 2009.

The following shows the balance sheet as at the date of dissolution.

### BALANCE SHEET AT AT 1 JULY 2009

	¢		¢
Capital A/c:		Plant & Machinery	750,000
Ibrahim	675,000	Motor Vehicles	450,000
John	525,000	Stock	150,000
Loan (Olusoji)	225,000	Debtors	120,000
Creditors	<u>75,000</u>	Bank balance	<u>30,000</u>
	<u>1,500,000</u>		<u>1,500,000</u>

### Additional information

		¢
(i)	Plant and machinery realised	900,000
(ii)	Stock realised	135,000
(iii)	Ibrahim took over part <b>of</b> the vehicles	225,000

The remainder of motor vehicles realised ¢270,000;

Debtors were given 10% discount while creditors gave 5% discount.

Dissolution expenses amounted to ¢1,500.

You are required to write up the following ledger accounts to close the books of the partnership:

- (a) Realisation Account  
(b) Partners' capital account (in columnar form)  
(c) Bank Account

**(Total 15 Marks)**

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## QUESTION 4

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- (a) The balance on the stock ledger must be reconciled with actual stock in hand by physical counting of the stock. However, there might be difference between stock ledger balance and the actual physical stock taking. State **THREE** factors that can cause such difference. (6 Marks)
- (b) Link Enterprises could not carry out its stock taking as at the year ended 31 March, due to busy business activities until 6 April. However, the following stock transactions occurred between 1 – 5 April.
- |        |  |            |
|--------|--|------------|
| (i)    | Value of stock in warehouse on completion of stock taking on 6 April was   | Le240,000  |
| (ii)   | The stock taking excluded goods sent out on “Sale or Return” basis, at invoice price of  | Le7,500    |
| (iii)  | Sales 1 – 5 April  | Le 100,000 |
| (iv)   | Sales Returns  | Le 2,000   |
| (v)    | Purchases at cost 1 – 5 April  | Le 80,000  |
| (vi)   | Purchases Returns at cost  | Le 1,000   |
| (vii)  | Stock sheet over cast by   | Le 500     |
| (viii) | 200 units at Le50 each was included in the stock sheet for   | Le5,000    |
| (ix)   | Value of stock in the warehouse included goods invoiced and charged to a customer on 29 March at Le1,500 but held in the warehouse |            |
| (x)    | Gross profit on cost is $33\frac{1}{3}\%$  |            |

**You are required to:**

Compute the value of closing stock as at 31 March. (9Marks)

**(Total 15 Marks)**

## QUESTION 5

Breaceensite Quarry Company Limited on January 2008 granted Decco Limited a licence which provided for:

- (i) a royalty of L\$50,000 per tonne of stones recovered;
- (ii) a minimum (or dead) rent of L\$10,000,000 per annum;
- (iii) the recoupment of short-workings within a period of five years from the end of the year in which they occurred.

The quantities recovered during the first three years were:

	Tons
2008	150
2009	175
2010	260

The amount due to the Breaceensite Quarry Company Limited, in respect of each year was paid on 26 January in the following year.

**You are required to:**

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Write up the following ledger accounts as they would appear in the books of Decco Ltd.

- (a) Breaceensite Quarry Company Ltd. account (7½ Marks)
- (b) Royalties Account (3½ Marks)
- (c) Short-workings account for the year ended 31 December 2010. (4 Marks)
- (Total 15 Marks)**

## QUESTION 6

Ola and Dele decided to undertake a joint venture to buy up the stock in trade of an enterprise which had serious working capital problems. Profits were to be shared equally and each venturer was entitled to a commission of 5% on the selling price of goods sold by him. The stock was obtained by the venturers at ₦325,000.

Payment was made on January 1 2009 when Dele sent a cheque for ₦100,000 to Ola to help him pay for the goods. Ola was to receive an office allowance of ₦1,000 and Dele was allowed to charge ₦5,500 for handling of the goods. Expenditure incurred by the venturers up to January 31 2009 was:

	<b>Ola</b>	<b>Dele</b>
	₦	₦
Carriage	2,500	-
Insurance	4,500	-
Warehouse Rent	-	6,000

On 16 January 2009 Ola received ₦140,000 and Dele ₦100,000 for goods sold and on January 20, they received ₦80,000 and ₦90,000 respectively. Ola agreed to take the stock still unsold at valuation of ₦5,000 for his own use when the venture came to a close on 31 January 2009.

**You are required to prepare as at January 31, 2009:**

- (a) The joint venture account with Dele.
- (b) The joint venture account with Ola.
- (c) The memorandum joint venture account.

**(Total 15 Marks)**

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## MULTIPLE CHOICE SOLUTIONS

1. D
2. B
3. D
4. B
5. D
6. E
7. B
8. B
9. D
10. C

## Tutorial

8. Capital Account Lamidi

	Cedis
Opening Balance B/f	200,000
Share of Revelation Surplus	
$\frac{1}{4} (1,500,000 - 900,000) =$	<u>150,000</u>
	<u>350,000</u>

## EXAMINER'S COMMENT

The questions covered the syllabus and about 75% of candidates scored 6 marks and above.

## PART II SHORT ANSWER SOLUTIONS

1. Output tax
2. Impairment loss
3. When the right of recoupment lapses, the balance, if any, standing to the debit of Redeemable Royalties Account must be written off as a loss to the profit and loss account.
4. Amortization
5. Account sales statement

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6. The registered office of the company
7. Memorandum joint venture account
8. Exceptional items
9. Cash basis accounting
10. Over-subscribed
11. Dividend /Capital Gains
12. Input tax
13. (i) Through time to identify trends (Trends)  
(ii) With other entity's statement (Horizontal)
14. Provision
15. Net Realisable Value
16. Current Ratio
17. Cash and Bank Balances
18. Long gestation period
19. Excluding dividend
20. It is shareholders fund or Net worth
21. Statement of Cash Flows
22. Share Premium
23. Deferred tax
24. Contingent liability
25. Value Added
26.  $\frac{\text{Dividend per share}}{\text{Market price of the share}} \times 100 \%$
27.  $\frac{\text{Current Asset}}{\text{Current Liabilities}}$
28. IAS 7
29. Gearing/Leverage
30. Share issue to existing shareholders from the reserves. It is also known as bonus share.

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## EXAMINER'S COMMENT

The spread of questions covered a wide area of the syllabus. The performance of candidates was poor as about 30% of the candidates who attempted the questions scored above 50% of the marks.

## SOLUTION 1

### SKYLET SOCIAL CLUB

#### BAR TRADING ACCOUNT FOR THE YEAR ENDED 31 DECEMBER 2009

	₦	
Sales		6,575,000
Less: Cost of goods sold:		
Opening Stock	450,000	
Bar purchases	<u>4,162,500</u>	
	4,612,500	
Closing Stock	<u>562,500</u>	<u>4,050,000</u>
		<u>2,525,000</u>

#### INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31 DECEMBER 2009

	₦	₦
<b>INCOME:</b>		
Bar gross profit		2,525,000
Subscription (i)		3,448,250
Donations		637,500
Christmas dance	191,250	
Less Christmas dance expenses	<u>33,750</u>	<u>157,500</u>
		6,768,250
<b>EXPENDITURE:</b>		
Rates	213,750	
General Expenses	6,095,000	
Depreciation – Premises	450,000	
- Furniture	<u>225,000</u>	<u>6,983,750</u>
Surplus/ (Deficit)		<u>(215,500)</u>

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**SKYLET SOCIAL CLUB  
BALANCE SHEET AS AT 31 DECEMBER 2009**

	Cost	Depreciation	NBV
Fixed Assets	₦	₦	₦
Premises	11,250,000	7,200,000	4,050,000
Furniture	<u>2,250,000</u>	<u>1,800,000</u>	<u>450,000</u>
	<u>13,500,000</u>	<u>9,000,000</u>	4,500,000
Current assets			
Bar Stock		562,500	
Subscription due		135,000	
Bank and cash		<u>795,000</u>	
		1,492,500	
Current Liabilities			
Subscription in advance	22,500		
Rates accrued	<u>112,500</u>	<u>135,000</u>	<u>1,357,500</u>
			<u>5,857,500</u>

Accumulated fund	
At 31/12/2008	6,073,000
Less deficit for the year	<u>215,500</u>
	<u>5,857,500</u>

**NOTES**

i.  $\text{Suscription} = \text{₦}3,525,000 + \text{₦}11,250 + \text{₦}135,000 - \text{₦}22,500 - \text{₦}200,500$   
 $= \text{₦}3,448,250$

ii.  $\text{Rates} = \text{₦}202,500 - \text{₦}101,250 + \text{₦}112,500 = \text{₦}213,750$

iii. Accumulated fund 31/12/2008

$\text{₦}200,500 - 11,250 - 101,250 + 450,000 + 4,500,000 + 675,000 + 360,000 = \text{₦}6,073,000$

**EXAMINER'S COMMENT**

The question tests the candidates' knowledge and understanding of the preparation of club accounts. About 85% of the candidates attempted the question and scored good marks. Few candidates could not clearly differentiate between receipts and payments account and income and expenditure account.

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## SOLUTION 2

### a. Valuation of Plantation Products

The major problem with the determination of the value of a plantation product is that a plantation does not usually start to produce until after a long gestation period (e.g. rubber and cocoa).

Therefore all costs associated with land preparation, planting and development are accumulated until the maturity and are amortised over the estimated productive life of the plantation.

### Valuation of Livestock

Two major problems are associated with the valuation of livestock namely:

- i. Determining the actual number and size of existence especially with animal that graze.
- ii. Identifying the various stages of their development. The services of experts are often required for the solution to these problems.

### b. Disclosure Requirement

- i. Inventories should be sub-classified in the balance sheet or in the notes to the financial statements such as raw materials, work in progress, finished goods.
- ii. The accounting policies adopted for inventory valuation including the method used to determine inventory cost should be disclosed.
- iii. A change in inventory accounting policy, its reason and its effect should be disclosed.

## EXAMINER'S COMMENT

The question which tests candidates' knowledge of the understanding of problems associated with valuation of plantation products/livestock and the solutions were attempted by about 10% of the candidates, and their performance was poor. About 75% of the candidates who attempted it scored less than 50% of the marks allocated.

# INSIGHT

## SOLUTION 3

### IBRAHIM & JOHN DISSOLUTION OF PARTNERSHIP

#### REALISATION ACCOUNT

	¢		¢
Plant & Machinery	750,000	Bank Plant & Machinery	900,000
Motor Vehicle	450,000	Bank Stock	135,000
Stock	150,000	Bank Motor Vehicle	270,000
Debtors	120,000	Capital A/c Ibrahim	225,000
Dissolution exp.	1,500	Discount received	3,750
Capital A/c		Rec'd from debtors	108,000
Ibrahim 85,125			
John 85,125	<u>170,250</u>		
	<u>1,641,750</u>		<u>1,641,750</u>

#### PARTNERS' CAPITAL ACCOUNT

	IBRAHIM ¢	JOHN ¢		IBRAHIM ¢	JOHN ¢
Motor Vehicle	225,000	-	Balance b/d	675,000	525,000
Bank	<u>535,125</u>	<u>610,125</u>	Profit on realization	<u>85,125</u>	<u>85,125</u>
	<u>760,125</u>	<u>610,125</u>		<u>760,125</u>	<u>610,125</u>

#### BANK ACCOUNT

	¢		¢
Balance b/d	30,000	Dissolution Exp.	1,500
Plant & Mach	900,000	Loan repaid	225,000
Stock	135,000	Creditor	71,250
Motor Vehicle	270,000	Capital A/c	
Debtors	108,000	Ibrahim	535,125
		John	610,125
	<u>1,443,000</u>		<u>1,443,000</u>

#### EXAMINER'S COMMENT

The question on dissolution of partnership was attempted by about 80% of the candidates and they displayed good understanding of the question. Performance was good.

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## SOLUTION 4

Causes of differences between stock ledger balance and the actual physical stock taking are:

- i. Clerical error: This may be arithmetical error due to over or under cast of stock ledger balance and stock sheets
- ii. Error of Omission: Stock issued out and stock received into the store may not be recorded in the stock ledger.
- iii. Pilfering: Stealing of materials from stores by dishonest members of staff
- iv. Fraudulent Conversion: Purchasing officer may place order for stock on behalf of his employer, but convert such to personal use.
- v. Evaporation or Deterioration: Some items when kept too long may deteriorate.
- vi. Stock items not recorded on the stock taking sheet. Stock items may carelessly be left out of the stock sheet when recording the physical count.

### (a) COMPUTATION OF CLOSING STOCK AS AT 31 MARCH

	Le	Le	Le
Stock taking value as at 6 April			240,000
Add: Sales	100,000		
Less: Profit on sales (25% x 100,000)	<u>25,000</u>		
		75,000	
Under stated Stock		5,000	
Goods on "Sale or Return"	7,500		
Less: Profit (25% x 7,500)	<u>1,875</u>	5,625	
Purchases Returns		<u>1,000</u>	
			<u>86,625</u>
			326,625
Less: Purchases		80,000	
Sales Returns	2,000		
Less Profit 25% of 2000	<u>500</u>		
		1,500	
Stock sheet over cast		500	
Customer goods in warehouse	1,500		
Less: Profit (25% x <del>1,500</del> )	<u>375</u>		
		<u>1,125</u>	
			<u>83,125</u>
Closing stock as at 31 March			<u>243,500</u>

### EXAMINER'S COMMENT

The question tests candidates' knowledge of stock-taking and stock valuation. About 40% of the candidates attempted the question but displayed poor understanding of the requirements of the question. Performance and presentation was poor.

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Candidates are advised to ensure they master proper presentation formats for this type of questions.

## SOLUTION 5

### IN THE BOOK OF DECCO LTD BREACEENSITE QUARRY CO. LTD.

		L\$		L\$
2009			2008	
Jan 26	Cash	10,000,000	Dec. 31 Royalties	7,500,000
			Short working	<u>2,500,000</u>
		<u>10,000,000</u>		<u>10,000,000</u>
2010			2009	
Jan 26	Cash	10,000,000	Dec. 31 Royalties	8,750,000
			Short workings	<u>1,250,000</u>
		<u>10,000,000</u>		<u>10,000,000</u>
2011			2010	
Jan 26	Cash	10,000,000	Dec. 31 Royalties	13,000,000
	Short workings a/c	<u>3,000,000</u>		
		<u>13,000,000</u>		<u>3,000,000</u>

### ROYALTIES ACCOUNT

2008	2008
Dec. 31 Breaceensite Quarry Co. Ltd. a/c	Dec.31 P & L a/c
<u>7,500,000</u>	<u>7,500,000</u>
2009	2009
Dec.31 Breaceensite Quarry Co. Ltd. a/c	Dec. 31 P & L a/c
<u>8,750,000</u>	<u>8,750,000</u>
2010	2010
Dec 31 Breaceensite Quarry Co. Ltd. a/c	Dec. 31 P & L a/c
<u>13,000,000</u>	<u>13,000,000</u>

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(iii)	<u>Short-Workings Account</u>	
2008		2010
Dec. 31 Breaceensite Quarry Co. Ltd.	2,500,000	Dec. 31 Breaceensite Quarry Co. Ltd.
		3,000,000
2009		
Dec 31 Breaceensite Quarry Co. Ltd.	<u>1,250,000</u>	Dec. 31 Balance c/d
		<u>750,000</u>
	<u>3,750,000</u>	<u>3,750,000</u>
2011		
Jan 1 Balance b/d	750,000	

## EXAMINER'S COMMENT

The question on royalty account was attempted by about 40% of the candidates. Half of the candidates who attempted it, displayed good understanding of the question and scored good marks while the remaining performed poorly.

Candidates are advised not to neglect any area of the syllabus.

## SOLUTION 6

### JOINT VENTURE (WITH DELE) ACCOUNT

January	₦	January	₦
1 Bank Purchases	325,000	Bank: Remittance	100,000
Carriage	2,500	16 Bank: Sales	140,000
Insurance	4,500	20 Bank: Sales	80,000
16. Commission 5%	7,000	31 Bank: Sales	5,000
20. Commission 5%	4,000	Balance c/d	<u>19,000</u>
31. Office allowance	<u>1,000</u>		
	<u>344,000</u>		<u>344,000</u>
Balance b/d	19,000	Bank Statement	44,000
Share of profit	<u>25,000</u>		
	<u>44,000</u>		<u>44,000</u>

# INSIGHT

## JOINT VENTURE (WITH OLA) ACCOUNT

	N		N
January		January	
1. Bank (remittance)	100,000	16 Sales	100,000
10. 5% Commission	5,000	20 Sales	90,000
20. 5% Commission	4,500		
Bank: rent	6,000		
Handling charges	5,500		
Balance c/d	<u>69,000</u>		
	<u>190,000</u>		<u>190,000</u>
Share of profit	25,000	Balance c/d	69,000
Bank: Settlement	<u>44,000</u>		
	<u>69,000</u>		<u>69,000</u>

## MEMORANDUM JOINT VENTURE ACCOUNT

	N		N
Ola		Ola	
Purchases	325,000	Sales	140,000
Carriage	2,500	Sales	80,000
Insurance	4,500		
Office Allowance	1,000		
Commission	11,000	Dele	
Dele		Sales	100,000
Rent	6,000	Sales	90,000
Handling	5,500	Goods taken by Ola	5,000
Commission	9,500		
Net Profit c/d	<u>50,000</u>		
	<u>415,000</u>		<u>415,000</u>
Share of profit		<b>Net profit</b>	50,000
Ola			
Dele	25,000		
	<u>25,000</u>		
	<u>50,000</u>		<u>50,000</u>

### EXAMINER'S COMMENT

The question tests candidates' knowledge of Joint Venture account. About 90% of the candidates attempted the question and earned fairly good mark. Some candidates however posted debit items into the credit side of the ledger, while some mixed up the entries of the venturers' by interchanging one with the other.

Candidates are advised to adequately master fundamentals to ensure success.

# INSIGHT

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AT/211/PII.6

EXAMINATION NO:.....

**ASSOCIATION OF ACCOUNTANCY BODIES IN WEST AFRICA  
ACCOUNTING TECHNICIANS SCHEME  
PART II EXAMINATION – SEPTEMBER 2011  
GOVERNMENT ACCOUNTING**

Time allowed: 3 hours

Insert your Examination number in the space provided above

**SECTION A (Attempt all questions)**

**PART I MULTIPLE-CHOICE QUESTIONS (10 Marks)**

1. The following are recurrent expenditure warrants used by the Ministry of Finance **EXCEPT:**
  - A. Imprest Warrant
  - B. Provisional General Warrant
  - C. Supplementary General Warrant
  - D. Development Fund Supplementary General Warrant
  - E. Reserve Expenditure Warrant
  
2. According to the Financial Regulation, the type of accounting entry required for the loss of cash is **ONE** of the following:
  - A. Debit Non Personal Advance A/c Credit to Relevant Subheads
  - B. Debit Non Personal Advance A/c Credit Cash Account
  - C. Debit Non Personal Advance A/c Credit Revenue Sundry
  - D. Debit Non Personal Advance A/c Credit Account originally Debited
  - E. Debit loss of fund A/c Credit Advances Account
  
3. In 2009 the sum of ₦210,000 was approved for the upkeep of three secretariat buildings. It has been confirmed that two additional buildings will be completed and maintained during year 2010. The inflation factor proposed is 30%. You are required to calculate the budgetary proposal for the buildings upkeep in the year 2010
  - A. ₦ 350,000
  - B. ₦ 455,000
  - C. ₦ 273,000
  - D. ₦ 210,000
  - E. ₦ 105,000

# INSIGHT

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4. The budgeting technique that rejects the customary view of budgeting as an incremental process in which previous year's budget and actual figures serve as base for ensuing year's budget is known as:
  - A. Rolling Budget
  - B. Programming Planning and Budgeting System (PPBS) technique
  - C. Zero Base Budgeting (ZBB)
  - D. Performance Budgeting
  - E. Traditional Budgeting Technique
  
5. The Trading Profit and Loss Account of a private company is like the Revenue and Expenditure Account summary of a Local Government, just as the Balance Sheet of a private company is like the .....of a Local Government
  - A. Schedule of Advances Account Balances
  - B. Schedule of Deposit Account Balances
  - C. Schedule of Suspense Listing
  - D. Schedule of Loans Outstanding
  - E. Statement of Assets and Liabilities
  
6. The fund in which all Central/Federal Government revenue are to be lodged is.....fund
  - A. Contingency
  - B. Consolidated
  - C. General revenue
  - D. Special
  - E. Expenditure
  
7. The basis of preparing public sector account whereby all expenditures are expensed and incomes recognised as received is referred to as.....basis
  - A. Accrual
  - B. Cash
  - C. Commitment
  - D. Modified Cash
  - E. Modified Accrual
  
8. Which of the following is **NOT** an objective of Internal Audit in Local Government Council?
  - A. To determine the adequacy of the systems of Internal control
  - B. To investigate whether compliance with financial memoranda and other circulars are in force
  - C. To prepare the Cash flow statements of the Local Government
  - D. To verify the existence and ownership of asset
  - E. To check the reliability of accounting and reporting in the form of monthly returns

# INSIGHT

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9. Debt conversion can be defined as a strategy which enables a debtor country to reduce its external debt burden by changing the character of its debt. The following **EXCEPT ONE** are the modes of debt swaps:
- A. Debt refusal
  - B. Debt refinancing
  - C. Debt rescheduling
  - D. Debt for export (goods)
  - E. Debt for debt
10. The most potent technique for project evaluation in the public sector in its simplest form considers the purpose the project will serve either to the populace or to the accomplishment of political promises by the government in place. This technique is known as
- A. Cost control technique
  - B. Programming planning and Budgeting System (PPBS)
  - C. Cost Benefit Analysis (CBA)
  - D. Performance Appraisal Technique
  - E. Deficit Budgeting

## PART II SHORT-ANSWER QUESTIONS (30 MARKS)

1. A statement of income and expenditure, or receipts and payments, that is the final accounts of self accounting and sub-self accounting units is called.....
2. A..... is a memorandum account book used for the monitoring of government expenditure and ensures that there is no extra budgetary spending
3. State **TWO** functions of the Audit Alarm Committee (Audit Report Implementation Committee)
4. **ONE** of the conditions for the removal of the Auditor General for the Federation of your country is.....
5. Statement No. 3.2 is known as statement of ..... expenditure
6. Statement No 4 is known as statement of.....funds
7. The warrant issued to enable funds to be released for certain items of expenditure and expenses incurred before the appropriation Bill is passed is known as.....
8. Transfer of savings on one or more subheads to meet excess expenditure on another subhead in the same head in a vote is called.....

# INSIGHT

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9. The process in which cash receipt and disbursements are done according to the laid down rules and regulations is.....
10. State **TWO** documents that are required for the preparation of Bank Reconciliation statement in Government Establishments
11. The intelligent examination of the documents offered and the explanation given in substantiating the entries in the accounting records is.....
12. Under..... type of audit, audit work are completed to a particular date and carried out for a defined period, e.g quarterly or half yearly
13. Plant and Machinery, Motor Vehicles, Furniture etc are examples of .....stores
14. Shovels, matches, paint brushes are examples of ..... stores
15. State **TWO** methods of arriving at the value at which stores are to be taken on charge
16. A ministry or department, which has full control over all its accounting records is said to be a.....
17. ....are accounts created and controlled by the Accountant General, of which at the time of the budget, we cannot reasonably ascertain the exact amount of income receivable as well as expenditure incurable
18. A .....unit is a Ministry or department that has no control whatsoever over any of its accounting records
19. ....is one into which all receipts accruing to the federal government from the general taxing and revenue powers of the Government are credited
20. A .....could be defined as a separate fiscal and accounting entity, granted by special regulation, separated from other funds and established for a specific purpose
21. The fund which is established to hold resources meant for a specific purpose such as South Africa relief Fund, Liberia Relief funds etc is called.....
22. The control which relates to the strings of coordinated actions that must be taken in order to ensure that all funds available to an organisation are effectively, efficiently and reasonably managed to prevent financial misappropriation is called.....
23. The control which relates to the stream of coordinated activities that must be embarked upon to ensure that the various sources of income accruing to an organisation remain unaltered if not increased is.....

# INSIGHT

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24. The control which relates to the string of co-ordinated actions that must be embarked upon in order to ensure that all expenditure are wholly, exclusively and reasonably incurred for the purpose for which they were meant for is known as.....
25. A.....circular is a circular inviting ministries and departments to prepare their budget for the coming financial year
26. A .....circular is a circular amending existing rules and regulations or introducing new rules and regulations where there is none in place
27. What is credit note?
28. The process of tracing the stages a transaction goes through in the records of an organisation is known as.....
29. An analysis that is a means of measuring the total cost of an organisation is known as.....
30. The inclusion of entries in books of account, or in subsidiary or memorandum records to record obligations or commitments entered into as distinct from and in addition to expenditure incurred is known as.....

## SECTION B – Attempt any Four Questions (60 Marks)

### QUESTION 1

- (a) What is an adjustment voucher? (2 Marks)
- (b) What is the reason for raising adjustment voucher? (3 Marks)
- (c) The following is the list of balances of various accounts of Tema Local County Treasury for the month of December 2010.

	¢	
(i)	Reserve Funds	16,750
(ii)	Cash in hand	26,500
(iii)	Bank overdraft	2,850
(iv)	Revenue Capital	79,250
(v)	Expenditure Capital	62,695
(vi)	Loans	100,000
(vii)	Investments	7,500
(viii)	Advance granted by TLC	12,780
(ix)	Deposit into TLC Treasury	11,725
(x)	Suspense Accounts	101,100

**You are required to prepare a Trial Balance for December 2010.**

(10 Marks)

**(Total 15 Marks)**

# INSIGHT

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## QUESTION 2

On the examination of the books of the Ministry of Science and Technology the following transactions were extracted for the month of September 2009.

	N	N
(i) Balance b/d from August 2009 – Bank		3,300,000
- Cash		75,600
(ii) a. Allocation for Recurrent Expenditure		17,000,000
b. Allocation for Capital Expenditure		23,000,000
(iii) Final payment for the supply of furniture 211/12 (FBN cheque No 003816 issued)		9,200,000
(iv) Payment of Staff Salaries (FBN Cheque No. 0041116)		8,000,000
(v) Deductions made from Salaries		
Advances –Salary 15/6	30,000	
Advances –Motor Vehicle 15/8	130,000	
Advances-Correspondence 15/3	120,000	
Surcharge of Senior Officers 11/7	100,000	
(vi) Repairs of Motor vehicles 18/7- LKJ Motor (FBN cheque No. 001816)		116,000
(vii) Payment for Electricity 23/8 (FBN cheque No 004416)		194,000
(viii) Maintenance of office building 23/2 (FBN Cheque No 001616)		128,000

### Required:

- (a) Post these transactions into the Treasury Cash Book of the Ministry for the month of September 2009. (11 Marks)
- (b) State **FOUR** functions of the Local Government Treasurer. (4 Marks)
- (Total 15 Marks)**

## QUESTION 3

ABEDI PELE Local Government Council of GREEN EAGLES STATE made the following budgeted Revenue and Application for the year 2010 viz:

# INSIGHT

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	₦'000
Licences	900
Taxes	4,200
Statutory Allocation	2,400
Fines	600
	<u>8,100</u>

Budgeted Appropriation:	
Education	2,220
Maintenance of Roads	1,500
Health Delivery	1,680
General Administration	720
Security Maintenance	2,280
Others	90
	<u>8,490</u>

- (a) **You are required to** compute the minimum amount, which the council had to generate as the general fund balance to make the budget at the end of the 2010 fiscal year. (6<sup>1</sup>/<sub>2</sub> Marks)
- (b) Comment briefly on your answer to question (a) above. (2<sup>1</sup>/<sub>2</sub> Marks)
- (c) Prepare the necessary journal entries to reflect the approved budget as at 1 January 2010. (6 Marks)  
**(Total 15 Marks)**

## QUESTION 4

- (a) A Board of Enquiry may be set up to investigate the circumstances leading to an abnormality such as a loss of Fund or stores. **You are required to state FIVE reasons why a Board of Enquiry may be invited.** (5 Marks)
- (b) After the fire incident that consumed the entire Central Stores of GUNYUK LOCAL GOVERNMENT in June 2010, it became imperative for a proper stores accounting to be in place. The following information relate to the receipt of stationery materials in the Central Store in the Month of July 2010.

# INSIGHT

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Date	Action	Supplies/Department	Stock issued Voucher/ Stock Receipt Voucher No	Quantity
1 Jul 10	Balance			2,500
5 July 10	Issues	Finance & Accounts Dept.	502	200
6 July 10	Issues	Legal Dept	507	250
7 July 10	Issues	Environment Control	508	1,000
10 July 10	Purchases	EMMARAS ENT	2,500	750
12 July 10	Issues	Personnel Dept	509	570
16 July 10	Issues	Works dept	510	550
18 July 10	Issues	Research & Statistic Dept	512	650
21 July 10	Purchases	Boom NIG. ENT	1507	1780
31 July 10	Issues	Environment Control Dept	515	600

**Required:**

Enter the information on the Bin Card.

(10 Marks)

**(Total 15 Marks)**

**QUESTION 5**

(a) Distinguish between Gratuity and Pension. (5 Marks)

(b) List **FIVE** circumstances under which Pensions and Gratuity may be granted. (5 Marks)

(c) State **FIVE** documents required to process Gratuity and Pensions. (5 Marks)

**(Total 15 Marks)**

**QUESTION 6**

Below are the records of **HAITI LOCAL COUNCIL** as at December 2009 and 2010.

	<b>2009</b>	<b>2010</b>
	<b>Le</b>	<b>Le</b>
Balances		
Fixed Assets	800,000	700,000
Cash in hand	20,000	80,000
Cash at Bank	50,000	30,000
Subscription in arrears	30,000	40,000
Subscription in advance	40,000	20,000
Accrued expenses	70,000	30,000

**Required:**

(a) What would you call the Capital of HAITI COUNCIL at year 2009 and why? (2 Marks)

(b) Calculate the Capital of the Council at year 2009. (10 Marks)

(c) What is budgetary Control? (3 Marks)

**(Total 15 Marks)**

# INSIGHT

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## SECTION A

### PART I MULTIPLE-CHOICE SOLUTIONS

1. D
2. B
3. B
4. C
5. E
6. B
7. B
8. C
9. A
10. C

### EXAMINER'S COMMENT

Multiple Choice Questions (1 – 10) were compulsory and were well attempted by all the candidates. The performance was impressive with about 70% of the candidates scoring above 50% of mark obtainable.

## SECTION B

### SHORT ANSWER SOLUTIONS

1. Transcript
2. Vote Book
3.
  - (a) To sit and deliberate on any alarm brought to their notice.
  - (b) To ensure that fraudulent or irregular payments are not made especially where they have been put upon enquiry.
  - (c) Impose sanctions on any erring officers in accordance with the guidelines.
  - (d) Have access to the Governor through the Governor's representative on the Audit Alarm Committee.
  - (e) To notify the public accounts committee of audit alarm of significant importance and serious prepayment audit queries for which the accounting officer of the local government is responsible.

(Any two of the above)

# INSIGHT

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4. (a) Ill-health  
(b) Insanity  
(c) Death  
(d) Gross misconduct  
(Any one (1) of the above)
5. Recurrent expenditure
6. Development funds
7. Provisional General Warrant
8. Virement
9. Due Process
10. (i) Cheque Summary Register  
(ii) Monthly bank statement  
(iii) Cheque stubs  
(v) Cash Book
11. Auditing
12. Periodic
13. Non-Expendable store
14. Expendable stores
15. Fixed price method, Last known price method. Last In First Out Pricing method (LIFO), First In First Out Pricing method (FIFO), Weighted Average Method
16. Self-Accounting unit
17. Below the line Account
18. Non-self accounting unit
19. Federation Account
20. Funds
21. Special Funds
22. Cash Control

# INSIGHT

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23. Revenue Control
24. Expenditure Control
25. Call Circular
26. Treasury Circular
27. A credit note is a document usually relating to returned goods or refund which can be regarded as “negative invoice”. If an entity issue a credit note then the value of the total sales made is reduced by the amount recorded on it.
28. Audit Trails
29. Cost Accounting
30. Commitment Accounting

## EXAMINER’S COMMENT

Short Answer Questions (1 – 10) were attempted. Performance of 85% of the candidates, scoring above 70% of obtainable marks was good. In Short Answer Questions (11-20), all the candidates attempted the questions and about 60% scored above 50%. Moreover, in Short Answer Questions (21 – 20) all the candidates attempted the question and about 60% scored above 50%. However, in Short Answers Questions (21 – 30), the attempt on these questions was about 45% of the candidates and about 55% of them scored about 50%.

## SOLUTION 1

- (a) Adjustment Voucher are the vouchers designed to effect adjustment or correction in account entries without movement of cash. It is a form of journal entry (T. F. 23) i.e. Debit entry and Credit entry. (correct definition = 2 marks).
- (b) Transactions involving adjustment voucher
  - (i) Correction of accounting errors arising from misclassification or error of entries.
  - (ii) To effect inter-ministerial or inter-departmental payments
  - (iii) Correction of wrong posting in respect of Revenue and Expenditure Head
  - (iv) Ultimate allocation of unallocated stores
  - (v) Treatment of advances and below the line account entries

# INSIGHT

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## TERMA LOCAL COUNTRY GOVERNMENT

### TRIAL BALANCE FOR THE MONTH OF DECEMBER 2010

	<b>DR</b>	<b>CR</b>
	¢000	¢000
i. Reserve fund		16,750
ii. Cash at hand	26,500	-
iii. Bank Overdraft	-	2,850
iv. Revenue Capital	-	79,250
v. Expenditure Capital	62,695	
vi. Loans		100,000
vii. Investment	7,500	
viii. Advance Gratuity TLC	12,780	
ix. DEPOSIT INTO TLC TREASURY		11,725
x. SUSPENSE ACCOUNT	<u>101,100</u>	
	<u>210,575</u>	<u>210,575</u>

#### EXAMINER'S COMMENT

The question tested the meaning and reason for raising adjustment vouchers with Part 'C' requesting candidates to prepare a Trial Balance. Up to 90% of the candidates attempted the question. More than 80% scored above 50%.

# INSIGHT

## SOLUTION 2

### ACCOUNTING RECORDS FOR GOVERNMENT TREASURY CASH BOOK MINISTRY OF SCIENCE AND TECHNOLOGY TREASURY CASH BOOK FOR THE MONTH OF SEPTEMBER 2009

VOUCHER NO	FROM WHOM	CLASSIFICATION	TREASURY RECEIPT NO	BANK SLIP NO	CASH	BANK	TOTAL AMOUNT	TREASURY NO.	TO WHOM	CLASSIFICATION	PAY BANK	CHEQUE NO	GROSS AMOUNT	DEDUCT OR CASH	BANK OR NET
					₺	₺	₺						₺	₺	₺
Sept 2009	Bal b/d Exp. Allocation				75,600	3,300,000	3,375,600		Supply of Furniture	211/12	FBN	003816	9,200,000		9,200,000
	Recurrent Expenditure					17,000,000	17,000,000		Salaries		FBN	4116	8,000,000	380,000*	7,620,000
	Capital Expenditure					23,000,000	23,000,000		Repair of Motor Vehicles	18/7	FBN	1816	116,000		116,000
									Electricity	18/7	FBN	4416	194,000		194,000
									Maint.	23/2	FBN	1616	128,000		128,000
									Bal c/d				25,737,600	75,600	26,042,000
					75,600	43,300,000	43,375,600						43,375,600	75,600	43,300,000
Oct. 2009	Balance b/d				75,600	26,042,000	25,737,600								

\*Represents deductions not cash flow and not considered in the balance carried forward.

**SUGGESTED SOLUTION 2**

**b. FUNCTIONS OF THE LOCAL GOVERNMENT TREASURER**

- i. He is responsible for all the receipts and disbursement of funds.
- ii. He is responsible for keeping accurate and timely accounting records of funds received or disbursed.
- iii. He must ensure that all records kept by his subordinate officers are checked routinely for accuracy.
- iv. He is to intimate the Local Government of any economic policy that will increase the Internally Generated Revenue (IGR) of the Council.
- v. He must ensure that all revenue collectors exploit the opportunities available for the collection of all forms of revenue as specified in the budget estimate.
- vi. He is to see that all laid out procedures as regards disbursement of funds are followed.

**EXAMINER'S COMMENT**

Question 2(a) tested the Preparation of Treasury Cash Book. About 85% of the candidates attempted the question while, about 40% among them scored just about 50% of marks obtainable. In question 2(b) which was on functions of Local Government Treasurer, their performance was below average as less than 20% of the candidates scoring about 50% of marks obtainable. The question is recommended to be tested again in future.

**SOLUTION 3**

**(a) ABEDI PELE LOCAL GOVERNMENT  
GENERAL FUND BALANCE**

	N'000	N'000
<b>REVENUE</b>		
Licences		900
Taxes		4,200
Statutory Allocation		2,400
Fines		<u>600</u>
		8,100
Less:	N'000	
- Education	2,220	
- Maintenance of Roads	1,500	
- Health Delivery	1,680	
General Administration	720	
Security Maintenance	2,280	
Others	<u>90</u>	(8490)
		<u>(390)</u>

## INSIGHT

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- (b) The minimum amount which ABEDI PELE Local Government is expected to have as general fund balance at the end of 2010 fiscal year is ₦390,000, and has to be funded.

(c) **JOURNAL ENTRIES FOR REVENUE AND EXPENDITURE BUDGET 2010**

		DR ₦'000	CR ₦'000
1.	Licenses	900	
	General Revenue Fund		900
2.	Taxes	4,200	
	General Revenue Fund		4,200
3.	Statutory Allocation	2,400	
	General Revenue Fund		2,400
4.	Fines	600	
	General Revenue Fund		600
5.	General Revenue Fund	2220	
	Education		2220
6.	General Revenue Fund	1,500	
	Capital Development Fund		1,500
7.	Capital Development Fund	1,500	
	Maintenance of Road		1,500
8.	General Revenue Fund	1,680	
	Health Delivery		1,680
9.	General Revenue Fund	720	
	General Administration		720
10.	General Revenue Fund	2,280	
	Security Maintenance		2,280
11.	General Revenue Fund	90	
	Others		90

### EXAMINER'S COMMENTS

The question is on computation of Local Government Council general fund balance. Although the question appears simple, yet, most of the candidates did not attempt the question. About 30% of candidates attempted the question and less than 10% of them scored above 50% of mark obtainable. A standard question that is recommended is to be tested in future exercise.

### SOLUTION 4

- (a) (i) If fraud could have taken place
- (ii) If the loss is significant
- (iii) If the fraud or loss has taken place through a syndicate
- (iv) If the responsibility of officers is not well spelt out.
- (vi) If the loss took place systematically over time

## INSIGHT

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(b) GUNYUK LOCAL GOVERNMENT  
BIN CARD FOR THE MONTH OF JULY 2010

Date	Particulars	SIV, SRV Other Invoice	Receipt Qty	Issue Qty	Balance Qty
July 1	Balance B/f				2500
July 5	Issue to Finance & Accounts Dept	502		200	2300
July 6	Issue to Legal Department	507		250	2050
July 7	Issue to Environment Dept.	508		1000	1050
July 10	Purchase from EMMARAS Entr.	2500	750		1800
July 12	Issue to the Person Dept.	509		570	1230
July 16	Issue to Works Department	510		550	680
July 18	Issue to Research & Statistics Dept.	510		650	30
July 21	Purchase from BOOM Nig. Ent. Dept.	1507	1780		1810
July 31	Issue to Environment Cont Dept.	515		600	1210

### EXAMINER'S COMMENT

Part 4'a' of the question tested the reasons for inviting a Board of Enquiry. About 40% of the total number of candidates that attempted the question scored above 80%. In part 4(b), based on store accounting, preparation of Bin Card was tested. Performance was impressive as about 90% of candidates scored above 95% of marks obtainable.

In general, above 92% of the candidates attempted the question.

### SOLUTION 5

(a) Gratuity - is the lump sum of monetary reward paid to an officer enbloc who has served an organization usually for a period not less than 5 years.

While

Pension - is a monthly entitlement/amount paid to an officer who has served an organization for a period not less than 10 years. The officer should not be less than 45 years old under the old pension scheme or not less than 50 years old under the new pension scheme before he/she can start enjoying pension benefits.

(b) 5 circumstances under which pensions and gratuity may be granted.

- (i) On voluntary retirement or withdrawal after qualifying service.
- (ii) On attaining maximum statutory age of 60 years or length of service of 35 years.
- (iii) On compulsory retirement
- (iv) On advice of a properly constituted medical board certifying that the officer is no longer medically or physically fit to perform his duties.
- (v) When the office is determined or abolished.

(c) **DOCUMENTS TO BE SUBMITTED BY RETIRING OFFICER FOR PENSION**

- (a) Letter/Gazette of First Appointment
- (b) Letter/Gazette of Confirmation of Appointment
- (c) Letter/Gazette of Last Promotion
- (d) Letter of Approval of Retirement
- (e) Clearance letter/form of non indebtedness
- (f) Biodata form
- (g) A copy of record of service
- (h) Copies of closed personal emolument record card
- (i) Passport Photograph
- (j) Death certificate in case of death pension claims
- (k) Marriage certificate/birth certificate

**EXAMINER'S COMMENT**

The question is on Gratuity and Pension. This is a practical question and hence, most of the candidates exhibit good understanding of the question. About 90% of the candidates attempted the questions with over 65% of them scoring above 60% of the total marks obtainable.

**SOLUTION 6**

- a. I would call the capital of the Council **CAPITAL FUND** because the units are a non-profit making organisation.
  
- b. Calculation of Haiti Council Capital Fund at 2009

	Le
Fixed Assets	800,000
Cash at hand	20,000
Cash in Bank	50,000
Subscription in arrears	<u>30,000</u>
	<u>900,000</u>
Liabilities	
Subscription in advance	40,000
Accrued Expenses	<u>70,000</u>
	<u>110,000</u>
Capital fund at 2009	790,000

**NOTE:**

In Calculating the capital fund at end of period of a non-profit making entity

- Calculate the capital fund at the beginning of the period
- Add excess of income over expenditure of the period
- Deduct excess of expenditure over income of the period
- Apply the formula: total assets minus liabilities at the end of the period

- c. Budgetary control involves, the continuous measuring of actual expenditure and outputs and comparing these with the budgetary position.

The differences or variances are analysed and reasons ascertained. Then the individual accounting officers are notified so that corrective action can be taken to bring about correspondence between the actual position and the planned position.

### **EXAMINER'S COMMENT**

This paper was on preparation of accumulated fund and definition of Budgetary Control. Almost all the candidates (98%) attempted this paper. However, the performance of about 96% of the candidates that attempted Q6 (a&c) was woeful as they scored less than 20% of mark. In Q6(b), this was like a bonus to the candidates as more than 94% of them scored above 50% of mark obtainable.

# INSIGHT

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AT/211/PII.7

EXAMINATION NO:.....

**ASSOCIATION OF ACCOUNTANCY BODIES IN WEST AFRICA  
PART II EXAMINATION – SEPTEMBER 2011  
QUANTITATIVE ANALYSIS**

**Time allowed: 3 hours**

Insert your examination number in the space provided above

**SECTION A - Attempt All Questions**

**PART I MULTIPLE-CHOICE QUESTIONS (10 Marks)**

1. The prices of a commodity in 2008 and 2009 were N400,000 and N600,000 respectively. The price relative, using 2008 as the base year is
  - A. 33.33%
  - B. 66.67%
  - C. 150.00%
  - D. 50.00%
  - E. 160.00%
  
2. Which of these costs gives a straight line when plotted against order size?
  - A. Total Holding cost
  - B. Total Ordering cost
  - C. Total Inventory cost
  - D. Total Discount cost
  - E. Total Variable cost
  
3. All these are numeric ordinal data **EXCEPT:**
  - A. Income
  - B. Price of an item
  - C. Number of barrels of oil
  - D. Number of students in a class
  - E. Rank of a soldier
  
4. The present value of ₦1.2million at 22% simple interest rate over 10 years is
  - A. ₦ 485,000
  - B. ₦3,200,000
  - C. ₦1,200,000
  - D. ₦ 983,607
  - E. ₦ 375,000

5. A Network diagram must have
- More than one starting event and only one finishing event
  - One starting event and one finishing event
  - One starting event and more than one finishing event
  - No dummies
  - Only ten nodes
6. On the average, 40% of a set of candidates pass an examination. If 10 of such candidates are selected at random, find the probability that at least 8 of them passed the examination.
- 0.012
  - 0.014
  - 0.016
  - 0.018
  - 0.099
7. If  $\begin{pmatrix} -2 & -8 \\ 14 & -21 \end{pmatrix} = 1 \begin{pmatrix} -2 & 2 \\ 3 & -b \end{pmatrix} + 2 \begin{pmatrix} -6 \\ c \end{pmatrix}$
- Find  $a - b$
- 8
  - 6
  - 0
  - 6
  - 8
8. If the 3<sup>rd</sup> term of a geometric progression is 4 and the 5<sup>th</sup> term is 9, then the common ratio is
- 3
  - 2
  - $\frac{3}{2}$
  - $\frac{2}{3}$
  - $\frac{9}{4}$
9. The length of the arrows representing activities is not important because
- The Network contains only one critical path
  - The Network does not contain dummies
  - Networks are not drawn to scale
  - The scale to use in drawing the Network is always supplied
  - Scale rule or ruler is not always available in the examination hall.

## INSIGHT

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10. Given that the annual demand for an item is 6,400, the cost of an order is ₦24 and holding cost per unit of an item is ₦3 per annum, calculate the Economic Order Quantity.
- A. 360
  - B. 330
  - C. 320
  - D. 325
  - E. 340

### PART II SHORT- ANSWER QUESTIONS (30 Marks)

1. If the EOQ for a commodity is 540, annual demand for the commodity is 8,100 and the holding cost per annum is ₦1, then the ordering cost is.....
2. Acceptance of the null hypothesis when it is false is the.....
3. The cost of keeping manufactured items in storage for a given time is.....
4. The difference between the revenue function and cost function of any project is the.....function.
5. Free hand method, semi-average method, method of least squares and method of moving average are methods of estimating the.....
6. What compound interest rate will be required to obtain L\$200,000 after 5 years with an initial principal of L\$120,000?
7. A portion of the graph that satisfies all the constraints in a Linear Programming problem is known as.....
8. A savings account with Le628,312 as actual amount, has an estimated figure as Le628,000. Determine the relative error?
9. The mean is meaningless for.....data.
10. In using the Cramer's Rule to solve the following equaton:  
$$2x_1 - 3x_2 = -4$$
$$x_1 + x_2 = 3$$
  
Dy - Dx is obtained as.....
11. For a problem to be amenable to solution by the Linear Programming method, all factors concerned must have.....relationships.
12. An activity that consumes neither time nor resources is a.....activity.
13. The number of float types used in Network Analysis is.....

## INSIGHT

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14. If the demand function for a commodity is  $y=12+2x - x^2$ . Find the consumers' surplus when  $x_0 = 3$ .
15. When stock is ordered outside the system the quantity ordered is the Economic.....Quantity while stock manufactured within the system is the Economic.....Quantity.
16. The expectation of the sample mean is the.....
17. When the Correlation Coefficient is positive, it is said to be .....correlated
18. How much will ₦150,000 amount to in 3 years, if interest rate is 12% per annum compounded quarterly?
19. A tenant rents an apartment with an agreement that provides for a regular annual increase of Le2,500. If the rent in the first year is Le60,000, what is the rent in the tenth year?
20. A function where one variable is directly expressed in terms of the other variable(s) is called.....function, while a function where the relationship between the variables is expressed as an equation involving all the variables is known as.....function.
21. The difference between a sample statistic and its corresponding population parameter is called.....
22. In business analysis, the.....cost is always constant.
23. Chronological classification of data deals with classification with respect to.....
24. The measures of location which are **NOT** affected by extreme values are the.....and the.....
25. Two matrices are equal if they are of the same.....and all the elements in the corresponding positions are.....
26. Typically, transportation problems deal with a number of sources of.....and.....
27. A list containing all the possible outcomes of a random experiment is called.....
28. Stock-out in inventory refers to a situation when there is.....for an item which is not in.....
29. The probability that bank A fails is 0.7 and the probability that bank B fails is 0.6 while 0.5 is the probability that both banks fail. The probability that bank A fails given that bank B has failed is.....

30. In Network Analysis, the two time estimates that can be used are.....time and.....time.

**SECTION B – Attempt Any Four Questions out of which at Least one Must Come From Each Sub-Section (60 Marks)**

<b>STATISTICS</b>
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**QUESTION 1**

The electricity and telephone bills for ten households are given in the table below.

Electricity bill	10	20	30	40	50	60	70	80	90	100
Telephone bill	20	25	30	40	35	50	60	45	65	70

**Required:**

- (a) Determine the Pearson’s product moment correlation between the two bills. (12 Marks)
- (b) Comment on your results above. (3 Marks)
- (Total 15 Marks)**

**QUESTION 2**

The following table shows the number of hours of sunshine recorded during a particular month in a city

Hours of sunshine	Number of days
0 and under 1	1
1 and under 2	2
2 and under 3	4
3 and under 4	11
4 and under 5	24
5 and under 6	43
6 and under 7	35
7 and under 8	54
8 and under 9	31
9 and under 10	10

# INSIGHT

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## Required:

- (a) Construct a Histogram and estimate the mode of the distribution (6 Marks)
- (b) Construct a frequency polygon (3 Marks)
- (c) Construct an Ogive and estimate the median (6 Marks)
- (Total 15 Marks)**

## QUESTION 3

The table below shows laboratory results obtained when six patients underwent two tests:

Fat (Xkg)	Cholestrol (Ykg)
10	25
20	20
30	40
40	30
50	50
60	35

## Required:

- (a) Determine the regression coefficient and the regression constant for cholesterol on fat. (13 Marks)
- (b) Determine the amount of cholesterol in a patient with 70kg of fat. (2 Marks)
- (Total 15 Marks)**

## BUSINESS MATHEMATICS

## QUESTION 4

- (a) The marginal revenue function MR is given as  $(20 - 4q)$  where  $q$  is the number of units produced and sold. If the total revenue is ₦300 when 2 items were sold, determine the total revenue function. (8 Marks)
- (b) The marginal cost of producing an item ( $x$ ) is  $3+5x+3x^2$  and the total cost of producing one unit is ₦10. Find the total cost function. (7 Marks)

## QUESTION 5

- (a) The total annual revenue of WOYEB Enterprises Ltd (in Cedis) is given as

$$R(x) = 350,000(0.4)^{0.1x}$$

Where  $x(\text{¢'000})$  is the amount spent on overheads

# INSIGHT

**Required:**

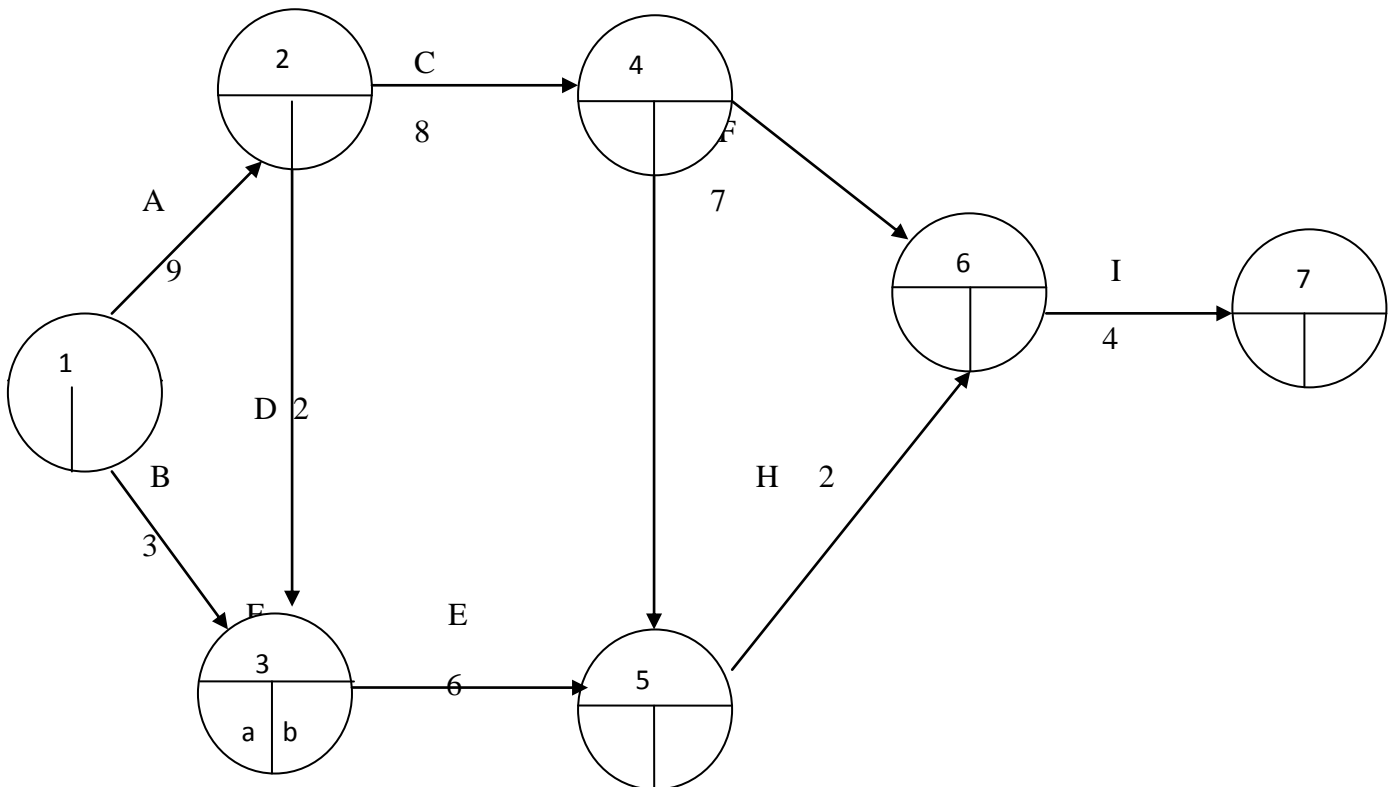
- (i) If ₪30,000 is spent on overheads, what is the total revenue?
- (ii) Calculate the maximum revenue (6 Marks)
  
- (b) 150 sets of furniture are sold when the price is ₪32,000 while 430 sets of furniture are sold when the price is ₪28,500

**Required:**

- (i) Obtain the demand equation.
  - (ii) How many sets of furniture will be sold if the price is ₪29,000?
  - (iii) What is the maximum price that could be paid for a set of furniture? (9 Marks)
- (Total 15 Marks)**

**OPERATIONS RESEARCH**

**QUESTION 6**



**Note that:**    **a = Earliest start time**  
                   **b = Latest start time**

The figure above shows the Network diagram for a project in which the duration of each activity is indicated in weeks.

**Required:**

- (a) Copy and complete the above Activity-on-Arrow Network diagram showing all earliest times and all latest start times in the events. (9 Marks)
- (b) (i) Identify the critical path and estimate its duration from (a) above (2 Marks)  
(ii) State how long it will take to complete the project (1 Mark)
- (c) Calculate the total float for activities C, D, E, F, G and H (3 Marks)
- (Total 15 Marks)**

**QUESTION 7****LINEAR PROGRAMMING – TRANSPORTATION**

An examination body is conducting a nation-wide certificate examination in four different locations in Nigeria. The locations are divided into four geographical regions North-East, South-West, South-East and North-West. The examination centers demanded for 1250 examination materials in the North-East, 1250 in the South-West, 2100 in the South-East and 400 in the North-West. The examination body operates from three different regional offices  $R_1$ ,  $R_2$  and  $R_3$ . It has 2,000 examination materials available in  $R_1$ , 1,000 examination materials available in  $R_2$  and 2,500 examination materials in  $R_3$ . The details of the transportation costs in Naira are given in the table below:

Regional Offices	Geographical Regions			
	North-East	South-West	South-East	North-West
$R_1$	60	320	180	40
$R_2$	20	180	60	160
$R_3$	80	100	40	100

**Required:**

- (a) Construct a transportation table for the examination body. (2 Marks)
- (b) Is the transportation table in (a) above balanced? (1 Mark)
- (c) If the answer to (b) above is No, then balance the table. (5 Marks)
- (d) Use the Least Cost Method to determine the initial allocation for the examination body. (7 Marks)
- (Total 15 Marks)**

## SECTION A

### PART I MULTIPLE-CHOICE SOLUTIONS

1. C
2. A
3. E
4. A
5. B
6. A
7. D
8. C
9. C
10. C

#### Workings

$$\begin{aligned} 1. \quad \text{P.R.} &= \frac{60,000}{40,000} \times \frac{100}{1} \\ &= 150\% \end{aligned}$$

$$4. \quad A = P(I + r.n)$$

$$\therefore P = \frac{A}{1+r.n}$$

$$= \frac{1.2}{1+(0.22)10}$$

$$= 0.375\text{m} = \text{N}375,000$$

6. Let x rep. the no. that passed

$$\begin{aligned} P(x \geq 8) &= {}^{10}C_8 (0.4)^8(0.6)^2 + {}^{10}C_9(0.4)^9(0.6) + {}^{10}C_{10}(0.4)^{10} \\ &= 0.106 + 0.0016 + 0.000105 \\ &= 0.012 \end{aligned}$$

## INSIGHT

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$$\begin{aligned} 7. \quad \begin{pmatrix} -2 & -8 \\ 14 & -21 \end{pmatrix} &= a \begin{pmatrix} -2 \\ 3 \end{pmatrix} + b \begin{pmatrix} -6 \\ c \end{pmatrix} \\ &= \begin{pmatrix} 2 + 2b & -6 - 2c \\ 2a - 3b & -6a + 3c \end{pmatrix} \end{aligned}$$

$$\begin{aligned} \implies 2 + 2b &= -2, & b &= -2 \\ 2a - 3b &= 14, & a &= 4 \\ -6 - 2c &= -8, & c &= 1 \end{aligned}$$

$$a - b = 4 - (-2) = 6$$

$$\begin{aligned} 8. \quad ar^n &= T_n \\ ar^{3-1} &= 4 \implies ar^2 = 4 \\ ar^{5-1} &= 9 \implies ar^4 = 9 \\ \frac{ar^4}{ar^2} &= \frac{9}{4} \\ r^2 &= \left(\frac{3}{2}\right) \\ \therefore r &= \frac{3}{2} \text{ or } -\frac{3}{2} \end{aligned}$$

$$\begin{aligned} 10. \quad \text{EOQ} &= \sqrt{\frac{2cd}{h}} \\ &= \sqrt{\frac{2 \times 24 \times 6400}{3}} \\ &= \mathbf{320} \end{aligned}$$

### EXAMINER'S COMMENT

The syllabus is fairly covered by ten questions. Generally, candidates' performance was just fair.

### SHORT-ANSWER SOLUTIONS

1. ₹18
2. Type 2 Error
3. Carrying cost or holding cost
4. Profit function or loss function
5. Trend
6. 10.8%
7. Feasible Region
8. 0.0004966 or 0.0005 or 0.05%

9. Qualitative or nominal or categorical or non-numeric
10. 5
11. Linear
12. Dummy
13. 3
14. 9
15. Order and Batch (in that order)
16. Population mean
17. Positively
18. ₦213,864.13
19. Le82,500
20. Explicit, implicit (in that order)
21. Sampling error or estimation error
22. Fixed
23. Time
24. Median and mode
25. Dimension or order, equal (in that order)
26. Supply, destination or demand (in that order)
27. Sample space
28. Demand or order or request, Store/warehouse (in that order)
29. 0.83
30. Earliest start time, latest finish time

## Workings

$$1. \quad Q = \sqrt{\frac{2cd}{h}} \quad \text{i.e.} \quad 540 = \sqrt{\frac{2cx8100}{1}}$$

$$\therefore c = \frac{540^2}{2 \times 8100} = \text{₦}18$$

## INSIGHT

6.  $A = P(1 + r)^n$   
 $200,000 = 120,000 (1 + r)^5$   
 $1.6667 = (1 + r)^5$   
 $1 + r = (1.6667)^{1/5}$   
 $\therefore r = 0.1076 = 10.8\%$
8. Relative error =  $e/(x + e)$   
 $= 312/628,312$   
 $= 0.0004966$   
 i.e. 0.0005 or 0.05%
10.  $2x_1 - 3x_2 = -4$   
 $x_1 + x_2 = 3$   
 $\Delta_x = \Delta_{x_1} = \begin{vmatrix} -4 & -3 \\ 3 & 1 \end{vmatrix} = 4 + 9 = 5$   
 $\Delta_y = \Delta_y = \begin{vmatrix} 2 & -4 \\ 1 & 3 \end{vmatrix} = 6 + 4 = 10$   
 $\Delta_y - \Delta_x = \Delta_2 - \Delta_{x_1} = 10 - 5 = 5$
14.  $y = 12 + 2x - x^2$   
 When  $x_0 = 3$ ,  $y_0 = 12 + 6 - 9 = 9$   
 Consumers' surplus =  $\int_0^3 (12 + x - x^2) dx - x_0 \cdot y_0$   
 $= 12x + x^2 - \frac{x^3}{3} \Big|_0^3 - (3)(9)$   
 $= 36 + 9 - 9 - 27$   
 $= 9$
18.  $A = P(1 + r)^n$   
 $r = \frac{0.12}{4}$ ,  $n = 4 \times 3 = 12$   
 $\therefore A = \text{R}150,000 \left[ 1 + \frac{0.12}{4} \right]^{4 \times 3}$   
 $= \text{R}213,864.13$
19. Rent in the 10th year =  $a + (n - 1)d$   
 $= 60,000 + (10 - 1)2,500$   
 $= \text{Le} \text{R}82,500$
29.  $P(A \cap B) = P(B) P(A/B)$   
 $\therefore P(A/B) = \frac{P(A \cap B)}{P(B)}$   
 $= \frac{0.5}{0.6} = 0.83$

# INSIGHT

## EXAMINER'S COMMENT

The spread of the questions within the syllabus is satisfactory. Generally, the performance of the candidates was average.

## SECTION B

### SOLUTION 1

x	y	x <sup>2</sup>	y <sup>2</sup>	xy
10	20	100	400	200
20	25	400	625	500
30	30	900	900	900
40	40	1600	1600	1600
50	35	2500	1225	1750
60	50	3600	2500	3000
70	60	4900	3600	4200
80	45	6400	2025	3600
90	65	8100	4225	5850
100	70	10000	4900	7000
550	440	38500	22000	28600

Pearson's product moment  
relation coefficient, r

$$\begin{aligned} r &= \frac{n\sum XY - (\sum X)(\sum Y)}{\sqrt{[n\sum X^2 - (\sum X)^2][n\sum Y^2 - (\sum Y)^2]}} \\ &= \frac{10(28600) - (550)(440)}{\sqrt{[10(28600) - (550)^2][10(22000) - (440)^2]}} \\ &= \frac{286000 - 242000}{\sqrt{(82500)(26400)}} \\ &= 0.9428 \end{aligned}$$

- (b) Since  $r = 0.9428$ , it means that there is strong positive correlation between the electricity bill and telephone bill. i.e. as the electricity bill increases, the telephone bill also increases.

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## INSIGHT

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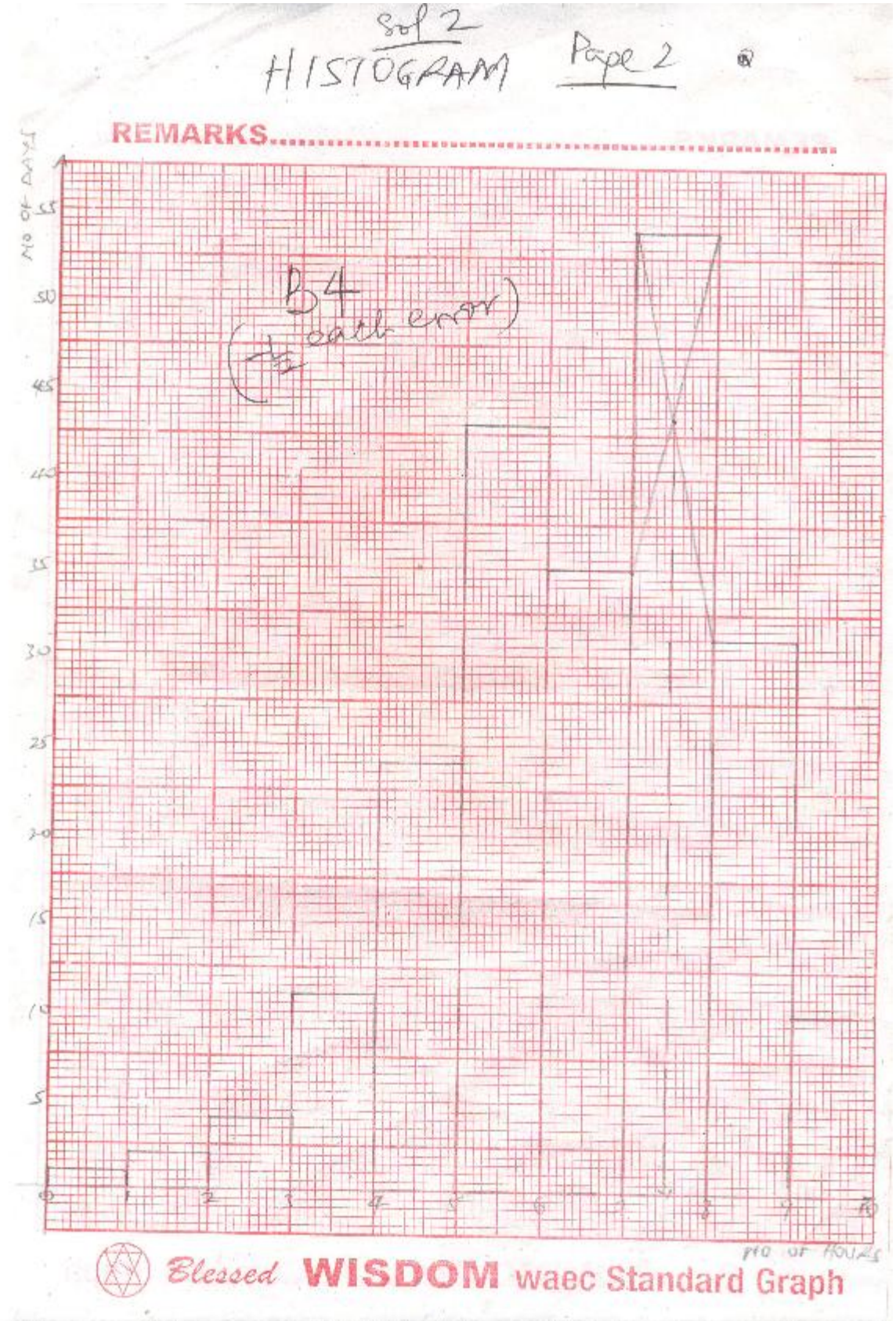
### EXAMINER'S COMMENT

This question is on correlation where the candidates' knowledge of Pearson's product moment is tested. About 95% of all the candidates attempted the question with an average score of about 10 out of 15 marks allocated to it. However, some candidates failed to demonstrate the required understanding of the application of the topic.

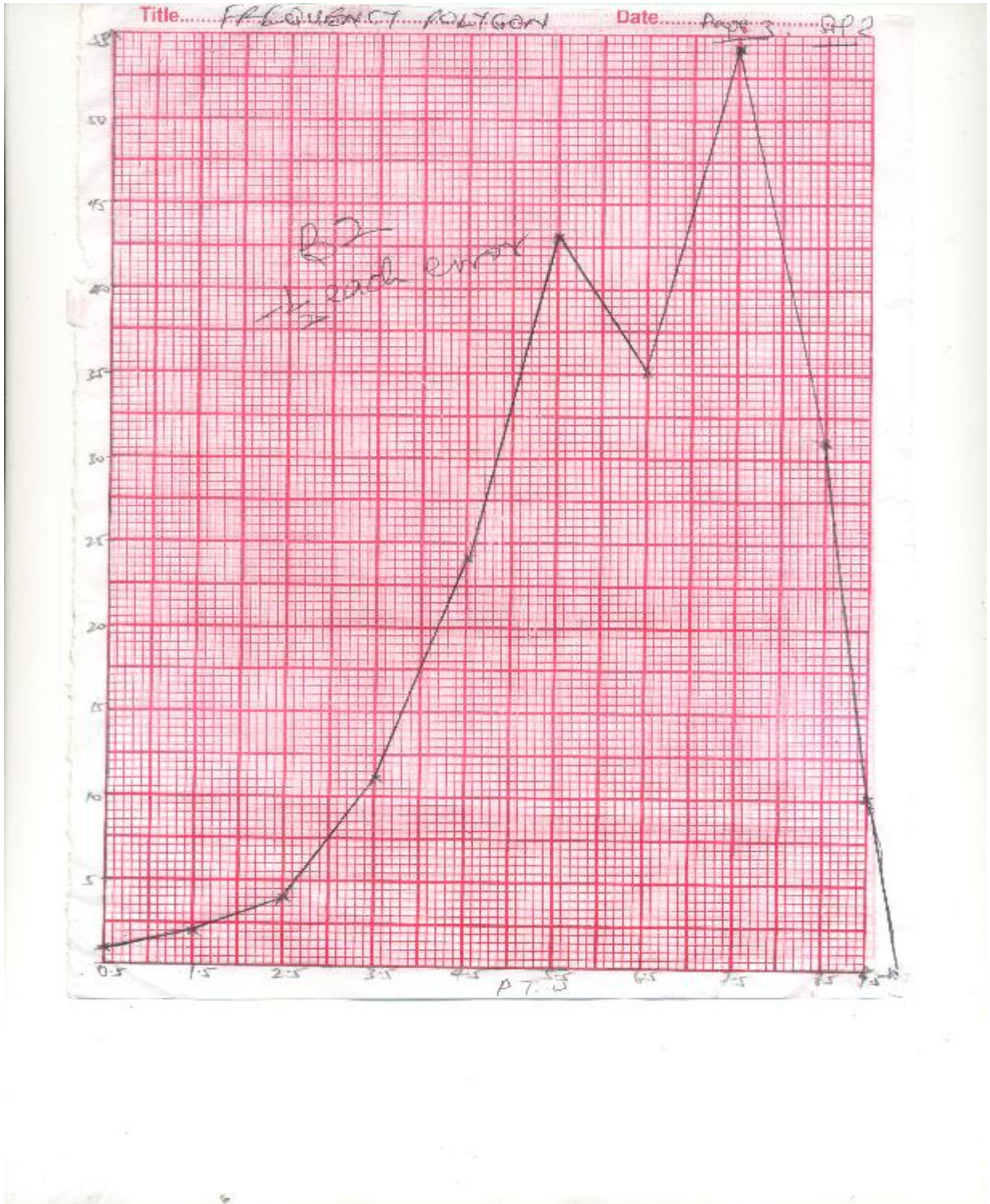
### SOLUTION 2

CLASS INTERVAL	FREQUENCY	CLASS CENTRE	CUMMULATIVE FREQUENCY
0 – 1	1	0.5	1
1 – 2	2	1.5	3
2 – 3	4	2.5	7
3 – 4	11	3.5	18
4 – 5	24	4.5	42
5 – 6	43	5.5	85
6 – 7	35	6.5	120
7 – 8	54	7.5	174
8 – 9	31	8.5	205
9 – 10	10	9.5	215

- (a) Histogram is as constructed  
From the histogram, Mode =  $7.5 \pm 0.1$
- (b) Frequency polygon is as constructed
- (c) From the cumulative frequency curve,  
Median position =  $\frac{N + 1}{2} = \frac{215 + 1}{2} = \frac{216}{2} = 108^{\text{th}}$  observation  
 $\therefore$  Median =  $6.65 \pm 0.1$

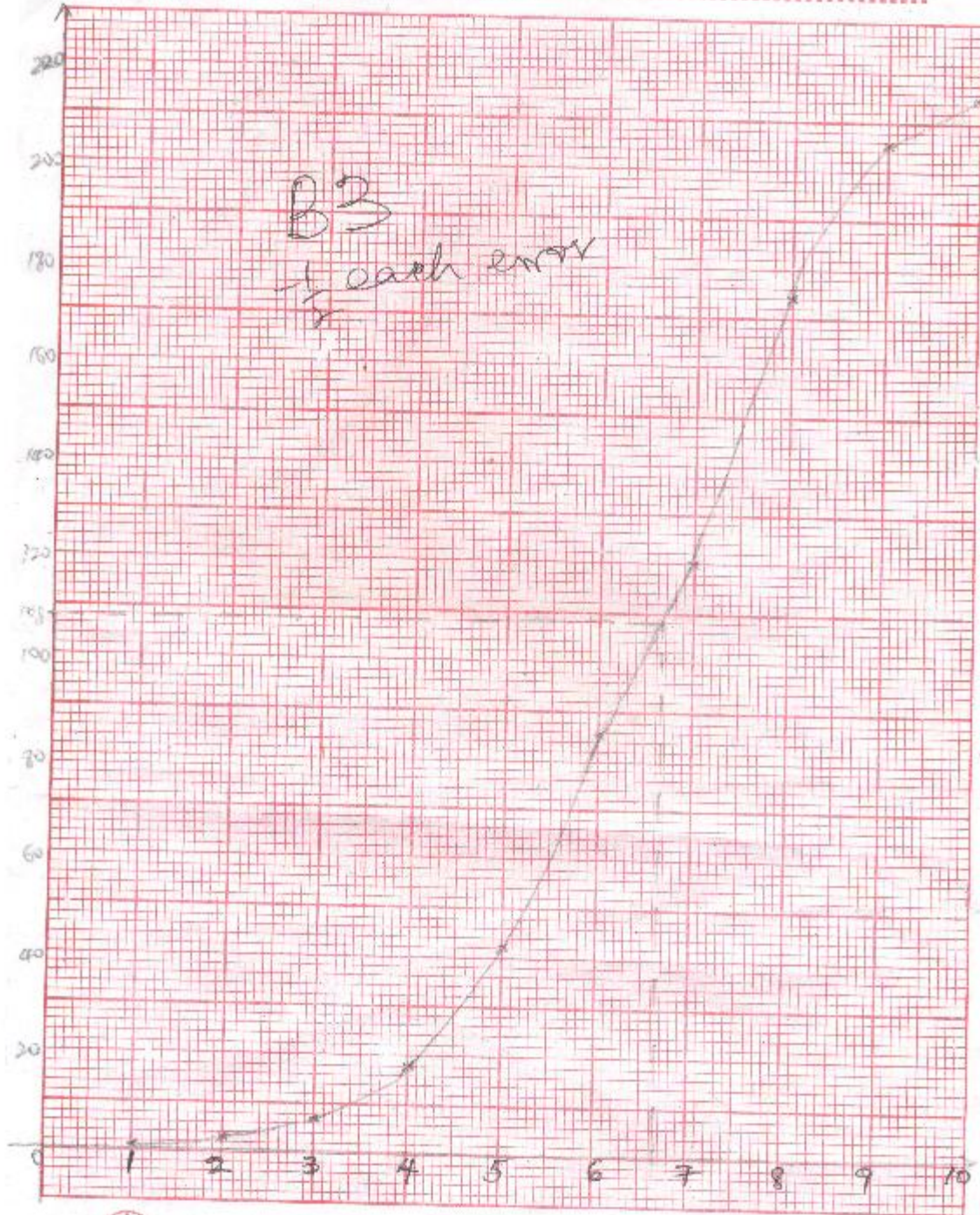


# INSIGHT



Page 4 sol 2  
CUMULATIVE FREQUENCY CURVE

REMARKS.....



Blessed **WISDOM** waec Standard Graph

**EXAMINER'S COMMENT**

Plotting of Histogram, frequency polygon and ogive is tested in this question. Candidates are expected to know how to (i) determine the mid-point values and (ii) compute the cumulative frequencies.

About 50% of the candidates attempted the question with an average score of 8 out of 15 marks allocated to it. Majority of those who attempted the question had problem with the nature of the data given. Generally, the performance was fair.

**SOLUTION 3**

X(kg)	Y(kg)	X <sup>2</sup>	XY
10	25	100	250
20	20	400	400
30	40	900	1200
40	30	1600	1200
50	50	2500	2500
60	35	3600	2100

(a)  $n = 6$ ;  $\sum X = 210$ ,  $\sum Y = 200$   
 $\sum X^2 = 9100$   
 $\sum XY = 7650$

Régression coefficient:

$$b = \frac{(n\sum xy - \sum x \sum y)}{[n\sum x^2 - (\sum x)^2]}$$
$$= \frac{(6 \times 7650 - 210 \times 200)}{(6 \times 9100 - 210^2)}$$
$$= 0.3714$$

Regression Constant:

$$a = \frac{\sum y}{n} - b \frac{\sum x}{n} = \frac{200}{6} - 0.3714 \times \frac{210}{6}$$
$$= 20.3343$$

$$Y = 20.3343 + 0.3714$$

$$Y = 20.3343 + 0.3714 \times 70$$

$$= 46.3323\text{kg}$$

# INSIGHT

## ALITER TO Q3

(a)

FAT (X)	CHOLESTROL (Y)	(X - $\bar{X}$ )	Y - $\bar{Y}$	(X - $\bar{X}$ ) <sup>2</sup>	(X - $\bar{X}$ )(Y - $\bar{Y}$ )
10	25	-25	-8.3	625	207.5
20	20	-15	-13.3	225	199.5
30	40	-5	6.7	25	-33.5
40	30	5	-3.3	25	-16.5
50	50	15	16.7	225	250.5
<u>60</u>	<u>35</u>	25	1.7	<u>625</u>	<u>42.5</u>
<u>210</u>	<u>200</u>			<u>1750</u>	<u>650</u>

$$\bar{X} = \frac{210}{6} = 35, \bar{Y} = \frac{200}{6} = 33.3$$

Let the regression line be  $Y = a + bx$

where  $a = \bar{Y} - b\bar{X}$

$$b = \frac{\sum(X - \bar{X})(Y - \bar{Y})}{\sum(X - \bar{X})^2}$$

$$= \frac{650}{1750} = 0.371$$

$$\therefore a = 33.3 - 35(0.371) = 20.315$$

$$\therefore Y = 20.315 + 0.371X$$

$$\begin{aligned} \text{(b) When } X = 70, Y &= 20.315 + (0.371)(70) \\ &= 46.285\text{kg} \end{aligned}$$

### EXAMINER'S COMMENT

Candidates' knowledge of regression coefficient is tested by the question. About 70% of the candidates attempted the question with an average score of 8 out of 15 marks allocated to it. Generally, the candidates that attempted the question performed fairly well.

**SOLUTION 4**

(a)  $MR = 20 - 4q$   
 $R = \int MR dq$   
 $= \int (20 - 4q) dq = 20q - 2q^2 + c$

For  $R = 300$ ;  $q = 2$

Substituting,

$$300 = 20(2) - 2(2)^2 + c$$

$$= 40 - 8 + c$$

$$\Rightarrow C = 300 - 40 + 8 = 268$$

$$\therefore R = 20q - 2q^2 + 268$$

$$= -2q^2 + 20q + 268$$

(b)  $MC = 3 + 5x + 3x^2$   
 Total cost function =  $TC = \int MC dx$   
 $= \int (3 + 5x + 3x^2) dx$   
 $= 3x + \frac{5}{2}x^2 + x^3 + c$

If cost of producing 1 unit is ₦10

$$\therefore 10 = 3(1) + \frac{5}{2}(1)^2 + (1)^3 + c$$

$$\Rightarrow 10 = 3 + 2\frac{1}{2} + 1 + c$$

$$\Rightarrow C = 10 - 6\frac{1}{2} = 3\frac{1}{2}$$

$$\therefore c = 3x + \frac{5x^2}{2} + x^3 + \frac{7}{2}$$

**EXAMINER'S COMMENT**

Candidates' knowledge of simple integration is tested here. Given the marginal revenue and cost, candidates are expected to use integration to obtain revenue and cost respectively. Almost 80% of the candidates attempted the question with about 30% of them passing. Majority of those who attempted the question had difficulty in deriving the total revenue and total cost from their respective marginals. To carry out simple integration was a problem to this group of candidates.

**SOLUTION 5**

(i) Since  $x$  is in thousands of naira

$$\Rightarrow x = \frac{30,000}{1,000}$$

$$x = 30$$

$$\therefore R(x) = 350,000 (0.4)^{0.1x}$$

At  $x = 30$

$$R = 350,000 (0.4)^{0.1(30)}$$

$$= 350,000(0.4)^3$$

$$= 350,000 (0.064)$$

$$= \text{₦}22,400$$

## INSIGHT

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(ii) Maximum revenue is attained when no amount is spent on overheads i.e.  $x = 0$

$$\begin{aligned}\therefore R &= 350,000 (0.4)^{0.1(0)} \\ &= 350,000 (0.4)^0 \\ &= 350,000\end{aligned}$$

b. Let  $x$  be the quantity of set of furnitures demanded and  $y$  be the price of a unit, then the demand equation is given as  $y = a + bx$

When  $x = 150$ ,  $y = 32,000$

$$\Rightarrow a + 150b = 32,000 \quad \dots\dots\dots (i)$$

When  $x = 430$ ,  $y = 28,500$

$$\Rightarrow a + 43b = 28,500 \quad \dots\dots\dots (ii)$$

Solving (i) & (ii) simultaneously by subtracting (ii) from (i), we have

$$- 280b = 3500$$

$$b = \frac{-3500}{280}$$

$$b = -12.5$$

Solve for  $a$  in (i) gives

$$a + 150(-12.5) = 32,000$$

$$a - 1875 = 32000$$

$$a = 32000 + 1875$$

$$a = 33,875$$

Hence, the demand equation is given as

$$y = 33875 - 12.5x$$

ii. If  $y = 29,000$ , then

$$29,000 = 33875 - 12.5x$$

$$12.5x = 33875 - 29000$$

$$12.5x = 4875$$

$$x = \frac{4875}{12.5}$$

$$x = 390$$

iii. The maximum price that could be paid for a set of furniture is attained when demand is zero i.e.  $x = 0$

i.e.  $y = 33,875 - 12.5(0)$

$$y = \text{R}33,875$$

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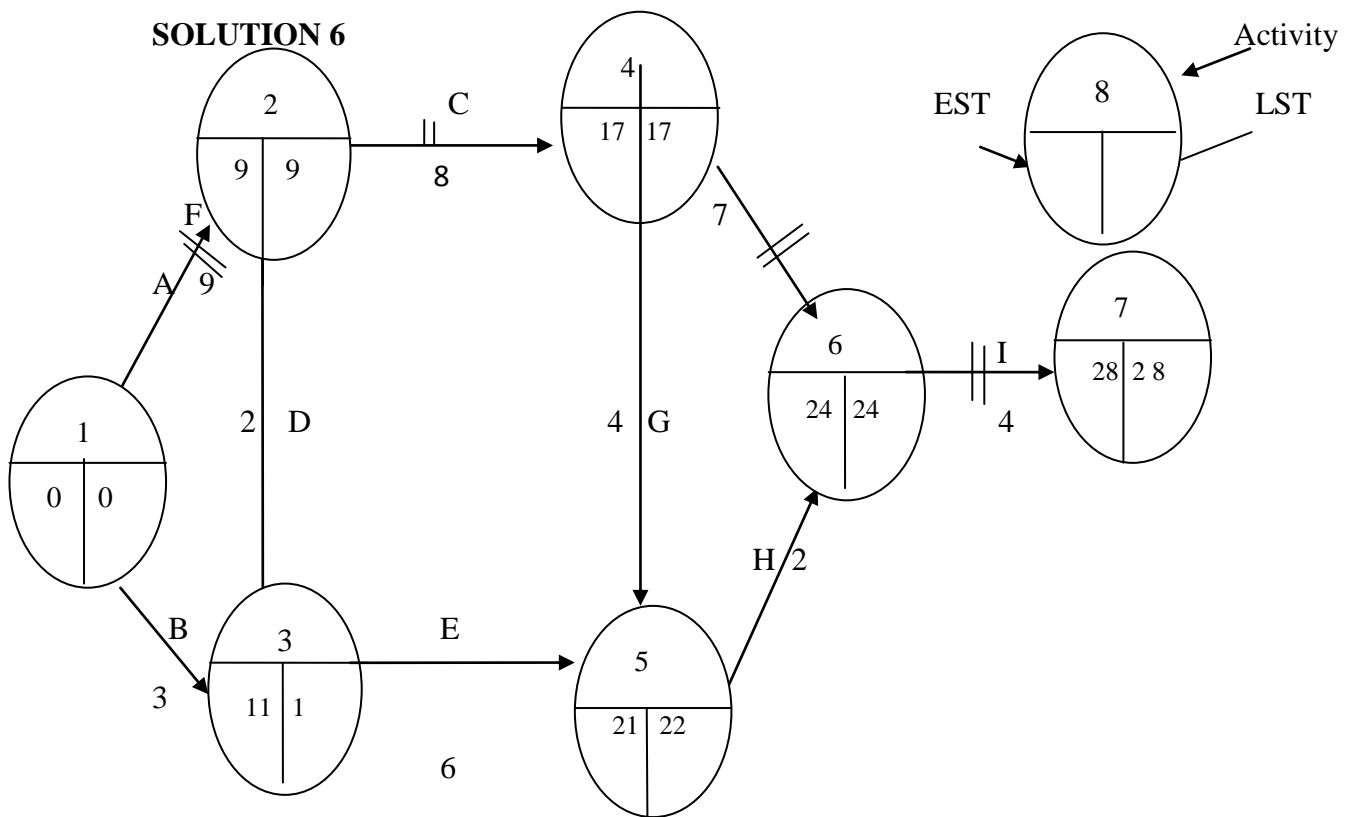
## EXAMINER'S COMMENT

This is mathematics in which the concept of maximum value is tested. In part (a), candidates are expected to know that when there is no expenditure on overheads, the revenue will be maximized.

Part (b) tests candidates' ability in forming simultaneous equations and solving such equations in two unknowns: This is the least attempted question with less than 15% of the candidates attempting it. The performance was poor with an average score of 5 out of 15 marks allocated to it.

The major pitfall of the candidates that attempted the question was their inability in correctly interpreting the unit of the independent variable  $x$  in the function and their inability to form the demand equations correctly.

## SOLUTION 6



- (b)(i) The critical path is identified by crossed arrows as A - C - F - I and its duration is 28 weeks. Listing all possible paths as:
- B - E - H - I, duration is 15 weeks
  - A - D - E - H - I, duration is 23 weeks
  - A - C - G - H - I, duration is 27 weeks
  - A - C - F - I, duration is 28 weeks \*

Since 28 is the longest period, then critical path is A - C - F - I with 28 weeks duration.

**OR**

Issue at events 1, 2, 4, 6 and 7, both the EST and LFT are equal, the critical path is so deduced.

**OR**

Activities with zero float constitute the critical path.

(ii) It will take 28 weeks to complete the project.

(c) Total float = LFT – (EST + Activity Duration)

$$C = 17 - (9 + 8) = 0 \text{ week}^*$$

$$D = 16 - (9 + 2) = 5 \text{ week}$$

$$E = 22 - (11 + 6) = 5 \text{ weeks}$$

$$F = 24 - (17 + 7) = 0 \text{ week}^*$$

$$G = 22 - (17 + 4) = 1 \text{ week}$$

$$H = 24 - (21 + 2) = 1 \text{ week}$$

- Note also that  $I = 28 - (24 + 4) = 0 \text{ week}^*$

$$A = 9 - (9 + 0) = 0 \text{ week}^*$$

\*Indicates critical activity path

### HOW THE EST & LFT ARE ARRIVED AT

Evaluate start time

Event 2	$0 + 9 = 9$	
3	$2 + 9 = 11$	} max = 11
	$0 + 3 = 3$	
4	$8 + 9 = 17$	
5	$17 + 4 = 21$	} max = 21
	$11 + 6 = 17$	
6	$17 + 7 = 24$	} max = 24
	$21 + 2 = 23$	
7	$24 + 4 = 28$	

Latest finish time

7	28	
6	$28 - 4 = 24$	
5	$24 - 2 = 22$	
4	$24 - 7 = 17$	
3	$22 - 6 = 16$	
2	$17 - 8 = 9$	} min = 9
	$16 - 2 = 14$	
1	$16 - 3 = 13$	} min = 0
	$9 - 9 = 0$	

### EXAMINER'S COMMENT

This is a Network Analysis problem. Calculation of Earliest Start Times, Latest Finish Times, and total floats for activities is demanded in the question. The inability of candidates to identify the critical path and its duration is also tested in the question. Candidates should be familiar with the three methods of determining the critical path: (1) listing all possible paths,

## INSIGHT

the critical path will be the path with the longest period (2) the path passing through the events where EST and LFT are equal is the critical path and (3) all the activities with zero total floats constitute the critical path. Note that the total float = LFT – (EST + activity duration). Less than 40% of the candidates attempted the question while over 60% of the candidates that attempted the question performed very well with an average score of 10 marks out of 15 marks allocated to it.

### SOLUTION 7

- a. **Transportation Table for Exam Body**  
**Geographical Regions**

Regional Offices	North-East	South-West	South East	North-West	Availabilities
R <sub>1</sub>	60	320	180	40	2,000
R <sub>2</sub>	20	180	60	160	1,000
R <sub>3</sub>	80	100	40	100	2,500
Requirements	1250	1250	2100	400	5000 / 5500

- b. The transportation table in (a) above is not balanced.  
 c. Balanced Transportation table is obtained with  
 $(5500 - 5000) = 500$

Regional Offices	North-East	South-West	South East	North-West	Dummy	Availabilities
R <sub>1</sub>	60	320	180	40	0	2,000
R <sub>2</sub>	20	180	60	160	0	1,000
R <sub>3</sub>	80	100	40	100	0	2,500
Requirement	1,250	1,250	2,100	400	500	5500 / 5500

### Geographical Regions

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(d) .

### Solution by the Least Cost Method

#### Geographical Regions

Regional Offices	North-East	South-West	South East	North-West	Dummy	Availabilities
R <sub>1</sub>	250 <span style="border: 1px solid black; padding: 0 2px;">60</span>	850 <span style="border: 1px solid black; padding: 0 2px;">32</span>	<span style="border: 1px solid black; padding: 0 2px;">180</span>	400 <span style="border: 1px solid black; padding: 0 2px;">40</span>	500 <span style="border: 1px solid black; padding: 0 2px;">0</span>	2,000
R <sub>2</sub>	1,000 <span style="border: 1px solid black; padding: 0 2px;">20</span>	<span style="border: 1px solid black; padding: 0 2px;">180</span>	<span style="border: 1px solid black; padding: 0 2px;">60</span>	<span style="border: 1px solid black; padding: 0 2px;">160</span>	<span style="border: 1px solid black; padding: 0 2px;">0</span>	1,000
R <sub>3</sub>	<span style="border: 1px solid black; padding: 0 2px;">80</span>	<span style="border: 1px solid black; padding: 0 2px;">100</span>	<span style="border: 1px solid black; padding: 0 2px;">40</span>	<span style="border: 1px solid black; padding: 0 2px;">100</span>	<span style="border: 1px solid black; padding: 0 2px;">0</span>	2,500
Requirement	1,250	1,250	2,100	400	500	5,500

#### EXAMINER'S COMMENT

Candidates' knowledge of balancing an unbalanced transportation table is tested. Candidates are expected to use the Least Cost Method to determine the initial basic allocation for the examination body. Over 95% of the candidates attempted the question with more than 70% of them scoring 9 marks out of the 15 marks allocated to it. Generally, candidates' performance was good.

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AT/211/PIL.8

EXAMINATION NO.....

**ASSOCIATION OF ACCOUNTANCY BODIES IN WEST AFRICA  
ACCOUNTING TECHNICIANS SCHEME  
PART II EXAMINATION – SEPTEMBER 2011  
INFORMATION TECHNOLOGY**

Time allowed: 3 hours

**Insert your examination number in the space provided above**

**SECTION A - Attempt All Questions**

**PART I MULTIPLE-CHOICE QUESTIONS (10 Marks)**

1. The establishment and application of safeguards to protect data, software and computer hardware from accidental or malicious modifications, destruction or disclosure describes
  - F. Computer virus
  - G. Computer security
  - H. Hacking
  - I. Computer copyright
  - J. Copyright piracy
  
2. The following are Security measures needed in an IT environment **EXCEPT**
  - F. Provision of fire fighting equipments
  - G. Use of passwords
  - H. Use of data encryption
  - I. Use of parity checks
  - J. Use of copyright laws
  
3. Information can be simply defined as
  - A. The raw facts collected
  - B. The processed data
  - C. The device used to process data
  - D. The approach used to collect the data
  - E. The database collection
  
4. **ONE** of the following is **NOT** a quality of good information
  - A. Reliability
  - B. Accuracy
  - C. Distortion
  - D. Precision
  - E. Up-to-date

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5. Which of the following is **NOT** a Computer Network Medium?
- A. Twisted –pair wire
  - B. Fiber optics
  - C. Router
  - D. Coaxical cable
  - E. Microwave radio
6. Which of these is **NOT** a criteria for design?
- A. Existing system
  - B. Continuous control
  - C. Flexibility
  - D. Volume
  - E. Workflow
7. Description is a process of .....text
- A. Converting plain text to cypher
  - B. Converting Cypher text to plain
  - C. Encoding cypher
  - D. Decoding plain
  - E. Coding cypher
8. Which of the following is **NOT TRUE** of teleconferencing?
- F. Sessions are held in real time with major participants being televised while other participants at remote sites may only take part in voice input of question and responses
  - G. Consist of the use of closed-circuit televisions to reach multiple groups
  - H. Internet relay chatting
  - I. Live discussion session among virtual communities
  - J. Video conferencing
9. Systems software include the following **EXCEPT**
- F. Operating systems
  - G. Loaders
  - H. Inventory control
  - I. Language translators
  - J. Text editors
10. Application software packages include programs for the following **EXCEPT**
- F. Payroll
  - G. Text editors
  - H. Billing
  - I. Order entry
  - J. Accounts receivable

## PART II SHORT-ANSWER QUESTIONS (30 Marks)

1. A protocol which enables web servers to communicate with each other over a network is called.....
2. A language used to format documents on the world wide web is called.....
3. A protocol that allows the use of mobile phones for a wide range of interactions with the web is called.....
4. Internet addresses are numerical and called.....
5. The addressing system for the internet uses a process called the .....
6. The number of bits used to store an item of data is known as.....
7. A complete hardware stating specification of the input devices, output devices, the secondary storage devices, the CPU and communication support system is known as.....
8. The act or process of accessing information after it has been stored is.....
9. The way a computer obtains its data for processing is.....
10. The processing in which a workload that might conceivably be done on a single computer system is divided among two or more computers is known as.....
11. A network in which all communication devices are connected to a central server is called a.....
12. A Communication .....is used in a communication network to govern the exchange of data between hardware or software.
13. Technology that manages computing with high-speed communication links carrying data, sound and video is called.....
14. The protocol that allows different computers on different networks to communicate is known as .....
15. Interconnection of computer systems and other information technology devices within an office environment is called.....
16. Java is a computer language for sending small applications called .....over the web so that computer systems can execute them.
17. The best way to put up a virus defence is to use .....in an information system.
18. A separate and fully equipped facility to which an organization can move in immediately after disaster and resume business is called.....
19. A company that provides individuals, organisations and businesses access to the internet is called .....

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20. Information and services are normally provided to web surfers by web.....
21. The most important system software is the .....
22. The system software is produced by the computer.....
23. Written and developed software to perform a specific task for a user is called .....
24. A computer application package used for typing texts, documents and letters is referred to as a.....
25. An intersection of column and row in a spreadsheet is called a.....
26. The management and operation of a part or all of an organisation's information system services by an external source at an agreed service level and time period is known as .....
27. The type of computer bureau service where communication links are provided for a number of clients using specific time slices to share the resources of the bureau's computer system as if they were using their own in-house computer is.....
28. The development method that describes the partnership between users and systems developers during the process of developing a system is known as.....
29. The arrangement of procedures and systems and the allocation of duties so that there is an automatic check on what is being done is called.....
30. A change over method which involves running both the old and the new system concurrently is called.....

## SECTION B - Attempt any FOUR questions (60 Marks)

### QUESTION 1

- (a) State **FIVE** physical and **FIVE** logical security measures needed in an IT environment. (10 Marks)
  - (b) What is a computer virus? Give **THREE** common examples. (5 Marks)
- (Total 15 Marks)**

### QUESTION 2

Distinguish between the following pairs:

- (a) Data and Information. (3 Marks)
- (b) Byte and field. (3 Marks)
- (c) Character data and number data. (3 Marks)

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- (d) General-purpose digital computers and special-purpose digital computers. (3 Marks)
- (e) Operational efficiency and functional effectiveness (in information systems). (3Marks)
- (Total 15 Marks)**

## QUESTION 3

- (a) List the **SEVEN** open system interconnection (OSI) layers, and give the function of any **FOUR** of the layers. (11Marks)
- (b) What is a protocol? (2 Marks)
- (c) Give the meaning of the acronym TCP/IP. (2 Marks)
- (Total 15 Marks)**

## QUESTION 4

- (a) Explain clearly what is meant by internet. (3 Marks)
- (b) List **TEN** services being offered by the internet. (5 Marks)
- (c) List **FOUR** necessary items a user would need in order to have access to internet facilities. (2 Marks)
- (d) State any **FIVE** anti-social uses of the internet. (5 Marks)
- (Total 15 Marks)**

## QUESTION 5

- (a) Explain what is meant by an application software and give **THREE** different examples. (5 Marks)
- (b) List **THREE** advantages and **TWO** disadvantages of application packages over User's software (5 Marks)
- (c) Give **FIVE** factors to be considered when acquiring an application package. (5 Marks)
- (Total 15 Marks)**

## QUESTION 6

- (a) List and explain briefly **SIX** of the items to be found in a typical systems specification. (12Marks)
- (b) Implementation procedures mainly concentrate on **FOUR** different areas, list any **THREE** of the areas. (3 Marks)
- (Total 15 Marks)**

## SOLUTION TO SECTION A

### PART I MULTIPLE CHOICE SOLUTIONS

1. B
2. E
3. B
4. C
5. C
6. D
7. B
8. C
9. C
10. B

### EXAMINER'S COMMENT

Over 90% of the candidates scored above 60% in the MCQ. The standard was marred by two incorrect questions, i.e. question Nos. 5 and 7. The two questions were given out as bonus to the students.

### PART II SHORT-ANSWER SOLUTIONS

1. Hyper Text Transfer Protocol (HTTP)
2. Hyper Text Mark-up language (HTML)
3. Wireless Application Protocol (WAP)
4. IP Addresses
5. Domain Name System (DNS)
6. Data bit Length/Byte
7. Computer Configuration
8. Information retrieval
9. Data Capture
10. Distributed processing
11. Star
12. Protocol
13. Information Technology/3G technology
14. Transmission Control Protocol/Internet Protocol
15. Local Area Network/Intranet
16. Applets
17. Antivirus
18. Hot site
19. Internet Service Provider (ISP)
20. Web browser
21. Operating System
22. Manufacture/Software Houses/Developer
23. Bespoke Software
24. Word Processing Package/Word processor
25. Cell

26. Facility management Outsourcing
27. Time sharing
28. Joint Application Development (JAD)
29. Internal Check/Internal control
30. Parallel

## **EXAMINER'S COMMENT**

The performance in the SAQ is below expectation as over 70% of the candidates scored below 40%. Most of the candidates could not supply the key technical terms expected by the examiners.

## **SECTION B SOLUTION 1**

### **(A) Physical Security Measures:**

- (i) Solid construction of the Computer centre with secured windows
- (ii) Provision of secured guards to control access to the centre windows
- (iii) Provision of registers to monitor staff movement
- (iv) Provision of alternative power supplies: UPS and generator to prevent accidental loss of data
- (v) Provision of efficient data recovery mechanism (back-ups) in case of fire, theft or vandalism.
- (vi) Ensuring that equipments are switched off when not in use.
- (vii) Surveillance systems e.g. CCTV

### **Logical Security Measures:**

- (i) Provision of passwords for authorised users
- (ii) Provision of security software to restrict the permission of the user to read only, no modify, no copy, no delete operations.
- (iii) Provision of data encryption method
- (iv) Provision of regular audits of all the incoming resources
- (v) Provision of a system to monitor the activities of all login users e.g. firewalls
- (vi) Provision of directory or program protection software to limit the user's activity to a specified directory or program.
- (vii) The use of alarm to ensure that correct type of data is entered in the appropriate field.
- (viii) Authentication
- (ix) Biometrics
- (x) Non-repudiation
- (xi) User ID

- (B) A Computer Virus is a Computer Program segment that propagates itself by attaching codes to other programs or data files.

Common examples includes

- Window NT Virus
- World cup '98 Virus
- I love you virus
- Die Hard Virus
- Mellisa Virus
- Stone Virus
- Jerusalem Virus
- Bootstrip Virus
- February Virus
- Trojan Horse Virus
- Chernobyl Virus

### EXAMINER'S COMMENT

This tests the candidates' ability to give the security measures needed in an I.T. environment. Over 50% of the candidates attempted this question and the performance is encouraging as over 70% scored over 60%. The major pitfall is that some could not distinguish between logical and physical measures.

### SOLUTION 2

- (a) **Data and Information:-**

**Data** can be defined as any raw facts or observations that describe a particular phenomenon. While **information** is processed data that has a particular meaning within a specific context.

The major difference is that data is raw and has no meaning while information is data which is processed in order to have meaning.

- (b) **Byte and Field:-**

Byte is a sequence of eight bits used to represent a character. In general, byte is the smallest unit that can be accessed in the main memory of a computer. While field is a logical grouping of characters which can be seen as an item of data within a record.

The difference is that a byte is a collection of bits which can be used to form a field.

- (c) **Character data and Number Data:-**

A Character is an alphabet, any special symbol (such as punctuation) or digits. The character set includes: All alphabets both upper and lower cases (A, B, C, .....Z, a, b, c.....z), the punctuation marks ( , ; , :), the special symbols such as !, \*, +, -, ^, and the numbers which are composed of digits and there are 10 of such digits, namely 0, 1, 2, -----8, 9 in the decimal number system.

The difference is that the number data is part of the character data.

(d) **General Purpose Digital Computers and Special Purpose Digital Computers:-**

General Purpose Digital Computers are those computers which are completely programmable and can be used to perform a variety of numerical calculations and business problems. While Special – Purpose Digital Computers are designed for special type of application and has its programs pre-written.

The difference is that General Purpose has wider scope of coverage while Special Purpose has a specific purpose.

- (e) Operational efficiency refers to a situation where the information system is providing the necessary value from the available resources, whereas functional effectiveness refers to whether the resources being used for the information system are performing effectively as expected.

### EXAMINER'S COMMENT

This question tests candidates' knowledge of the distribution between five closely related pairs of terms. The performance is very encouraging as over 80% of the candidates that attempted the question scored over 70%. The major pitfall is the inability of many candidates to distinguish between operational efficiency and functional effectiveness.

### SOLUTION 3

- (a) The seven pen System Interconnection layers are:

- (i) Application
- (ii) Presentation
- (iii) Session
- (iv) Network
- (v) Data link
- (vi) Transport
- (vii) Physical

- (i) APPLICATION:- Provides communications services for end user applications

- (ii) PRESENTATION:- Provides appropriate data transmission formats and codes

- (iii) SESSION:- Supports the accomplishment of telecommunications sessions

- (iv) NETWORK:- Provides appropriate routing by establishing connections among network links.

- (v) DATA LINK:- Supports error-free organisation and telecommunication media in the network

- (vi) Transport:- Supports the Organisation and transfer of data between nodes in the network.

- (vii) Physical layer is responsible for sending and receiving bits.

- (b) A Protocol is a Standard set of rules and procedures for the control of communication in a network.

- (c) TCP/IP means transmission control Protocol/Internet protocol

## EXAMINER'S COMMENT

This tests the candidates' knowledge of a particular means of communication and the functions of the different segments. The means of communication was very popular but the functions were evasive to the candidates. The performance was just fair as over 80% of the candidates scored below 50%. The major pitfall was the inability to define protocol and give the meaning of TCP/IP.

## SOLUTION 4

- (a) Internet is a decentralized global network of several computers and computer networks. The networks are used to communicate messages or information to each other and they all follow a common set of protocols or rules known as TCP/IP. These protocols make the internet an efficient tool for communication between different people, organisations and computer systems.
- (b) The popular services being offered by the Internet includes:
- Marketing
  - Banking
  - Up-to-date News
  - Job searching
  - E-mail services
  - Educational services like providing information on Universities
  - Downloading of files
  - Games
  - Accessing Libraries
  - Entertainment
  - Friendship Hunting
  - Discussion platform eg teleconferencing
  - Religion activities
  - Chatting
  - Social networking
  - Commerce
  - Fund Transfer
  - Data Transfer
- (c) In order to have access to the Internet, the following items would be required
- i. A computer system
  - ii. A modem
  - iii. Internet Service Provider for a legal account
  - iv. Storage device
  - v. Telephone connection
- (d) Anti social uses of Internet are the computer crimes committed such as
- i. Spamming
  - ii. Intellectual property theft
  - iii. Pornography
  - iv. Denial of service
  - v. Identify theft
  - vi. Unauthorized access to or modification of programs and data
  - vii. Fraud
  - viii. Hacking/Cracking

### EXAMINER'S COMMENT

This tests the candidates' knowledge about the Internet. 95% of the candidates attempted the question and the performance was very good as over 90% of the candidates scored over 70%. The major pitfall was the inability to recognise the anti-social uses of the internet.

### SOLUTION 5

5 (a) Application software are software designed and developed for specific application, mostly they are ready-made packages designed in a standardized way for applications which are common to many users.

Its types include:

- Word Processing Packages
- Spreadsheet Packages
- Database Management Systems (DBMS) Packages
- Accounting Packages
- Antivirus Packages

(b) Some of the advantages that an application package has over the User's software include the following:

- i. Documentation is usually provided with the package
- ii. It can provide costly expertise at minimum cost.
- iii. There is a less chance of system errors, if the package has been provided for another system elsewhere
- iv. The user needs not provide development and maintenance staff.
- v. Usually provide standard approach to common applications
- vi. Changes are sometimes entered for by the supplier/manufacturer of the package.
- vii. There is little or no processing errors, since it has been exhaustively tested by experts.

The disadvantages of Application package include:

- i. It may not solve entire End-user problems.
- ii. The package's supplier/manufacturer may leave business thereby making a follow-up difficult.
- iii. It might lack private security since it is generally used everywhere.
- iv. Special training may be required prior to use
- v. The package may not be flexible to accommodate other needs.

(c) Factors to be examined when considering the use of a package include:

- Overall Cost
- Is the documentation clearly written and understood?
- Has it been used successfully elsewhere before?
- Will the supplier be available during installation?
- Will help be given with file set-up?
- Can the package and its data be transferred to other machines?
- Will the package cope with volume of data and deliver on time?
- Is it user friendly?

## EXAMINER'S COMMENT

This question tests the candidates' knowledge of Application Software. Over 90% of the candidates attempted the question and the performance was very good as over 89% of the candidates that attempted the question scored above 70%. Although the question did not state clearly that it was demanding for the advantages and disadvantages of application packages over users' software, the candidates still scored high marks for stating the functions of application packages

## SOLUTION 6

- (a) The items to be found in a typical systems specification include.
- i. Systems description (or systems definition). This is a narrative description in a non-technical language that may include use of system flowcharts etc.
  - ii. Input specification:- Summary of input documents description and layouts, input media description and layouts (e.g. screen layouts), input controls, data capture procedures etc.
  - iii. File Specification:- Summary of file description, record layouts, file processing procedure layout such is hierarchical input – output process (HIPO).
  - iv. Output Specification:- Summary of output description and layouts list of reports to be generated, procedure for reports handling and distribution, output controls.
  - v. Program description (program specification):- The main tasks to be performed by the programs, computational logic program flowcharts, special formula and test data.
  - vi. Implementation procedure:- Preparation of job procedure for computer and user requirements, file creation, changeover procedure, hardware and software acquisition and site preparation.
- (b) The four main areas of implementation procedures are:
- i. Detailed Timetable for commencement of operations.
  - ii. Hardware/software acquisition and training
  - iii. Systems testing with both previous and live data
  - iv. Changeover procedure.

## EXAMINER'S COMMENT

This tests the candidates' knowledge of system specification and implementation procedures. Only about 5% of the candidates attempted this question and the performance was extremely poor as over 70% of the candidates that attempted the question scored below 30%. The major pitfall was the inability of the candidates to recognise system specification. The students are advised to pay more attention to systems development.