THE INSTITUTE OF CHARTERED ACCOUNTANTS OF NIGERIA

PATHFINDER

NOVEMBER 2018 DIET

FOUNDATION LEVEL EXAMINATIONS

Question Papers

Suggested Solutions

Marking Guides

Plus

Examiner's Reports

FOREWARD

This issue of the **PATHFINDER** is published principally, in response to a growing demand for an aid to:

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

(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 herein; and

(iv) The professional; in improving pre-examinations and screening processes, and thus the professional performance of candidates.

The answers provided in this publication do not exhaust all possible alternative approaches to solving these questions. Efforts had been made to use the methods, which will save much of the scarce examination time. Also, in order to facilitate teaching, questions may be edited so that some principles or their application may be more clearly demonstrated.

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.

NOTES

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

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THE INSTITUTE OF CHARTERED ACCOUNTANTS OF NIGERIA

FOUNDATION LEVEL EXAMINATION - NOVEMBER 2018

FINANCIAL ACCOUNTING

Time Allowed: 3¼ hours (including 15 minutes reading time)

SECTION A: **MULTIPLE - CHOICE QUESTIONS**   **(20 MARKS)**

INSTRUCTION: YOU ARE REQUIRED TO ANSWER ALL QUESTIONS IN THIS SECTION

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

1.   The Conceptual Framework for Financial Reporting deals with the following **except**
    A.   The objective of general purpose financial reporting
    B.   The qualitative characteristics of useful financial information
    C.   The definition, recognition and measurement of the elements from which financial statements are constructed
    D.   Concepts of revenue and expenditure
    E.   Concepts of capital and capital maintenance

2.   A machine was bought on January 1, 2017 at a cost of ₦250,000. It has an expected useful life of 8 years with ₦10,000 scrap value at the end of its useful life. The annual depreciation charge using straight line method is
    A.   ₦75,000
    B.   ₦60,000
    C.   ₦45,000
    D.   ₦30,000
    E.   ₦15,000

3.   When the collectability of a receivable from a customer is believed to be difficult but possible, it is known as
    A.   Bad debt
    B.   Doubtful debt
    C.   Bankruptcy
    D.   Prudence
    E.   Recoverable

Use the following information to answer questions 4 - 6

4. X,Y and Z are partners with capital contributions: ₦2,000,000; ₦3,000,000 and ₦5,000,000 respectively. They share profits or losses in the ratio 1:2:3 after salaries and interest on capital have been paid. X is entitled to a salary of ₦1,000,000 per annum and partners are entitled to a 10% interest on capital. The profit for the year ended Dec 31, 2017 was ₦4,000,000.

   How much of the profit is partner X entitled to?
   A. ₦2,000,000
   B. ₦1,500,000
   C. ₦1,000,000
   D. ₦666,667
   E. ₦333,333

5. What is the current account balance of partner X?
   A. ₦2,000,000
   B. ₦1,666,667
   C. ₦1,553,333
   D. ₦1,111,110
   E. ₦1,000,000

6. How much is partner Y's share of profit?
   A. ₦2,000,000
   B. ₦1,000,000
   C. ₦666,667
   D. ₦550,000
   E. ₦333,333

7. A cash deposit made by a business appears on the bank statement as a ....entry

   A. Debit
   B. Single
   C. Double
   D. Contra
   E. Credit

8. Which of the following represents the nature of non-current asset?
   A. They are resources with monetary value
   B. They are resources which an entity consumes within its operating cycle
   C. They are resources owned by an entity for use in production of goods or services
   D. They are resources controlled by an entity for use in production of goods or services
   E. They are resources meant for resale in the ordinary course of the business

9. A business accounting equation is assets = equity + liabilities, where assets = ₦202,500; equity = ₦82,500 and liabilities = ₦120,000. Inventory worth ₦22,500 included in the assets is sold for ₦30,000 cash. What is the impact of this transaction on the accounting equation?

    A. Increase in assets by ₦7,500 and increase in equity by ₦7,500
    B. Decrease in assets by ₦7,500 and decrease in equity by ₦7,500
    C. Increase in assets by ₦22,500 and increase in equity by ₦22,500
    D. Decrease in assets by ₦22,500 and decrease in equity by ₦22,500
    E. Increase in assets by ₦30,000 and increase in equity by ₦30,000

10. If in a chart of accounts, current assets and non-current assets are assigned code range of 50 - 99 and 100 - 150 respectively, which of the following is **NOT** correct?
    A. Factory equipment code 102
    B. Inventory code 98
    C. Land code 99
    D. Prepayment code 97
    E. Warehouse building code 101

11. An entity spent the following amounts at different times in a period on an old vehicle: ₦25,420, ₦75,442 and ₦16,245. The second expenditure improved the capacity and life span of the vehicle on which it was spent. How much of these costs should be charged to the statement of profit or loss for the period?
    A. ₦41,665
    B. ₦59,197
    C. ₦91,684
    D. ₦100,862
    E. ₦117,107

12. A transaction on which an entity receives income in advance is classified as
    A. Accrual
    B. Accrued income
    C. Liability
    D. Prepayment
    E. Earned income

13. Which of the following may have been recorded in the cash book and **not** reflected in the bank statement?
    A. Bank charges and commission
    B. Cheques issued, presented and cashed
    C. Opening bank overdraft
    D. Payments by the bank on a standing order
    E. Bank lodgements

14. The necessary accounting entries to correct a sum of ₦56,000 paid for wages that was recorded in the cash book without the corresponding entry is
   A. Dr. Suspense account with ₦56,000 ; Cr. Profit or loss with ₦56,000
   B. Dr. Suspense account with ₦56,000 ; Cr. Wages account with ₦56,000
   C. Dr. Wages account with ₦56,000; Cr. Suspense account with ₦56,000
   D. Dr. Cash book with ₦56,000; Cr. Wages account with ₦56,000
   E. Dr. Wages account with ₦56,000 ; Cr. Cash book with ₦56,000

15. A sole-trader that uses the end-period inventory system takes some inventory for personal use. Which of the following accounting entries is appropriate to record the transaction in the main ledger?

   A. Dr. Drawings account ; Cr. Inventory account
   B. Dr. Drawings account ; Cr. Purchases account
   C. Dr. Purchases account ; Cr. Drawings account
   D. Dr. Inventory account ; Cr. Purchases account
   E. Dr. Capital account ; Cr. Inventory account

16. In 2017, a business had total receivables of ₦100,000 and wishes to have allowance for doubtful receivables of 4%. The allowance for doubtful receivables brought forward is ₦3,000. What figure would appear in the statement of profit or loss in respect of the doubtful receivables?
   A. ₦1,000 debit
   B. ₦1,000 credit
   C. ₦3,000 debit
   D. ₦4,000 debit
   E. ₦4,000 credit

17. The profit earned by a company for a period would increase
   A. Retained earnings
   B. Share capital
   C. Share premium
   D. Revaluation reserve
   E. Non-current assets

18. Which of the following is **not** a component of financial statements?
   A. Statement of profit or loss and other comprehensive income
   B. Statement of financial position
   C. Statement of changes in non-current assets
   D. Statement of cashflows
   E. Notes to the financial statements

Use the following information to answer questions 19 & 20

Chiller enterprises entered into a contract on January 22, 2017 with Presser Ventures to supply Presser a machine for an agreed price of ₦400,000. On February 18, 2017, Chiller purchased the machine from a wholesaler, for ₦320,000 on credit. Chiller delivered the machine to Presser on March 16, 2017 and payment to Chiller to be made on account. Presser pays Chiller ₦400,000 on April 17, 2017. Chiller pays the wholesaler ₦320,000 on May 12, 2017.

19. Using cash basis of accounting, Chiller enterprises expenses and income will be recognised in
    A. April and May
    B. March and April
    C. February and April
    D. January and March
    E. March and May

20. Using accrual basis of accounting, Chiller Enterprises expenses and income will be recognised in
    A. January and February
    B. February and May
    C. February and March
    D. March and April
    E. March and May

SECTION B: **OPEN - ENDED QUESTIONS**   **(80 MARKS)**

INSTRUCTION: YOU ARE REQUIRED TO ANSWER FOUR OUT OF SIX QUESTIONS IN THIS SECTION

QUESTION 1

Dawodu is the imprest holder of Royal Palms Limited with an imprest float of ₦20,000 weekly. She receives her reimbursement from Ajagbe, the main cashier. The petty cash book has columns for postage and telephone, travelling expenses, office expenses and electricity.

Date: Description of transaction

Feb. 2017

1	Received petty cash float from the main cashier. Bought postage stamps for office use ₦450, paid for carriage of palm kernels to the warehouse ₦575.
2	Paid three petty cash vouchers for staff on official travels to Port Harcourt amounting to ₦9,090.
4	Bought petty cash register - ₦1,200, office stationery ₦3,685, and tea cups for office use ₦750. Paid office electricity bill ₦2,250.
6	Paid telephone bills, ₦1,750 and courier ₦120.
7	Bought brooms for cleaners' use in the office ₦90.
10	Paid for the repair of office machines ₦3,750.
11	Bought postage stamps ₦600. Paid telephone bills ₦1,200 and travelling expenses ₦300.
12	Bought duplicating paper for office use ₦4,500. She was instructed to make payment in respect of three ceiling fans bought for ₦9,600.

Required:

a. Prepare the petty cash book of Royal Palms Limited on a weekly basis using the columns provided.   (16 Marks)

b. State how the balances on each of the expense columns would be treated in the ledger accounts on February 14, 2017.   (4 Marks)

(Total 20 Marks)

QUESTION 2

After extraction of the trial balance of Naja Limited, it was discovered that the total of the credit balances was greater than the total of the debit balances by ₦1,030,000. Investigation revealed the following errors:

(i)   Bank charges of ₦1,000,000 have been completely omitted from the books. The bank account balance has not been reconciled.

(ii)   Non-current asset costing ₦11,879,000 with accumulated depreciation of ₦10,943,000, has been sold for ₦2,000,000. This amount is shown as a separate item in the trial balance and no entries have been made in the nominal ledger accounts.

(iii) In addition to allowing discount of ₦240,000, and receiving discount of ₦260,000, various receivables and payables amounting to ₦10,000,000 were set off by contra. No entries have been made in respect of these items.

(iv)   Receivables amounting to ₦2,000,000 are irrecoverable and are to be written off.

(v)   Goods returned by a customer valued at ₦630,000 have been correctly entered in the receivables account, but by mistake entered in the returns outward book.

(vi)   A payment for stationery of ₦234,000 was correctly entered in the cash book but debited in the ledger as ₦243,000.

(vii) A payment of ₦76,000 for packing materials has been correctly entered in the cash book but no other entry has been made.

(viii) A payment of ₦26,000 for insurance has been recorded in relevant accounts as ₦62,000.

(ix) A page in the purchases day book correctly totalled at ₦125,124,000, was carried forward to the top of the next page as ₦125,421,000, resulting in purchases being overstated.

Required:

a. Prepare the journal entries to correct the errors.   (15 Marks)

b. Prepare the suspense account.   (5 Marks)

(Total 20 Marks)

QUESTION 3

a. Richard Jones keeps incomplete records of his entity's transactions. The entity's books revealed a net worth of ₦75,000 on January 1, 2017 and ₦3,250,000 on December 31, 2017. During the year, Richard Jones sold his shares in some bluechip companies for ₦2,000,000 and also obtained a loan of ₦150,000 from his bank. The proceeds from both the sale of shares and the loan were invested in the business entity. He took ₦150,000 cash for private use from the business, during the year ended December 31, 2017.

Required:
Determine the profit made by the business for the year ended December 31, 2017.
          (6 Marks)

b. Jago enterprises, a distribution company, keeps incomplete books of account and the following balances were extracted from its books.

	April 1, 2018 ₦	March 31, 2017 ₦
Prepayments	-	1,114,400
Cash balance	23,000	8,368
Bank balance	41,800	(50,900)
Furniture and fittings	80,000	80,000
Inventory	2,348,000	3,190,000
Trade receivables	2,378,000	2,164,200
Trade payables	1,810,400	2,200,600
Motor van	600,000	600,000

Notes:

During the year ended February 28, 2018, the proprietor withdrew ₦350,000 cash from the business for personal use. Dividend of ₦5,600 from the proprietor's private investment was lodged into the business bank account as additional capital. Furniture and fittings to be written down to ₦68,000 and motor van was valued at ₦500,000 as at March 31, 2018.

You are required to prepare:

A statement showing the profit or loss made by the business for the year ended March 31, 2018.   (14 Marks)

(Total 20 Marks)

QUESTION 4

The following balances were extracted from the books of Alabamusa Company as at December 31, 2017:

	₦'000
Cash	284,600
Prepaid insurance	16,000
Inventory of spare parts	108,000
Heavy duty machine	1,049,600
Accumulated depreciation	90,000
Loan notes	120,000
Share capital	750,000
Retained earnings	56,000
Salaries and wages	250,000
Maintenance expenses	84,000
Fuel and lubrication expenses	63,000
Water, gas and electricity	56,400
Rental expenses	24,000
Sales income	967,600
Advertising expenses	48,000
	3,967,200

The following additional information was later discovered from the records of the company:

(i)   On January 2, 2017, Alabamusa paid 4 years' insurance premium to his insurance company amounting to ₦16,000,000.

(ii)   The heavy duty machine was purchased in February 2017, at a cost of ₦1,049,600,000. Estimated life is ten years, with an estimated residual value of ₦49,600,000. Full depreciation is charged in the year of purchase.

(iii) On March 1, 2017 the company borrowed ₦120,000,000 from Paramount Bank Plc, on a 5-year 8% loan. Interest is payable annually.

(iv) Alabamusa collected ₦7,500,000 from a customer for a special sealing valve which was recorded as sales income.

(v) ₦24,000,000 rent was paid during the year, though ₦4,000,000 is for January and February 2018 and the total amount was recorded as rental expenses in 2017.

(vi) Inventory of maintenance parts was determined to be ₦65,000,000 on December 31, 2017. All purchases are debited to inventory of spare parts.

Required:
Prepare the extended trial balance showing the adjustments as at December 31, 2017.

(Total 20 Marks)

QUESTION 5

a. On January 1, 2013, Daraju Enterprises acquired a machine with the following information:

Initial cost	₦200,000
Installation cost	₦50,000
Estimated useful life	5 years

Estimated production capacity in units

2013	- 15,000
2014	- 17,000
2015	- 21,000
2016	- 23,000
2017	- 24,000

Calculate the annual depreciation charge for Daraju enterprises for 2013, 2014 and 2015, using:

i. Units of production method (4 Marks)

ii. Sum-of-the-years-digit method (4 Marks)

iii. Prepare a statement showing the carrying amount of the assets for each of the three years: 2013, 2014 and 2015 using units of production method (4 Marks)

b. The statement of cash flows is one of the components of financial statements. The format and contents of the statement are set out in IAS 7, Statement of Cash Flows.

Required:

i.   Explain the purpose of the statement of cash flows.   (3 Marks)
ii. Define 'cash and cash equivalents'.   (2 Marks)
iii. Identify the three standard headings under which the statements of cash
     flows is analysed.   (3 Marks)
                                                                   (Total 20 Marks)

QUESTION 6

a.   Akinola, a trader in Kano passes all his transactions through the Journal before
     posting to the ledger. Akinola's balances as at January 1, 2017 are as follows:

		₦'000
Jan. 1.	Cash in hand	50
Jan 1.	Cash at bank	150
	Receivables	300
	Inventory	100

The transactions for the month

Jan 2.	Purchased goods for cash	70
Jan 5.	Bought goods from Falaye	500
Jan 9.	Bought shop fittings and paid by cheque	27
Jan 15.	Sold goods to Dele	100
Jan 16.	Paid Falaye by cheque on account	400
Jan 20.	Bought goods from Bunmi B.	140
Jan 25.	Sold goods to J. Sola	150
Jan 28.	Bought old accounting machine by cheque	70

Required:

Open Akinola's books by means of a journal and pass the subsequent transactions therein:
                                                                              (10 Marks)

b.   Adebayowa Ventures prepares its financial statements to April 30, each year. The
     business pays rent quarterly in advance on January 1, April 1, July 1 and October 1,
     each year. The annual rent is ₦600,000. On June 30, 2017, the rent was increased
     to ₦900,000 per annum.

Required:

Calculate the amount of rent that will be recognised in the:

i.   Statement of profit or loss for the year ended April 30, 2017

(3 Marks)

ii.   Statement of financial position as at April 30, 2017.   (1 Mark)

c.   D'Favour owns several properties in Lagos which are let out to tenants. The summary of transactions for the year ended December 31, 2017 is given below:

	₦'000
Accrued rent at December 31, 2016	440
Prepaid rent at December 31, 2016	250
Rent received during 2017	2,550
Accrued rent at December 31, 2017	350
Prepaid rent at December 31, 2017	480
Uncollectable rent to be written-off	35
Agreement fee received	50

Required:

Prepare rental income account to determine the amount of rent to be recognised in the statement of profit or loss for the year ended December 31, 2017.   (6 Marks)

(Total 20 Marks)

MULTIPLE CHOICE SOLUTIONS

SECTION A

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

Tutorial for MCQ

Q2   Depreciation $= \dfrac{Cost\ less\ residual\ value}{Estmated\ useful\ life}$

$\dfrac{₦(250,000-10,000)}{8} = ₦30,000$

Q4

	N'000	N'000
Net profit		4,000
Interest of capital		
X N2000,000 x 10%	200	
Y N3000,000 x 10%	300	
Z N5000,000 x 10%	500	(1,000)
Salary x		(1,000)
Distributable profit		2,000

X's share of profit = N2m x $\frac{1}{3}$ = N333,333

Q5

	N'000
Current account of Y salary	1,000.000
Share of profit $\frac{2}{3}$ x 2,000	666.667
	1,666 .667

Q6   Y's share of profit is N666,667

Q9

Journal

		Dr	Cr
		N	N
Dr	Cash	30,000	
Cr	Inventory		22,500
	Profit		7,500

Net increase in asset N30,000 – N22,500 = N7,500

Increase in equity (profit)   = N7,500

(ii)   Costs incurred subsequent to the acquisition of a non-current asset should be charged to profit or loss, but costs that improve the capacity or life span of the asset are capitalised.

Hence the amount to be charged is N25,420 + N16,245 = N41,665.

(16)   Allowance for doubtful receivables

	N
For the year 100,000 x 4%	4,000
Previous allowance	3,000
Increase/charged to profit or loss	1,000

EXAMINER'S REPORT

The questions cover substantially all parts of the syllabus and they test candidates' knowledge of the basic principles or recall of subject matter and simple calculations of figures using the basic principles.

All the Candidates attempted the question and performance was average.

The commonest pitfalls of the candidates were their inability to:

- Apply the principle of double entry correctly;
- Compute the effect of disposal of assets on accounting equation;
- Adjust for the effect of changes in allowance for doubtful debts; and
- Correct application of cash and accrual bases of accounting.

Candidates are advised to internalise the basic principles enunciated in financial Accounting for better performance in future examinations of the Institute.

SECTION B

SOLUTION 1

ROYAL PALM LTD

PETTY CASH BOOK

Receipts	C/Bk Fol.	Date 2015	Particulars	Pcv No fol.	Total payment	ANALYSIS OF PAYMENT			
						Postage/ Tel	Travelling Exps	Office Exps	Electricity
₦					₦	₦	₦	₦	₦
20,000			Balance b/d						
		1/2	Postage stamps		450	450	-	-	-
		1/2	Carriage inwards		575	-	575	-	-
		2/2	Travelling expenses		9,090	-	9,090	-	-
		4/2	Petty cash register		1,200	-	-	1,200	-
		4/2	Office stationery		3,685	-	-	3,685	-
		4/2	Office expenses		750	-	-	750	
		4/2	Electricity bills		2,250	-	-	-	2,250
		6/2	Telephone bills		1,750	1,750	-	-	-
		6/2	Courier		120	120	-	-	-
		7/2	Office expenses		90	-	-	90	-
		7/2	Total expenses – week 1		19,960	2,320	9,665	5,725	2,250
		7/2	Balance c/d		40				
20,000					20,000				
40		8/2	Balance b/d		-	-	-	-	-
19,960		8/2	Re-imbursement		-	-	-	-	-
		10/2	Repair of machines		3,750	-	-	3,750	-
		11/2	Postage stamps		600	600	-	-	-
		11/2	Telephone bills		1,200	1,200	-	-	-
		11/2	Travelling expenses		300	-	300	-	-

	12/2	Duplicating paper		4,500	-	-	4,500	-
	12/2	Ceiling fans (fittings)		9,600	-	-	9,600	-
		Total expenses – Week 2		19,950	1,800	300	17,850	-
	12/2	Balance c/d		50				
		Total expenses – Week 2	GL	_____	4,120	9,965	23,575	2,250
20,000	14/2			20,000				
50	15/2	Balance b/d						

(b)

i.	Debit Postages and telephone account	₦ 4,120	
ii.	Debit Traveling expenses account	₦ 9,965	
iii.	Debit Office expenses account	₦23,575	OR
iv.	Debit electricity account	₦ 2,250	
v.	Debit Furniture and fittings account	₦ 9,600	

i. Postages and telephones account of ₦4,120 would be In the debited to the general ledger General

ii. Travelling expenses account of ₦9,965 would be Ledger debited to the general ledger account

iii. Office expenses account of ₦23,575 would be debited to the general ledger.

iv. Electricity account of ₦2,250 would be debited to the general ledger

v. Furniture and fittings account of ₦9,600 would be debited to the general ledger.

EXAMINER'S REPORT

The question tests candidates' ability to prepare petty cash book. About 90% of the candidates attempted the question and performance was average.

The commonest pitfalls include the following:
- Most candidates created more than the expenditure heads required in the question which impacted negatively on their solution to part 'b' of the question.

- Some candidates opened only the total column without analysis columns.

- Some candidates did not understand the application of the imprest system, hence they missed the amount re-imbursed to the petty cashier at the beginning of the second week.

Candidates are advised to pay attention to details on the application of the imprest system. The study text would be of good guide in this respect.

MARKING GUIDE

SOLUTION 2

(a)

		DR	CR
		₦	₦
i.	Bank charges account	1,000,000	
	Bank account		1,000,000
	Being charges deducted at source by the Bank		
ii.	Accumulated depreciation account	10,943,000	
	Disposal of non-current asset account		10,943,000
	Being accumulated depreciation on non-current asset disposed		
iii.	Proceeds from disposal account	2,000,000	
	Disposal of non-current asset account		2,000,000
	Being proceed from disposal of non-current asset		
iv.	Disposal for non-current asset account	11,879,000	
	Non-current asset account		11,879,000
	Being cost of non-current asset disposed		
v.	Discount allowed account	240,000	
	Trade payables account	10,260,000	
	Discount received account		260,000
	Trade receivables accounts		10,240,000
	Being discount allowed, received and set off from trade payables and trade receivables account		
vi.	Irrecoverable debt account	2,000,000	
	Trade receivables account		2,000,000
	Being irrecoverable debts written off		
Vii	Return outward account	630,000	
	Return inward account	630,000	
	Suspense account		1,260,000

		N	N
	Being return by customer wrongly entered in return outward acct		
viii.	Suspense account	9,000	
	Stationery account		9,000
	Being payment for stationery overstated in the account		
ix.	Packing materials account	76,000	
	Suspense account		76,000
	Being error of single entry		
x.	Cash/bank account	36,000	
	Insurance account		36,000
	Being error of original entry		
xi.	Suspense account	297,000	
	Purchases account		297,000
	Being extraction of wrong opening balances		

(b)

Naja Limited
Suspense account

	N		N
Balance b/d	1,030,000	Return inward	630,000
Stationery	9,000	Return outward	630,000
Purchases	297,000	Packing materials	76,000
	1,336,000		1,336,000

Note: The balance b/d of ₦1,030,000 is the difference in the books of account.

EXAMINER'S REPORT

The question tests candidates' ability to correct errors with journal entries and prepare the suspense account to clear the errors that affect the trial balance,

More than 90% of the candidates attempted the question and their performance was below average.

The commonest pitfalls include the inability of the candidates to recognise correctly the accounts to debit and credit, which is a demonstration of their poor knowledge of the application of the double entry principle.

Candidates are advised to study and practise many questions on the double entry principles.

There are ample illustrations in the ICAN Study Text and Pathfinder at this level with which candidates can practise.

MARKING GUIDE

		Marks	Marks
a.	Journal entries	12½	
	Narrations	2½	15
b.	Title	1	
	Entries in suspense account	4	5
			20

SOLUTION 3
(a)
Determination of profit for the year ended December 31, 2017 in the books of Richard Jones

	₦	₦
Capital – January 1, 2017		3,250,000
Add drawings		150,000
		3,400,000
Net assets, December 31, 2017	75,000	
Proceeds from issue of shares	2,000,000	
Add: Net profit (Balancing figure)	150,000	
		2,225,000
Net profit		1,175,000

(b)
Jago Enterprises
Statement of profit or loss for the year ended March 31, 2018

	Notes	₦	₦
Net assets at March 31, 2018	2		3,548,400
Add: Drawings			350,000
			3,898,400
Net assets as at April 1, 2017	1	4,905,468	
Additional capital introduced		5,600	
			(4,911,068)
Profit/(loss) for the year			(1,012,668)

Workings Notes
Wk 1

Assets:	₦	₦
Motor van		600,000
Furniture and fittings		80,000
Inventory		3,190,000
Trade receivables		2,164,200
Prepayments		1,114,400

Cash balance		8,368
Total assets		7,156,968
Liabilities:		
Trade payables	2,200,000	
Bank overdraft	50,900	
Total liabilities		(2,251,500)
Net assets at April 1, 2017		4,905,468

Wk 2:		
Assets:	₦	₦
Motor van	600,000	
Less: Depreciation	(100,000)	500,000
Furniture and fittings	80,000	
Less: Depreciation	(12,000)	68,000
Inventory		2,348,000
Trade receivables		2,378,000
Bank balance		41,800
Cash balance		23,000
Total assets		5,358,800
Liabilities:		
Trade payables	1,810,400	
Total liabilities		(1,810,400)
Net assets at March 31, 2018		3,548,400

EXAMINER'S REPORT

The question tests candidates' knowledge of preparing the statement of profit or loss from incomplete records.

About 80% of the candidates attempted the question and performance was average.

Candidates' pitfalls were their inability to correctly adjust for additional capital introduced during the period, proprietors drawings and the determination of depreciation charged on property, plant and equipment to determine the net profit.

Candidates are advised to spend adequate time to cover the syllabus and pay attention to detailed application of the principles for preparing accounts from incomplete records.

MARKING GUIDE	Marks	Marks
a. Determination of net profit 9 entries at 2/3 each		6
b. - Determination of net assets 1/4/2017 – 10ticks at ½ mark each	5	
- Determination of net assets 31/12/2018 – 9 ticks at ½ mark each	4½	
- Determination of net profit – 8 ticks at ½ mark each	4	
Title	½	14
		20

SOLUTION 4

Alabamusa Company
Extended Trial Balance as at December 31, 2017

	Initial Trial Balance		Adjustments		Adjusted Trial Balance	
	DR ₦'000	CR ₦'000	DR ₦'000	CR ₦'000	DR ₦'000	CR ₦'000
Cash	284,600				284,600	
Prepaid insurance	16,000			4,000	12,000	
Inventory of spare parts	108,000				108,000	
Heavy duty machine	1,049,600				1,409,600	
Accumulated depr.		90,000		100,000		190,000
8% loan notes		120,000				120,000
Share capital		750,000				750,000
Retained earnings		56,000				56,000
Salaries and wages	250,000				250,000	
Maintenance expenses	84,000				84,000	
Fuel & lubrication exp.	63,000				63,000	
Water, gas, & electricity	56,400				56,400	
Rental expenses	24,000			4,000	20,000	
Sales income		967,600	7,500			960,100
Advertising expenses	48,000				48,000	
Insurance expenses			4,000		4,000	
Loan note interest			8,000		8,000	
Accrued loan note interest				8,000		8,000
Prepaid rent			4,000		4,000	
Closing inventory (SOPL)				65,000		65,000
Closing inventory (SOFP)			65,000		65,000	
Depreciation			100,000		100,000	
Prepaid income				7,500		7,500
	1,983,600	1,983,600	188,500	188,500	2,156,600	2,156,600

EXAMINER'S REPORT

The question tests candidates' understanding of the principles involved in the preparation of trial balance and extended trial balance after effecting adjustments on the initial trial balance.

About 80% of the candidates attempted the question and performance was average.

Commonest pitfall is the candidates' inability to adopt the correct format of incorporating the "adjustment column" after the initial trial balance before arriving at the final trial balance. Few candidates could not identify correct postings of debit and credit entries appropriately.

Candidates are advised to study the format and principles of extended trial balance by using the Institute's Study Text and practise with past questions in the Pathfinder.

MARKING GUIDE

		Marks
-	Initial trial balance	
	15 entries at $^2/_5$ per entry	6
-	Adjustments	
	12 entries at $^2/_5$ per entry	$4^4/_5$
-	Adjusted trial balance	
	23 entries at $^2/_5$	$\underline{9^1/_5}$
	Total marks	$\underline{\underline{20}}$

SOLUTION 5

(a)   **Daraju Enterprises**
    Computation of annual depreciation charge for 2013 – 2015 using
    Units of production method

Year	Units produced	Depreciation	
2013	15,000	15,000/100,000 x ₦250,000 =	37,500
2014	17,000	17,000/100,000 x ₦250,000 =	42,500
2015	21,000	21,000/100,000 x ₦250,000 =	52,500
2016	23,000		
2017	24,000		
	100,000		

Sum-of-the-Years-Digit Method

Years	Years in No.	Weight allocated	Depreciation charged ₦	₦
2013	1	5	5/15 x 250,000 =	83,333
2014	2	4	4/15 x 250,000 =	66,667
2015	3	3	3/15 x 250,000 =	<u>50,000</u>
2016	4	2		
2017	5	<u>1</u>		
		<u>15</u>		

Statement of financial position (extract as at December 31

Non-current Asset	Cost	Acc. Depr.	Carrying amount
Machine:	₦	₦	₦
2013	250,000	(37,500)	212,500
2014	250,000	(80,000)	170,000
2015	250,000	(132,500)	<u>117,500</u>

(b)   **Statement of cash flows**

i.   Purpose of statement of cash flows

A statement of cash flows is prepared to provide information about where a business obtained its cash during the financial period and how it made use of its cash. It also shows whether there is an increase or a decrease in the amount of cash held by the entity between the beginning and the end of the period.

ii.   Definition of cash and cash equivalents

- Cash comprises cash on hand and demand deposits.
- Cash equivalents are short-term, highly liquid investments that are readily convertible to known amounts of cash and which are subject to an insignificant risk of change in value.

iii.   A statement of cash flows, groups inflows and outflows of cash, under three broad heading:

- Cash flows from operating activities;
- Cash flows from investing activities; and
- Cash flows from financing activities.

EXAMINER'S REPORT

The question was set to test candidates' knowledge of principles involved in the computation of depreciation charge, using units of production and sum-of-the-years'- digit methods.

Part 'B' of the question tests candidates' knowledge of IAS 7 as regards the format and contents of statement of cash flows.

About 50% of the candidates attempted the question and performance was below average.

Candidates displayed poor knowledge of calculation of depreciation charge using units of production and sum-of-the-years'-digit methods, thus resulting in incorrect accumulated depreciation and carrying value of the non-current assets.

Candidates should familiarise themselves with the principles involved in the calculation of depreciation charge, using various methods by reading the Institute's Study Texts and working related questions in the Pathfinder.

MARKING GUIDE

			MARKS	MARKS
a.		Computation of depreciation		
	i.	Using units of production		
	-	8 entries at ½ mark each	4	
	ii.	Using sum of the digits		
	-	8 entries at ½ mark each	4	
	iii.	Statement of financial position entries		
	-	8 entries at ½ mark each	<u>4</u>	12
b.	i.	Purpose of statement of cash flows	3	
	ii.	Definition of cash & cash equivalents	2	
	iii.	Three broad headings of statement of cashflows	<u>3</u>	<u>8</u>
		Total		<u>20</u>

SOLUTION 6
(a)

Akinola
Journal Entries for the month of January 2017

Date		Dr.	Cr.
		₦'000	₦'000
Jan. 1	Cash in hand	50	
	Cash at bank	150	
	Receivables	300	
	Inventory	100	
	Equity		600
	Being assets and equity as at January 1, 2017		
Jan. 2	Purchases account	70	

	Cash account		70
	Being goods purchased on credit from Falaye		
Jan. 5	Shop fittings account	500	
	Bank account		500
	Being purchase of shop fittings by cheque		
Jan. 9	Shop fittings account	27	
	Bank account		27
	Being purchase of shop fittings by cheque		
Jan. 15	Trade receivable – Dele's account	100	
	Sales revenue accounts		100
	Being goods sold on credit to Dele		
Jan. 16	Trade payable – Falaye's account	400	
	Bank account		400
	Being payment of trade payable by cheque		
Jan. 20	Purchases account	140	
	Trade payable – B. Bunmi's account		140
	Being purchases of goods from Bunmi B. on credit		
Jan. 25	Trade receivable – J. Shola's account	150	
	Sales revenue account		150
	Being goods sold on credit to J. Shola		
Jan. 28	Office equipment account – (Accounting Machine)	70	
	Bank account		70
	Being purchase of an old accounting machine by cheque		

(b)
Adebayowa Ventures
Computation of rent to be recognised in financial statements

Quarterly rent $= \frac{600,000}{4} = ₦150,000$

Balance b/f May 1, 2016 $\frac{150,000}{3}$ x 2		₦100,000 =	(Rent prepaid May & June 2016)
July 1, 2016	Bank/cash	₦150,000 =	(July – Sept. 2016)
Oct. 1, 2016	Bank/cash	₦150,000 =	(Oct. – Dec. 2016)
Jan. 1, 2017	Bank/cash	₦150,000 =	(Jan. – March 2017)
April 1, 2017	Bank/cash	₦50,000 =	(April 1 & April 30, 2017)
	Bank/cash	₦100,000 =	(May & June, 2017 Prepaid)

Amount of rent recognised in the:

i.   Statement of profit or loss for the year ended April 30, 2017
     =   ₦100,000 + ₦150,000 + ₦150,000 + ₦150,000 + ₦50,000
     =   ₦600,000

ii. Statement of financial position as at April 30, 2017.
     =   ₦100,000

OR

(b)   **Adebayowa Ventures**
                                          Rent account

Date	Particular	Amount	Date	Particular	Amount
		₦			₦
01/05/2016	Prepaid b/d	100,000			
01/07/2016	Bank	150,000	30/04/2017	SOPL	600,000
01/10/2016	Bank	150,000			
01/01/2017	Bank	150,000			
01/04/2017	Bank	150,000	30/04/2017	Prepaid c/d	100,000
		700,000			700,000
01/05/2017		100,000			

The amount of rent that will be recognised in the:

i.   Statement of profit or loss for the year April 30, 2017 is ₦600,000

ii. Statement of financial position as at April 30, 2017 is ₦100,000

(c)   **D'Favour**
                                   Rental income account

Particular	Amount	Particular	Amount
	₦'000		₦'000
Accrued b/d	440	Prepaid b/d	250
Statement of profit or loss	2,265	Bank	2,550
		Uncollected rent written off	35
Prepaid c/d	480	Accrued c/d	350
	3,185		3,185
Accrued b/d	350	Prepaid b/d	480

EXAMINER'S REPORT

The question tests candidates' knowledge of:

- Preparation of journals entries
- Calculation of rent charged and prepaid and its reflection in the statements of profit or loss and statement of financial position.
- Determination of rental income in the statement of profit or loss.

About 90% of the candidates attempted the question and performance was average.

The commonest pitfall was lack of understanding of double entry principles and inappropriate classification of rental income and expenditure.

Candidates are advised to familiarise themselves with double entry principles in the preparation of journals entries and correct classification of rental income into appropriate periods when rent is prepaid or in arrears.

MARKING GIUDE		Marks	Marks
a.	Journal entries 19 ticks x ½ mark each	9½	
	Title	<u>½</u>	10
b.	Rental account		
	12 entries at $\frac{1}{3}$ per tick		4
c.	Rental income account		
-	Title	½	
-	Entries for 2017 - 9 ticks at ½ mark each	4½	
-	Balance b/d at Jan. 1, 2018	<u>1</u>	<u>6</u>
	Total		<u>20</u>

THE INSTITUTE OF CHARTERED ACCOUNTANTS OF NIGERIA

FOUNDATION LEVEL EXAMINATION - NOVEMBER 2018

MANAGEMENT INFORMATION

Time Allowed: 3¼ hours (including 15 minutes reading time)

SECTION A: **MULTIPLE - CHOICE QUESTIONS** **(20 MARKS)**

INSTRUCTION: YOU ARE REQUIRED TO ANSWER ALL QUESTIONS IN THIS SECTION

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

1. Which of the following is not a cost object?
   A. A car
   B. A tonne of steel
   C. A square metre of carpet
   D. Carpets produced
   E. A batch of bread items

2. The following are items of non-production cost, except
   A. Salaries and wages of delivery van drivers
   B. Distribution costs
   C. Salaries and wages of factory supervisors
   D. Salaries and wages of Administrative Manager
   E. Selling costs

3. Costs which remain fixed within a relevant range of activity is known as
   A. Fixed costs
   B. Stepped fixed costs
   C. Variable costs
   D. Direct costs
   E. Indirect Costs

4. Records kept in the maintenance department show that there is a fixed element of ₦750 per month and a variable element related to machine hours amounting to ₦3.38 per machine hour.

   What is the expected cost for a month, when the planned activity level is 2,250 machine hours?
   A. ₦8,355
   B. ₦8,310
   C. ₦8,175
   D. ₦7,680
   E. ₦7,605

5. AB Limited has four items of inventory. The inventory count exercise carried out has established that, the amount of inventory currently held at cost are as follows:

Inventory Items	Cost ₦	Selling Price (₦)	Distribution Cost (₦)
W	9,600	9,360	600
X	19,600	25,200	280
Y	24,000	25,500	300
Z	13,000	13,125	265

Required:

At what value should each of the above inventory items be stated in the financial statement?

- A. W - ₦9,600   X - ₦1,960   Y - ₦24,000   Z - ₦13,500
- B. W - ₦8,760   X- ₦24,920   Y - ₦25,200   Z - ₦12,860
- C. W - ₦9,360   X - ₦25,200   Y - ₦25,500   Z - ₦13,125
- D. W - ₦8,760   X - ₦19,600   Y - ₦24,000   Z - ₦12,860
- E. W - ₦8,760   X- ₦24,920   Y - ₦24,000   Z - ₦13,125

6. The process by which items of cost are shared between two or more cost centres on a fair basis is known as
   - A.   Cost sharing
   - B.   Cost allocation
   - C.   Cost apportionment
   - D.   Cost division
   - E.   Cost saving

7. The point at which total contribution is equal to total fixed cost is known as
   - A.   Gross Profit Point
   - B.   Break–Even Point
   - C.   Net Profit Point
   - D.   Margin of Safety
   - E.   Target Profit

8. What are the future cash-flows that would arise as a direct consequence of a decision being taken called?
   - A.   Sunk cost and revenues
   - B.   Historical cost and revenues
   - C.   Marginal cost and revenues
   - D.   Relevant cost and revenues
   - E.   Future costs and revenues

9. The following data was extracted from Whyme & Company Limited.

Budgeted Sales   750,000 units
Selling Price   ₦25
Variable cost   ₦17
Expected fixed cost   ₦4,000,000

What is the margin of safety ratio?
A. 50.00%
B. 33.33%
C. 32,50%
D. 31.00%
E. 30.00%

10. Below is the information relating to the operations of XYZ Ltd.

	June ₦'000	July ₦'000	August ₦'000	September ₦'000
Sales	6,000	8,000	8,500	7,000
Cost of sales	4,000	6,000	6,000	5,000

It is the company's policy to collect 45% of sales in the month of sales, 25% the following month and the balance, net of 5% bad debt in the third month.

What is the collection in the month of August?
A. ₦8,500,000
B. ₦7,625,000
C. ₦7,325,000
D. ₦5,400,000
E. ₦5,200,000

11. Which of the following is not a composite cost of units used in service costing?
A. Cost per room per day
B. Cost per passenger per kilometre
C. Cost per tonne per mile delivered
D. Cost per patient per day
E. Cost per unit per day

12. The following data were extracted from the records of ABCYZ Limited in respect of its product YZ.

Direct Material   ₦10
Direct labour hour   ₦30/12 minutes
Budgeted production (Units)   1,000,000
Budgeted production overhead ₦2,000,000

What is the absorption rate using direct labour?

A. ₦40.00
B. ₦24.00
C. ₦12.00
D. ₦10.00
E. ₦ 2.00

13. Feed-forward control system makes control.................based on attempting to achieve a particular outcome

A. Behaviour
B. Adjustment
C. Output
D. Process
E. Input

14. Which of the following is not a **general purpose digital computer system**?

A. Super computer
B. Mainframe
C. Mini-computer
D. Mono-computer
E. Desktop computer

15. A utility software performs..................... on the computer system

A. General functions
B. Specific function
C. Utilisation capability
D. Only editing function
E. Only copying function

16. The three levels of information usage are: strategic, tactical and.................... information

A. Electronic
B. Manual
C. Operational
D. Municipal
E. Communication

17. Which of the following is not a property of telecommunication protocol?

A. Detection of the underlying physical connection or the existence of the other endpoints
B. How to start and end a message
C. How to format a message
D. How to break messages into modules
E. How to detect unexpected loss of the connection and what to do next

18. Which of the following is a correct Internet Protocol (IP) address of a computer on the internet?
   A. 00 11 22
   B. 00 11 22 33
   C. 00 11
   D. 00
   E. 00 11 22 33 44

19. Which of the following is not an input data into a computer system?
   A. Sales information
   B. Purchase information
   C. New employee details
   D. Existing production lines
   E. Updates to existing employees details

20. The following are risks to computer systems, except
   A. Errors made by individuals
   B. Hardware malfunction
   C. High cost of obtaining information
   D. Natural disasters
   E. Virus attack on the system

SECTION B: **OPEN - ENDED QUESTIONS**   **(80 MARKS)**

INSTRUCTION: **YOU ARE REQUIRED TO ANSWER FOUR OUT OF SIX QUESTIONS IN THIS SECTION**

QUESTION 1

XY Limited buys a particular product from Lagos and sells to customers in Ile-Ife. For the six months ended 31 December 2017 the company has the following transactions in its records. There was an opening balance of 5,000 units valued at ₦70 each.

Date	Quantity bought (units)	Price per unit ₦
July	5,000	74
September	4,500	77
November	7,500	79

Date	Quantity sold (units)	Price per unit ₦
August	7,000	100
October	5,000	110
December	8,000	115

35

Required:

a.   Record the given transactions on a store ledger card using each of the following methods:
   • FIFO
   • Weighted Average   (15 Marks)

b.   Determine gross profit for the period using Weighted Average Method
                                                                                (5 Marks)
                                                                    (Total 20 Marks)

QUESTION 2

a.   Distinguish briefly between:
   i.   Short term and Long term budgets.
   ii.   Aspirational and Ideal budgets.   (4 Marks)

b.   The budgeted sales of Ade Engineering Limited for year 2017 are as follows:

Product	Sales (in units)	Selling Price (per unit)
X	25,000	₦30
Y	23,000	₦25
Z	20,000	₦27

Inventory at the beginning of 2017

Product	Units
X	8,000
Y	8,000
Z	7,000

The Marketing Director intends to run a marketing campaign towards the end of 2017 and has therefore requested for inventory levels to be increased at the end of 2017 as follows:

Product	Increase by
X	25%
Y	55%
Z	25%

You are required to prepare:

i.   Sales budget for year 2017   (4 Marks)
ii.   Production budget (in units) for year 2017   (12 Marks)
                                                                    (Total 20 Marks)

QUESTION 3

LACUNA Limited is a leading manufacturer of three telecommunication component frames, namely Doy, Toy and Rox. The company uses a traditional costing system to allocate production overheads to products using machine hours.

As a newly appointed cost accountant, you propose that activity based costing can provide a better allocation of production overhead to products than the current system. The following total production overheads for the last period were recorded by the cost accounting system and cost drivers for each activity have been identified and measured as follows:

Activity	Overhead	Cost driver
Utility costs	₦1,890,000	machine hours
Production set-up-cost	₦1,200,000	number of production runs
Cost of ordering materials	₦180,000	number of material orders
Cost of handling materials requisitions	₦330,000	number of material

Details of the three component frames and relevant information for the period are as follows:

PRODUCTS	DOY	TOY	ROX
Number of production runs	17	25	18
Number of material orders	20	30	40
Number of material requisitions 30	100	70	
Units produced	1,000	2,000	2,500
Machine hour per unit	1	1.5	2
Direct labour hour/unit (₦600/hour)	0.5 hour	1 hour	2 hours
Direct materials per unit	₦100	₦120	₦150

Required:

Calculate the unit production cost for each of the three products using:

a.   The traditional absorption costing method   (8 Marks)
b.   The activity based costing approach.   (12 Marks)
                                                                 (Total 20 Marks)

QUESTION 4

a.   Define computer software.   (2 Marks)
b.   List and describe briefly **three** types of computer software.   (6 Marks)
c.   Describe and distinguish between Information Technology
        and Information System.   (4 Marks)
d.   List and describe briefly **four** uses of Information Systems.   (8 Marks)
                                                                 (Total 20 Marks)

QUESTION 5

a. Define and state **two** characteristics of each of the following:
   i. Management Information System (MIS)
   ii. Decision Support System (DSS)
   iii. Executive Information System (EIS)   (12 Marks)

b. State **two** advantages and **two** disadvantages of Expert Systems.
                                                             (4 Marks)

c. Define Integrated IT Systems and state **one** advantage and **one** disadvantage of Integrated IT Systems.   (4 Marks)
                                                        (Total 20 Marks)

QUESTION 6

a. In modern business practice, widespread use of computer systems and computer resources make security a critical priority.

Required:
i)   Define computer security.   (2 Marks)
ii) List and describe briefly **four** main risks to computer software.
                                                             (8 Marks)

b. AB Company Limited produces four (4) products and is planning its production mix for the next period. Estimated cost, sales and production data are as follows:

Product	W		X		Y		Z	
	N	N	N	N	N	N	N	N
Selling price /Unit		29		36		61		51
Materials at N1/kg	6		18		10		12	
Labour N5/Hr	15	21	10	28	35	45	25	37
Contribution		8		8		16		14

Product	W	X	Y	Z
Resource /unit				
Materials (Kgs)	6	18	10	12
Labour (Hrs)	3	2	7	5
Maximum demand (units)	5,000	5,000	5,000	5,000

Based on the above data, calculate the optimal product mix under the assumptions that the material is limited to 110,000kg in a period?
                                                             (10 Marks)
                                                        (Total 20 Marks)

SOLUTION 1

SECTION A

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

WORKINGS

4. 2250 hours x N3.38 per Machine hour = ₦7,605
    plus fixed element   =   750
                                             ₦8,355

5. Lower of cost or Net Realisable Value
    8,760 (9360 – 600), 19600, 24,000, 12,860 (13,125-265)

9. Brake-even point = $\underline{4,000,000}$ Margin of safety = 750,000 – 500,000

                   ₦25 – ₦17   = 250,000

            =   500,000   M/S Ratio   = 250000/750,000

                                                         = 33.33%

10. Collection in August

     45% of ₦8,500,000   =   3,825,000

     25% of ₦8,000,000   =   2,000,000

     25% of ₦6,000,000   = $\underline{1,500,000}$

                                           $\underline{7,325,000}$

12. Direct Labour hour ₦30/12 minutes

     Direct Labour production for 1 hour = 5 units

     Total Direct Labour hour for production of 1,000,000

           = 1,000,000/5   = 200,000 hours

$$OAR \ using \ direct \ labour \ hour \quad = \frac{₦2,000,000}{200,000} \qquad = \quad ₦10$$

SECTION A

There are twenty multiple-choice questions which cover all sections of the syllabus.

Questions were attempted by virtually all the candidates and performance was good as about 60% of the candidates scored 50% and above of the marks obtainable.

Majority of the candidates who performed below average are those who did not cover the contents of the syllabus sufficiently.

For candidates to do well in this part of the paper, it is instructive that they spend adequate time in preparing for future examinations. Familiarity with the ICAN Study Text and other relevant materials are recommended as part of their preparation.

SOLUTION 1

(a) i.

XY LTD.
FIFO METHOD-store ledger card

Date	Receipts Unit	Unit cost ₦	Total ₦	Issues Unit	Unit cost ₦	Total ₦	Balance Unit	Unit cost ₦	Total ₦
July	-	-	-	-	-	-	5000	70	350, 000
July	5000	74	370, 000	-	-	-	10, 000	-	720, 000
August	-	-	-	7,000	-	498,000	3000	74	222, 000
Sept.	4500	77	346, 500	-	-	-	7500	-	568, 500
Oct.	-	-	-	5000	-	376,000	2500	77	192, 500
Nov.	7500	79	592, 500	-	-	-	10, 000	-	785, 000
Dec.	-	-	-	8000	-	627,000	2000	-	158, 000

Workings - 1st issue- 7000 units   =   5000 units @₦70= 350,000

2000 units @₦74   =   148,000

498,000

2nd issue- 5000 units   =   3000 units @ ₦74=   222,000

2000 units @ ₦77=   154,000

376,000

3rd issue - 8000 units   =   2500 units @ ₦77=192,500

5,500 units @ ₦79=   434,500

627,000

(7½ Marks)

(ii) WEIGHTED AVERAGE METHOD

Date	Receipts			Issues			Balance		
	Unit	Unit cost ₦	Total ₦	Unit	Unit cost ₦	Total ₦	Unit	Unit cost ₦	Total ₦
1st July	-	-	-	-	-	-	5000	70	350,000
July	5000	74	370,000	-	-	-	10,000	72	720,000
August	-	-	-	7,000	72	504,000	3000	72	216,000
Sept.	4500	77	346,500	-	-	-	7500	75	562,500
Oct.	-	-	-	5000	75	375,000	2500	77	187,500
Nov.	7500	79	592,500	-	-	-	10, 000	78	780,000
Dec.	-	-	-	8000	78	624,000	2000	78	156,000

Working notes on Weighted Average Method

1.   Value of issue in August   ₦
     10,000 x ₦72   =   720,000

2.   Value of issue in October
     7,500 x ₦75   =   562,500

3.   Value of issue in December
     10,000 x ₦78   =   780,000

(b) Determination of gross profit
     Total sales for the period   -   ₦
     August-7000units x N100/unit   -   700,000
     October-5000units x N110/unit   -   550,000
     December- 8000units x N115/unit   -   920,000
                                                  2,170,000   (2 Marks)

Cost of goods sold using weighted Average method
                                                  ₦
August- 7000 units X ₦72/unit   504, 000
October- 5000 units X ₦75/unit   375, 000
September- 8000 units X ₦78/unit   624, 000
                                                  1, 503, 000   (2 Marks)

Gross profit   = Sales – cost of goods sold
₦2, 170, 000 – ₦1, 503,000 = ₦667,000   (1 Mark)

SECTION B – SOLUTION 1

EXAMINER'S REPORT

This question tests candidates' ability to prepare stock ledger cards using the:

First In First Out (FIFO) and weighted average methods and to determine the gross profit using the Weighted Average approach.

This question was very popular among the candidates as about 98% of them attempted it.

Performance was good as about 60% of the candidates who attempted the question scored average 50% of the allocated mark.

The candidates who did not do well are those who exhibited poor presentation and did not display mastery of the subject matter.

Marking Guide		Marks	Marks
1a.	Store Ledger Using FIFO		
	Receipts	2	
	Issues	2	
	Balance	2	
	Working on issues	$1\frac{1}{2}$	$7\frac{1}{2}$
	Store Ledger Using Weighted Average		
	Receipts	2	
	Issues	2	
	Balance	$3\frac{1}{2}$	$7\frac{1}{2}$
b.	Computation of Sales	2	
	Computation of Cost of Sales	2	
	Computation of Gross Profit	1	5
	Total		**20**

SOLUTION 2

i. **Short term Budget** – These are budgets with short period of implementation. It is usually not more than a year. It can be for a month, a quarter, half yearly or a year. If the period is short, facts assumed at the time of preparing the budget can remain throughout the budget period.

Whereas Long-term Budgets - These are budgets with long period of implementation, longer than twelve calendar months. The longer the budget period, the greater the likelihood for situation or facts to change.

ii.   **Aspirational Budgets** - These are budgets based on performance levels and targets that senior managers would like to achieve. While **Ideal Budgets** - are budgets based on performance levels and targets that can be achieved under the most favorable conditions.

b.

Ade Engineering Ltd
Sales Budget – 2017

i.

Product	Units	Selling Price (₦)	Sales (₦)
X	25,000	30	750,000
Y	23,000	25	575,000
Z	20,000	27	540,000
			1,865,000

ii.   Production Budgets (in units)

	PRODUCT (UNITS)		
	X	Y	Z
Sales required	25,000	23,000	20,000
Add desired closing inventory	10,000	12,400	8,750
	35,000	35,400	28,750
Less Opening inventory	8,000	8,000	7,000
Units to produce	27,000	27,400	21,750

Working – Desired closing inventory of finished goods

X = 8,000 units x 1.25   =   10,000
Y = 8,000 units x 1.55   =   12,400
Z = 7,000 units x 1.25   =   8,750

EXAMINER'S REPORT

The question tests candidates' understanding of the concept of budget and the ability to prepare sales and production budgets.

About 85% of the candidates attempted this question and performance was very good. About 70% of the candidates who attempted the question scored 50% and above. Poor performance resulted from poor communication and inability to recognize the effect of opening inventory on sales budget preparation.

Candidates are advised to acquaint themselves with the ICAN Study Texts and other relevant materials.

Marking Guide		Marks	Marks
a.	Distinguishing between terms		
(i)	Short-term vs Long-term budget	2	
(ii)	Aspirational vs ideal budget	<u>2</u>	4
b.(i)	Sales Budget		
	Product X	1	
	Product Y	1	
	Product Z	1	
	Total	<u>1</u>	4
(ii)	Derived closing stocks		
	Product X	1	
	Product Y	1	
	Product Z	<u>1</u>	3
	Production Budget		
	Product X	3	
	Product Y	3	
	Product Z	<u>3</u>	<u>9</u>
	Total		**<u>20</u>**

SOLUTION 3

a.

LACUNA LIMITED
COMPUTATION OF PRODUCTION COST PER UNIT USING TRADITIONAL ABSORPTION

PRODUCTS	DOY	TOY	ROX
	₦	₦	₦
Direct Material	100	120	150
Direct Labour	<u>300</u>	<u>600</u>	<u>1,200</u>
PRIME COST	400	720	1,350
Production overhead (wki)	<u>400</u>	<u>600</u>	<u>800</u>
Unit product cost	<u>**800**</u>	<u>**1,320**</u>	<u>**2,150**</u>
Production/Units	1,000	2,000	2,500
Total production overhead absorbed (₦)	400,000	1,200,000	2,000,000

Workings of overhead Absorption Rate

	Total Machine hours
Doy (1,000 x 1)	1,000
Toy (2,000 x 1.5)	3,000
Rox (22,500 x 2)	<u>5,000</u>
	<u>9,000</u>

OAR =Total overhead/Total machine hours

Items	₦
Utility	1,890,000
Production set-up	1,200,000
Cost of ordering materials	180,000
Cost of handling material	330,000
	3,600,000

$$OAR = \frac{₦3,600,000}{9,000} \quad ₦400/\text{Machine hour}$$

COMPUTATION OF PRODUCTION COST USING ACTIVITY BASED COSTING APPROACH

PROUDCTION	DOY	TOY	ROX
	₦	₦	₦
Direct materials	100	120	150
Direct labour	300	600	1,200
Prime cost	400	720	1,350
PRODUCTION OVERHEADS:			
Utility costs	210	315	420
Production set-up	340	250	144
Cost of material ordered	40	30	32
Cost of material handling	49.5	82.5	46.2
	1,039.5	1,397.5	1,992.2

Workings:

COMPUTATION OF COST DRIVERS RATES

COST POOL	₦	DRIVER	DRIVER ACTIVITY	DRIVER RATE
Utility costs	1,890,000	Machine hours	9,000	210/machine hour
Production set-up	1,200	No of Run	60	₦20,000 per run
Cost of ordering	180,000	No of materials orders	90	₦2,000 per order
Cost of handling	330,000	No of requisitions	200	₦1,650 per order

EXAMINER'S REPORT
This question tests candidates' understanding of Absorption Costing using the Traditional Method and the activity based costing approach.

About 75% of the candidates attempted this question but performance was poor as about 40% of those who attempted the question scored 50% and above.

Those candidates who performed poorly showed poor understanding of the question and inability to differentiate between calculation in units and those in totals.

Marking Guide	Marks	Marks
a. Absorption Costing Method		
Direct Material per unit	1	
Direct Labour	1	
Prime Cost	1	
Production Overhead	1	
Unit Product Cost	1	
Production Unit	1	
Total Production Overhead Absorbed	<u>2</u>	8
b. Activity based costing approach		
Calculation of cost drivers' rate:		
Utility Cost	1	
Set-up Cost	1	
Ordering Cost	1	
Material Handling Cost	<u>1</u>	<u>4</u>
Computation of Production Cost		
Direct Materials	½	
Direct Labour	½	
Prime Cost	1	
Utility Cost	1	
Set-Up Cost	1	
Ordering Cost	1	
Handling Cost	1	
Production Overhead per unit	1	
Production Cost	<u>1</u>	<u>8</u>
Total		<u>**20**</u>

SOLUTION 4

a) Computer software is a generic term for all programs that run on the computer system i.e. a set of machine readable instructions that direct a computer's processor to perform specific operations.

b) The three types of computer software are:
- System software
- Application software
- Programming tools and language translators

System software: These are programs installed by the computer manufacturers which allow the hardware to function. They comprise of the Operating System utility and communication software. These software control the operation and facilitate varieties of function on the computer including copying of files and data sorting. They also control the transmission of data within a computer network.

Application software are programs which enable computer users to do their jobs. They are obtained off-the-shelf, through vendors or In-house development. It may also be taken free over the Internet

Programming tools and Language translators are software that assist programmers with writing programs and act as language processors.

c) Information Technology (IT) describes the application of computer system and telecommunication equipment to store, retrieve, transmit and manipulate data.

The term is also associated with computers and computer networks. It also includes other information distribution technology like television, telephone etc.

Information system describes complementary networks of software and hardware that people and organisation use to collect, filter, process, create and distribute data and information. Information system supports operations, management and decision making.

d) Uses of IS include:
- **Planning:**
  This involves helping to establish appropriate resources, timescales and forecast alternative outcomes.

- **Recording Transaction:**
  It helps in the recording of business transactions.

- **Performance measurement:**
  It helps to compare actual against planned activities to establish variances.

- **Decision making:**
  It helps managers to make wide range of decisions.

- **Controlling:** It ensures processes are implemented as planned.

EXAMINER'S REPORT

This question tests candidates' skill and ability to describe and differentiate a number of software and information systems.

About 98% of the candidates attempted the question and performance was good as about 60% of them scored 50% and above of the allocated mark.

The commonest pitfalls among candidates who performed poorly include confusion of Information System with Information Technology.

For improved performance in future examinations, candidates are advised to give preference to the use of ICAN Study Text.

Marking Guide		Marks	Marks
a.	Definition		2
b.	1 Mark each for listing		
	Three software	3	
	1 Mark each for describing		
	Three software	<u>3</u>	6
c.	2 Marks for explanation of IT	2	
	2 Marks for explanation of IS	<u>2</u>	4
d.	1 Mark each for listing 4 uses	4	
	1 Mark each for describing 4 uses	<u>4</u>	<u>8</u>
	Total		<u>**20**</u>

SOLUTION 5

a) **Management Information System (MIS)** processes data into useful information.

Characteristics
- It supports structured decisions
- It reports on existing operations
- It has little analytical capacity and is relatively flexible
- It has internal focus
- It is used to generate regular reports
- It incorporates both current and historical information

Decision Support System (DSS) is a set of related computer programs and data required to assist with analysis and decision-making within an organisation.

Characteristics
- It assists managers at the tactical level
- It uses formulae and equations to aid mathematical modelling
- It works on real-time basis
- Users input queries to the model through a user interface
- It contains a natural language interpreter for querying the system
- The user is integrated with Data Management and modeling software from the key components.
- Spreadsheet packages can become the tool for the development of a decision support system.

Executive Information System (EIS) is a form of MIS that facilitates and supports senior executives in their decision-making.

Characteristics
- It helps senior managers to make unstructured decisions with many contributing factors
- It is expensive and real-time
- Often used by a small number of restricted senior managers
- It is usually forward looking, rather than historical
- Non expert users may make wrong decision from the analyses

b)   **Advantages of Expert System**
- Potentially available 24 hours a day
- Allows non-experts to make expert decisions
- Offers fast, accurate and consistent advice
- Possesses ability to change input details to explore alternative solutions
- Usually results in reduction in staff salaries
- Reduces number of expert staff employed
- Aids improved allocation of human resources. Experts concentrate on more complex issues
- Can become a competitive advantage
- Multi access can deal with many problems at a time

Disadvantages
- Possible user resistance from higher level experts
- Very high initial capital expenditure
- Technical support required
- System does not automatically learn. It has to be constantly updated by experts.
- Users, as non-experts might give inaccurate advice unconsciously
- Downtime system failures affect all users
- Reliance on EIS might lead to probable reduction in basic skills

c)   **Integrated IT System** describes the scenarios where all modules of the system are linked and function together as a system in a coordinated fashion.

Advantages
- It offers a more complete view
- Enables better informed decisions
- It ultimately leads to a more efficient operation
- It leads to greater customer satisfaction and hence profitability

Disadvantages
- Greater risk that if one module fails, the whole system may fail
- More complex, so it is prone to error
- It is expensive
- May require a greater level of support as the system is likely to be tailored specifically to the organisation.

EXAMINER'S REPORT

The question tests candidates' ability to identify and describe Expert Systems Management Information System and Integrated Information Technology.

About 45% of the candidates attempted the question with fairly good performance. About half of the candidates who attempted the question scored 50% and above of the allocated mark.

In general, those who performed poorly could not describe the concepts.

For improved performance in future, candidates should do better on their preparation

Marking Guide	Marks	Marks
a. 2 Marks each for 3 definitions	6	
1 Mark each for 2 characteristics of each of the Three systems	6	12
b. 1 Mark each for 2 advantages	2	
1 Mark each for 2 disadvantages	2	4
c. 2 Marks for definition	2	
1 Mark for one advantage	1	
1 Mark for one disadvantage	1	4
Total		20

SOLUTION 6

a.i. Computer security incorporates measures needed for the protection of computer systems and the data that they store or access.

ii. Risks to computer software include:
- **Software Corruption:** This can be through virus or worms attack
- **Hacking:** The interception of data during transmission
- **Stealing:** Software can be stolen
- **Program malfunction:** The program can be corrupted
- **Exposure to dust:** this will corrupt the program
- Exposure of system data to unauthorised user
- **Human Errors:** These are errors or mistakes made by individuals. In some cases, they may wipe out records or even an entire file
- **Technical Errors:** These are errors in the computer hardware, software and communication links which can result in the loss or corruption of data or program.
- **Natural Disasters:** Some computer systems may be exposed to risks of natural disaster such as damages from strong wind, floods or earthquarkes
- The loss of key personnel with specialist knowledge about software development will leave the job in the hands of non-experts
- Irregular Power Supply e.g Power Surge, low voltage
- Pirated software. It could destroy the entire software system.

b. <div align="center">**AB COMPANY LIMITED**</div>

Limiting factor - Materials

Product	W	X	Y	Z
	₦	₦	₦	₦
Contribution/unit	8	8	16	14
Materials/unit (kg)	6	18	10	12
Contribution/kg of material	1.33	0.44	1.6	1.17
Ranking	2nd	4th	1st	3rd

Product Mix based on material constraints of 110,000kg

Product	Materials Usage	Balance of materials
Y = 5,000	5,000 x 10kg = 50,000kg	60,000 kg
W = 5,000	5,000 x 6kg = 30,000kg	30,000 kg
Z = 2,500	2,500 x 12 kg = 30,000kg	-

<u>Remark</u>

At this point, the units of materials available have been fully exhausted. Product X will therefore not be produced at all.

EXAMINER'S REPORT

a. The question tests candidates' understanding of the term "Computer Security" as a terminology and the attendant risks associated with computer software.

About 40% of the candidates attempted the question and performance was good as about 60% of them scored 50% and above. A common pitfall was confusing risks in software with those of risks in hardware.

b. The question tests candidates' ability to make decisions in relation to product mix under situation of limiting factors of production.

About 35% of the candidates attempted the question and performance was very poor. About 10% of the candidates who attempted the question scored 50% and above.

The commonest pitfalls among the candidates include:

i) Poor presentation
ii) Inability to determine the contribution per limiting factor
iii) Inability to compute the maximum profit
iv) Inability to determine the right product mix.

For better performance in future, candidates are advised to make the best use of ICAN Study Text and other relevant books.

Marking Guide		Marks	Marks
a.(i)	Definition of computer security	2	
(ii)	1 Mark each for listing 4 risks	4	
	1 Mark each for 4 descriptions	<u>4</u>	<u>10</u>
b.	Product Mix		
	Contribution per unit	1	
	Contribution per kg of material	1	
	Ranking	1	
	Contribution per labour hour	1	
	Ranking	1	

Determination of Product Mix

Product W	1	
Product X	1	
Product Y	1	
Product Z	1	
Total Material available	<u>1</u>	<u>10</u>
Total		**<u>20</u>**

THE INSTITUTE OF CHARTERED ACCOUNTANTS OF NIGERIA

FOUNDATION LEVEL EXAMINATION – NOVEMBER 2018

QUANTITATIVE TECHNIQUES IN BUSINESS

Time Allowed: $3^1/_4$ hours (including 15 minutes reading time)

SECTION A: **MULTIPLE - CHOICE QUESTIONS**   **(20 MARKS)**

INSTRUCTION: YOU ARE REQUIRED TO ANSWER ALL QUESTIONS IN THIS
                         SECTION

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

1.   Which of the following defines Simulation?
   A.   One of its methods employs a random device for identifying what happens at a different point in a simulation
   B.   It is the imitation of the operation of a real-world process or system over time
   C.   Its model normally contains a small number of inter-related variables
   D.   It is a versatile tool for providing information about the operation of complex systems
   E.   It can be used to show the impact of alternative conditions and courses of action

2.   An Ogive is also known as
   A.   Frequency polygon
   B.   Lorenz curve
   C.   Cumulative frequency graph
   D.   Cumulative frequency curve
   E.   Pictogram

3.   Which of the following is **NOT** a property of normal distribution?
   A.   Mean = nP where n is the sample size and P is the probability
   B.   Coefficient of skewness =0
   C.   Coefficient of kurtosis = 3
   D.   Mean= mode= median
   E.   Variance = σ^2

4. The revenue realised from the sale of a product is ₦48,000. if the mark-up is 12%, then cost of sales of the product is
    A. ₦42,958.14
    B. ₦42.857.14
    C. ₦42.758.14
    D. ₦42,658.14
    E. ₦42,518.14

5. In a queue system, the act of a customer leaving the first queue to join another queue in multi-channel queue is known as
    A. Balking
    B. Jockeying
    C. Reneging
    D. Shifting
    E. Re-shifting

6. Given that the coefficient of variation of a group of data is 30 percent with variance of 36, the mean of such data is
    A. 15
    B. 20
    C. 25
    D. 30
    E. 32

7. An Identical pattern which a Time Series appears to follow during successive corresponding months (or quarters) of successive years is known as
    A. Trend
    B. Irregular
    C. Secular
    D. Seasonal
    E. Cyclical

8. The time needed to produce a product is 15 minutes. If the labour is paid ₦20 per hour, then the labour cost per unit produced is
    A. ₦1
    B. ₦2
    C. ₦3
    D. ₦4
    E. ₦5

9. For the following simultaneous equations: $x + 2y = 5$ and $4x - y = 2$, which of the following is true?
   A. $15x - y = 8$
   B. $9x + 3y = 10$
   C. $13x - y = 11$
   D. $15x + y = 13$
   E. $6x + 15y = 21$

10. A survey method in which respondents may refuse to participate is the
    A. Direct observation
    B. Personal interview
    C. Telephone interview
    D. Postal questionnaire
    E. National census

11. If x, y & z are in geometric progression and they are consecutive, then
    A. $z^2 = yx$
    B. $xyz = 1$
    C. $xy = z$
    D. $y^2 = xz$
    E. $x^2 = yz$

12. Expected value is **NOT** correctly defined by which of the following statements?
    A. It takes into consideration the probability or likelihood of each of different possible outcomes as well as its value
    B. As an average value, it gives indication of range or spread of possible outcomes
    C. It is not a valid way of making a decision about the future when the outcome will happen only once
    D. It recognises the risk in decisions based on probabilities of different possible results or outcomes
    E. It is a measurement of weighted average value of possible outcomes

13. Find the third quartile in the table below:

Scores	50-59	60-69	70-79	80-89	90-99
Frequency	8	22	12	5	3

    A. 61.5
    B. 68.5
    C. 68.8
    D. 75.8
    E. 79.5

14. An Audit firm recorded the following numbers (in hundreds) of daily clients for 10 days as; 10, 8, 8, 3, 3, 5, 5, 6, 4 and 2. The average daily number of clients is

   A.　　5.4
   B.　　6.4
   C.　　54.0
   D.　540.0
   E.　640.0

15. The mean deviation of the following numbers: 20, 23, 27, 20, 22, 20, 15, 13 is

   A.　2
   B.　3
   C.　4
   D.　5
   E.　6

16. Which of the following statements does **NOT** describe an annuity?
   A.　Payment to service a loan would start on 1 June 2012 with the last payment on 30 June 2017, if it is 1 June 2012 now
   B.　All payments or receipts under the ordinary annuity are one year earlier than under the annuity due
   C.　Payment to service a loan would start on 31 May 2012 with the last payment on 31 May 2017, if it is 1 June 2012 now
   D.　A series of regular periodic payments of equal amount
   E.　All payments or receipts under the annuity due are one year earlier

17. The following data relate to three different plants:

Plant	A (a) weeks	B (b) cm
1	3	7
2	4	8
3	5	9

   The Coefficient of Correlation between the number of weeks' growth and the height (in centimeters) of a certain plant is
   A.　5.0
   B.　4.0
   C.　3.0
   D.　2.0
   E.　1.0

18. What is the mode of the following frequency distribution?

Wages (₦'000)	F
21 – 41	10
41 – 61	26
61 – 81	58
81 – 101	13
101 – 121	3

A. ₦69,311.69
B. ₦68,311.69
C. ₦67,311.69
D. ₦66,311.69
E. ₦65,311.69

19. Which of the following is **NOT** true about a variable cost?
A. Total variable cost increases in direct proportion to the total volume of output or activity
B. Variable cost is dependent on the fixed cost in a production process
C. Variable cost per unit is often the same amount for each additional unit of output or unit of activity
D. Variable cost of a unit is also called the marginal cost of the unit
E. Variable costs are costs that increase, usually by the same amount, for each additional unit of product that is made in each additional unit of service that is provided

20. The following quarterly sales figures (in thousands of Naira) are recorded for a Sugar Manufacturing Company:

Sales/Quarter				
Year	1	2	3	4
2014	1	5	6	2
2015	6	8	5	8
2016	8	5	1	3

If the equation (based on Q_4 in 2015 as the starting point) of the line of best fit is given as y(sales) = 28.47 + 3.89x, then the trend sales figure for Q_4 in 2017 is

A. 39.59
B. 49.59
C. 59.59
D. 69.59
E. 79.59

SECTION B: OPEN-ENDED QUESTIONS   (80 MARKS)

INSTRUCTION: YOU ARE REQUIRED TO ANSWER FOUR OUT OF SIX QUESTIONS IN THIS SECTION

QUESTION 1

a.   A random sample of 200 adults is classified below according to gender and level of education attained:

	Gender	
Education	Male	Female
Elementary	38	45
Secondary	28	50
University	22	17

If a person is picked at random from this group, find the probability that:

i.   The person is a male, given that the person has elementary education. (5 Marks)

ii.   The person does not have a university degree, given that the person is a female.   (5 Marks)

b.   Assume you are a financial consultant to a company that is involved in a promotional campaign to sell its products. The company wants to award 3 sets of prizes with a total of 100 prizes in all. It wants to adopt a chance procedure in the selection of the prizes. It has a total of 20 coloured balls in an Urn. 2 are red, 4 are blue and the rest are white. These colours correspond to the sets of prizes. Suppose that the two balls are chosen at random from the Urn, one after the other without replacement. With a relevant probability tree diagram, find the probability that:

60

i. One is red and the other is blue (5 Marks)

ii. The second ball is blue given that the first is red (3 Marks)

iii. Both balls are white. (2 Marks)

(Total 20 Marks)

QUESTION 2

a. A nail manufacturing company produces nails at four factories P, Q, R & S. Bags of nails are distributed to four locations X, Y, Z & M, where they are sold to the public. The cost (₦) of transporting one bag of nails from factories to retail outlets varies as shown in the table below:

	P	Q	R	S	Supply
X	7	2	4	5	1,800
Y	8	7	6	4	1,250
Z	2	5	4	9	2,050
M	3	9	4	8	1,050
Demand	1,500	2,000	1,350	1,200	

Obtain the initial total transportation cost using the "North-West Corner" method. (12 Marks)

b. The following quarterly total average weekly productions of toilet tissues (thousands of tonnes) of a tissue manufacturing company are tabulated as follows:

	Quarters			
Year	1	2	3	4
2015	36	39	36	41
2016	40	34	24	30
2017	34	35	34	40

Calculate the Centred Moving Average of Quarter 1, 2016. (8 Marks)

(Total 20 Marks)

QUESTION 3

The monthly income of workers in SAO Company is given below:

Income (₦'000)	16-20	21-25	26-30	31-35	36-40	41-45
Employees' number	3	5	8	12	5	2

Use computational approach to obtain the:

a.   Semi- interquartile range   (16 Marks)

b.   3rd Decile   (4 Marks)

(Total 20 Marks)

QUESTION 4

a.   A father wishes to save money for his 5-year old son's university education abroad. He plans to save a certain amount every 3 months for 11 years which he intends to start immediately so as to achieve his son's dream of getting admission into a foreign university at the age of 16 years. The planned account earns an interest of 8% compounding quarterly. If the balance on the account at the end of 11 years is ₦7,089,271.03 (i.e. the proposed cost of schooling abroad), calculate the amount that will have to be saved every 3 months.   (10 Marks)

b.   A real estate operator who bought hectares of land worth ₦200,000,000 wishes to start a sinking fund based on the future debt repayment arrangement with a royal family. The repayment of ₦200,000,000 will be due in 15 years' time. The annual interest rate is 12% compounding semi-annually. If the first fixed payment arrangement is to be made in 6 months, calculate the fixed amount to be paid every 6 months.   (10 Marks)

(Total 20 Marks)

QUESTION 5

a.   The price (₦) of ordinary 50-kobo shares of XYZ Plc. at the close of business of successively week-ends is as follows:

```
140     127     123   120   134   117   126   128
127     122     106   121   116   135   142   130
138     131     119   129   105   122   120   126
125     127     113   112   130   122   134   125
137     128     121   116   131   114   127   124
```

i. Use TALLY method to group the above into frequency distribution with classes 105 – 115, 116 – 126, etc. (3½ Marks)

ii. Calculate the Median and Quartile Deviation. (12½ Marks)

b. By the administrative record of a hospital, it was discovered that 11% of all patients were admitted for surgical treatment, 18% were admitted for obstetrics, and 3% were treated for both surgical and obstetrics. What is the probability that a patient is admitted for surgery, obstetrics or both?

(4 Marks)
(Total 20 Marks)

QUESTION 6

a. A manufacturing company produces and sells a special household item. The variable production cost per unit of the item is ₦6,500, the variable selling cost per unit is ₦2,000 and the unit selling price of the item is ₦13,500. The total fixed cost of the company is estimated to be ₦4,000,000.

Determine the profit of the company:

i. If 1,050, 850 and 650 units are produced and sold respectively in the three plants. (11 Marks)

ii. Comment on your answer (1 Mark)

b. The demand for a brand of cereals manufactured in the South South zone of Nigeria is found to be normally distributed with a mean of 365 crates per day and standard deviation of 21 crates.

Determine the probability that the demand of this brand of cereals is between 338 and 376 crates per day. (4 Marks)

c. Three friends P, Q, and R partner to invest in a business deal with each person contributing ₦250,000, ₦350,000 and ₦400,000 respectively. It was agreed that the profits or losses from the deal will be shared based on the ratios of their initial contributions. How much will Q get if the profit to be shared at the end of the year is ₦2,500,000. Comment on your answer.

(4 Marks)
(Total 20 Marks)

Formulae

PROBABILITY

A ∪ B = A or B   A ∩ B = A and B (overlap).

$P(B|A) = \dfrac{P(B \cap A)}{P(A)}$ *i.e.* probability of B, given A

Rules of Addition
If A and B are mutually exclusive: $P(A \cup B) = P(A) + P(B)$
If A and B are not mutually exclusive: $P(A \cup B) = P(A) + P(B) - P(A \cap B)$

Rules for Multiplication
If A and B are independent: $P(A \cap B) = P(A) \times P(B)$
If A and B are not independent: $P(A \cap B) = P(A) \times P(B|A) = P(A) \times P(A/B)$

$E(X) = \sum (\text{probability} \times \text{payoff})$

Quadratic Equations
If $aX^2 + bX + c = 0$ is the general quadratic equation, the two solutions (roots) are given by:

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

DESCRIPTIVE STATISTICS
Arithmetic Mean

$$\bar{x} = \frac{\sum x}{n} \qquad \bar{x} = \frac{\sum fx}{\sum f} \quad \text{(frequency distribution)}$$

Standard Deviation

$$SD = \sqrt{\frac{\sum (x - \bar{x})^2}{n}} \qquad SD = \sqrt{\frac{\sum fx^2}{\sum f} - \bar{x}^2} \ - \quad \text{(frequency distribution)}$$

INDEX NUMBERS
Price relative $= 100 \times P_1/P_0$ Quantity relative $= 100 \times Q_1/Q_0$

Price: $\dfrac{\sum w \times \left(\frac{P_1}{P_0}\right)}{\sum w} \times 100$

Quantity: $\dfrac{\sum w \times \left(\frac{Q_1}{Q_0}\right)}{\sum w} \times 100$

TIME SERIES:
Additive Model   Series = Trend + Seasonal + Random

Multiplicative Model   Series = Trend × Seasonal × Random

LINEAR REGRESSION AND CORRELATION

The linear regression equation of Y on X is given by:

$$Y = a + bX \quad \text{or} \quad Y - \bar{Y} = b[X - \bar{X}]$$

Where

$$b = \frac{Covariance\ (XY)}{Variance\ (X)} = \frac{n\sum XY - (\sum X)(\sum Y)}{n\sum X^2 - (\sum X)^2}$$

and

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

or solve

$$\sum Y = na + b\sum X$$
$$\sum XY = a\sum X + b\sum X^2$$

Coefficient of Correlation

$$r = \frac{Covariance\ (XY)}{\sqrt{Var(X).\ Var(Y)}} = \frac{n\sum XY - (\sum X)(\sum Y)}{\sqrt{\left\{n\sum X^2 - (\sum X)^2\right\}\left\{n\sum Y^2 - (\sum Y)^2\right\}}}$$

$$R\ (rank) = 1 - \frac{6\sum d^2}{n(n^2 - 1)}$$

FINANCIAL MATHEMATICS

Compound Interest (Values and Sums)
Future Value S, of a sum of X, invested for n periods, compounded at r% interest

$$S = X(1 + r)^n$$

Annuity
Present value of an annuity of ₦1 per annum receivable or payable for n years, commencing in one year, discounted at r% per annum

$$PV = \frac{1}{r}\left[1 - \frac{1}{(1 + r)^n}\right]$$

Perpetuity
Present value of ₦1 per annum, payable or receivable in perpetuity, commencing in one year, discounted at r% per annum.

$$PV = \frac{1}{r}$$

Annuity Table

Present value of an annuity of 1 i.e. $\dfrac{1-(1+r)^{-n}}{r}$

Where   r = discount rate

          n = number of periods

Discount rate (r)

Periods (n)	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	
1	0·990	0·980	0·971	0·962	0·952	0·943	0·935	0·926	0·917	0·909	1
2	1·970	1·942	1·913	1·886	1·859	1·833	1·808	1·783	1·759	1·736	2
3	2·941	2·884	2·829	2·775	2·723	2·673	2·624	2·577	2·531	2.487	3
4	3·902	3·808	3.717	3·630	3.546	3.465	3·387	3·312	3·240	3·170	4
5	4·853	4·713	4·580	4·452	4·329	4·212	4·100	3·993	3·890	3·791	5
6	5·795	5·601	5·417	5·242	5·076	4·917	4·767	4·623	4.486	4·355	6
7	6·728	6.472	6·230	6·002	5·786	5·582	5·389	5·206	5·033	4·868	7
8	7·652	7·325	7·020	6·733	6·463	6·210	5·971	5·747	5·535	5·335	8
9	8·566	8·162	7·786	7·435	7·108	6·802	6·515	6·247	5·995	5·759	9
10	9·471	8·983	8·530	8·111	7·722	7·360	7·024	6·710	6·418	6·145	10
11	10·368	9·787	9·253	8·760	8·306	7·887	7.499	7·139	6·805	6.495	11
12	11·255	10·575	9·954	9·385	8·863	8·384	7·943	7·536	7'161	6·814	12
13	12·134	11·348	10·635	9·986	9·394	8·853	8·358	7·904	7·487	7·103	13
14	13·004	12·106	11·296	10·563	9·899	9·295	8·745	8·244	7·786	7·367	14
15	13·865	12·849	11·938	11·118	10·380	9·712	9·108	8·559	8·061	7·606	15

(n)	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%	
1	0·901	0·893	0·885	0·877	0·870	0·862	0·855	0·847	0·840	0·833	1
2	1·713	1·690	1·668	1·647	1·626	1·605	1·585	1·566	1·547	1·528	2
3	2.444	2.402	2·361	2·322	2·283	2·246	2·210	2·174	2·140	2·106	3
4	3·102	3·037	2·974	2·914	2·855	2·798	2·743	2.690	2·639	2.589	4
5	3·696	3·605	3·517	3·433	3·352	3·274	3·199	3·127	3·058	2·991	5
6	4·231	4·111	3·998	3·889	3·784	3·685	3·589	3.498	3.410	3·326	6
7	4·712	4·564	4.423	4·288	4·160	4·039	3·922	3·812	3·706	3·605	7
8	5·146	4·968	4.799	4·639	4.487	4·344	4·207	4·078	3·954	3·837	8
9	5·537	5·328	5·132	4·946	4·772	4·607	4.451	4·303	4·163	4·031	9
10	5·889	5·650	5.426	5·216	5·019	4·833	4·659	4.494	4·339	4·192	10
11	6·207	5·938	5·687	5.453	5·234	5·029	4·836	4·656	4.486	4·327	11
12	6·492	6·194	5·918	5·660	5·421	5·197	4·988	4·793	4·611	4.439	12
13	6·750	6.424	6·122	5·842	5·583	5·342	5·118	4·910	4·715	4·533	13
14	6·982	6·628	6·302	6·002	5·724	5.468	5·229	5·008	4·802	4·611	14
15	7·191	6·811	6.462	6·142	5·847	5·575	5·324	5·092	4·876	4·675	15

NORMAL DISTRIBUTION

This table gives the area under the normal curve between the mean and a point Z standard deviations above the mean. The corresponding area for deviations below the mean can be found by symmetry.
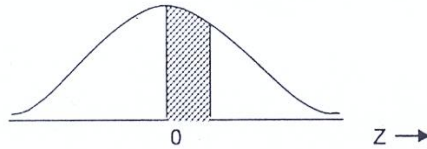
$Z= \dfrac{(x - \mu)}{\sigma}$	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	.0000	.0040	.0080	.0120	.0159	.0199	.0239	.0279	.0319	.0359
0.1	.0398	.0438	.0478	.0517	.0557	.0596	.0636	.0675	.0714	.0753
0.2	.0793	.0832	.0871	.0910	.0948	.0987	.1026	.1064	.1103	.1141
0.3	.1179	.1217	.1255	.1293	.1331	.1368	.1406	.1443	.1408	.1517
0.4	.1554	.1591	.1628	.1664	.1700	.1736	.1772	.1808	.1844	.1879
0.5	.1915	.1950	.1985	.2019	.2054	.2088	.2123	.2157	.2190	.2224
0.6	.2257	.2291	.2324	.2357	.2389	.2422	.2454	.2486	.2518	.2549
0.7	.2580	.2611	.2642	.2673	.2704	.2734	.2764	.2794	.2823	.2852
0.8	.2881	.2910	.2939	.2967	.2995	.3023	.3051	.3078	.3106	.3133
0.9	.3159	.3186	.3212	.3238	.3264	.3289	.3315	.3340	.3365	.3389
1.0	.3413	.3438	.3461	.3485	.3508	.3531	.3554	.3577	.3599	.3621
1.1	.3643	.3665	.3686	.3708	.3729	.3749	.3770	.3790	.3810	.3830
1.2	.3849	.3869	.3888	.3907	.3925	.3944	.3962	.3980	.3997	.4015
1.3	.4032	.4049	.4066	.4082	4099	.4115	.4131	.4147	.4162	.4177
1.4	.4192	.4207	.4222	.4236	.4251	.4265	.4279	.4292	.4306	.4319
1.5	.4332	.4345	.4357	.4370	.4382	.4394	.4406	.4418	.4430	.4441
1.6	.4452	.4463	.4474	.4485	.4495	.4505	.4515	.4525	.4535	.4545
1.7	.4554	.4564	.4573	.4582	.4591	.4599	.4608	.4616	.4625	.4633
1.8	.4641	.4649	.4656	.4664	.4671	.4678	.4686	.4693	.4699	.4706
1.9	.4713	.4719	.4726	.4732	.4738	.4744	.4750	.4756	.4762	.4767
2.0	.4772	.4778	.4783	.4788	.4793	.4798	.4803	.4808	.4812	.4817
2.1	.4821	.4826	.4830	.4834	.4838	.4842	.4846	.4850	.4854	.4857
2.2	.4861	.4865	.4868	.4871	.4875	.4878	.4881	.4884	.4887	.4890
2.3	.4893	.4896	.4898	.4901	.4904	.4906	.4909	.4911	.4913	.4916
2.4	.4918	.4920	.4922	.4925	.4927	.4929	.4931	.4932	.4934	.4936
2.5	.4938	.4940	.4941	.4943	.4945	.4946	.4948	.4949	.4951	.4952
2.6	.4953	.4955	.4956	.4957	.4959	.4960	.4961	.4962	4963	.4964
2.7	.4965	.4966	.4967	.4968	.4969	.4970	.4971	.4972	.4973	.4974
2.8	.4974	.4975	.4976	.4977	.4977	.4978	.4979	.4980	.4980	.4981
2.9	.4981	.4982	.4983	.4983	.4984	.4984	.4985	.4985	.4986	.4986
3.0	.49865	.4987	.4987	.4988	.4988	.4989	.4989	.4989	.4990	.4990
3.1	.49903	.4991	.4991	.4991	.4992	.4992	.4992	.4992	.4993	.4993
3.2	.49931	.4993	.4994	.4994	.4994	.4994	.4994	.4995	.4995	.4995
3.3	.49952	.4995	.4995	.4996	.4996	.4996	.4996	.4996	.4996	.4997
3.4	.49966	.4997	.4997	.4997	.4997	.4997	.4997	.4997	.4997	.4998
3.5	.49977									

MULTIPLE CHOICE SOLUTIONS

SECTION A:

1.   B

2.   D

3.   A

4.   B

5.   B

6.   B

7.   D

8.   E

9.   C

10.   D

11.   D

12.   B

13.   D

14.   D

15.   B

16.   B

17.   E

18.   A

19.   B

20.   C

MULTIPLE CHOICE WORKINGS

4. C. P ——————— 100%
S. P ——————— (100 + 12)% = 112%

$\therefore \quad \dfrac{C.P}{S.P} = \dfrac{100}{112}$

$\therefore \ C.P = \dfrac{S.P \times 100}{112} = \dfrac{48,000 \times 100}{112}$

i.e. C.P = ₦42, 857.14   (B)

6. $C.V = \dfrac{S.D}{mean} \times \dfrac{100}{1}$

$\therefore mean = \dfrac{S.D}{C.V} \times \dfrac{100}{1}$

i.e. $CV = \dfrac{6}{30} \times \dfrac{100}{1} = 20$ (B)

8. Time = 15 minutes $= \dfrac{15}{60}$ hr $= \dfrac{1}{4}$ hr

Labour cost per unit = labour pay per hour x time (hr)

=   ₦20 per hour $\times \dfrac{1}{4}$ hr

=   ₦5   (E)

9. $x + 2y = 5$ (I)
$4x - y = 2$ (II)
(I) + 2× (II) $\Rightarrow$ $9x = 9$
$\therefore x = 1$ (III)

Use (III) in (I) to give
$\qquad x + 2y = 5$
$\qquad 1 + 2y = 5$
$\qquad 2y = 5 - 1$
$\qquad 2y = 4$
$\qquad y = 2$

The equation that is true is
$\qquad 13x - y = 11$
Since $13(1) - 2 = 11$ (C)

11. x, y, z are geometric progression

Then $r = \dfrac{y}{x} = \dfrac{z}{y}$

$\Rightarrow \quad \dfrac{y}{x} = \dfrac{z}{y}$

By cross multiplication

$y^2 = xz$ **(D)**

13.

Scores	F	cf
50 – 59	8	8
60 – 69	22	30
70 – 79	12	42
80 – 89	5	47
90 – 100	3	50

Q_3 position $= \dfrac{3N}{4} = \dfrac{3 \times 50}{4} = 37.5$

Q_3 class $= 69.5 - 79.5$

$\therefore$ Class size $= 79.5 - 69.5 = 10$

$$Q_3 = L_{Q_3} + \left(\dfrac{\dfrac{3N}{4} - F_{Q_3}}{f_{Q_3}} \right) c$$

$\therefore Q_3 = 69.5 + \left(\dfrac{37.5 - 30}{12} \right) 10$

$Q_3 = 69.5 + 6.25$

$Q_3 = 75.8$ **(D)**

14. Average daily number of clients

$$= \dfrac{(10 + 8 + 8 + 3 + 3 + 5 + 5 + 6 + 4 + 2)10}{10}$$

$$= \dfrac{54 \times 100}{10}$$

$$= 5.4 \times 100$$

$$= 540$$ **(D)**

15. $\bar{x} = \dfrac{\sum x}{n}$

$\bar{x} = \dfrac{20 + 23 + 27 + 20 + 22 + 20 + 15 + 13}{8}$

$\bar{x} = \dfrac{160}{8} = 20$

Mean deviation $= \dfrac{\sum |x - \bar{x}|}{n}$

$= \dfrac{|20 - 20| + |20 - 20| + |27 - 20| + |20 - 20| + |22 - 20| + |20 - 20| + |15 - 20| + |13 - 20|}{8}$

$= \dfrac{0 + 3 + 7 + 0 + 2 + 0 + 5 + 7}{8}$

$= \dfrac{24}{8}$

$= 3$ **(B)**

17.

A	B	A^2	B^2	AB
3	7	9	49	21
4	8	16	64	32
5	9	25	81	45
$\sum A =$	$\sum B =$	$\sum A^2 =$	$\sum B^2 =$	$\sum AB =$
12	24	50	194	98

$r = \dfrac{n\sum AB - \sum A \sum B}{\sqrt{\left(n\sum A^2 - \left(\sum A\right)^2\right)\left(n\sum B^2 - \left(\sum B\right)^2\right)}}$

$r = \dfrac{3(98) - (12)(24)}{\sqrt{\left(3(50) - (12)^2\right)\left(3(194) - (24)^2\right)}}$

$r = \dfrac{294 - 288}{\sqrt{(150 - 144)(582 - 576)}}$

$r = \dfrac{6}{\sqrt{(6)(6)}} = \dfrac{6}{6}$

$r = 1$ **(E)**

18. $\text{Mode} = L_{mo} + \left(\dfrac{\Delta_1}{\Delta_1 + \Delta_2} \right) c$

Model class = 61 – 81   (with highest frequency of 58)

$\text{Mode} = 61 + \left(\dfrac{58 - 26}{(58 - 26) + (58 - 13)} \right) 20$

$\text{Mode} = 61 + \left(\dfrac{32}{32 + 45} \right) 20$

$\text{Mode} = 61 + \left(\dfrac{32}{77} \right) (20)$

= 61 + 8.31169

= 69.31169

∴ the mode = N69,311.69   (A)

20. Since the starting point is Q4 in 2015 i.e.

Year	Quarter	X value
2015	Q4	0
2016	Q1	1
2016	Q2	2
2016	Q3	3
2016	Q4	4
2017	Q1	5
2017	Q2	6
2017	Q3	7
2017	Q4	8

$\Rightarrow x = 8$

$y(sales) = 28.47 + 3.89x$

= 28.47 + (3.89) (8)

= 28.47 + 31.12

= 59.59   (C)

SECTION B:

SOLUTION 1

1a. Let M = male
Let F = female
Let A = elementary education
Let B = secondary education
Let C = college education.

(i) $P(M|A) = \frac{P(M \cap A)}{P(A)}$

But $P(M \cap A) = \frac{n(M \cap A)}{n(Adults)} = \frac{38}{200} = 0.19$

$P(A) = \frac{n(A)}{n(Adults)} = \frac{38+45}{200} = \frac{83}{200} = 0.415$

$\therefore P(M|A) = \frac{0.19}{0.415} = 0.4578$

(ii) $P(\text{not } C|F) = \frac{P(\text{not } C \cap F)}{P(F)}$

where $P(notC \cap F) = \frac{45+50}{200} = \frac{95}{200} = 0.475$

$P(F) = \frac{n(F)}{n(Adults)} = \frac{112}{200} = 0.56$

$\therefore P(not\ C/F) = \frac{0.475}{0.56} = 0.848$

ALITER FOR QUESTION 1

(a) i. From the table

n (Elementary education)	= 38 + 45
	= 83
n (Male with elementary education)	= 38
P (Male/has elementary education)	= $\frac{38}{83}$

ii.

n (Female with no university education)	= 45 + 50
	= 95
n (Female)	= 45 + 50 + 17
	= 112
P (No University education/female)	= $\frac{95}{112}$

b. Let R = red ball is chosen
Let B = blue ball is chosen   Outcomes
Let W = white ball is chosen

R	RR
B	RB
W	RW
R	BR
B	BB
W	BW
R	WR
B	WB
W	WW
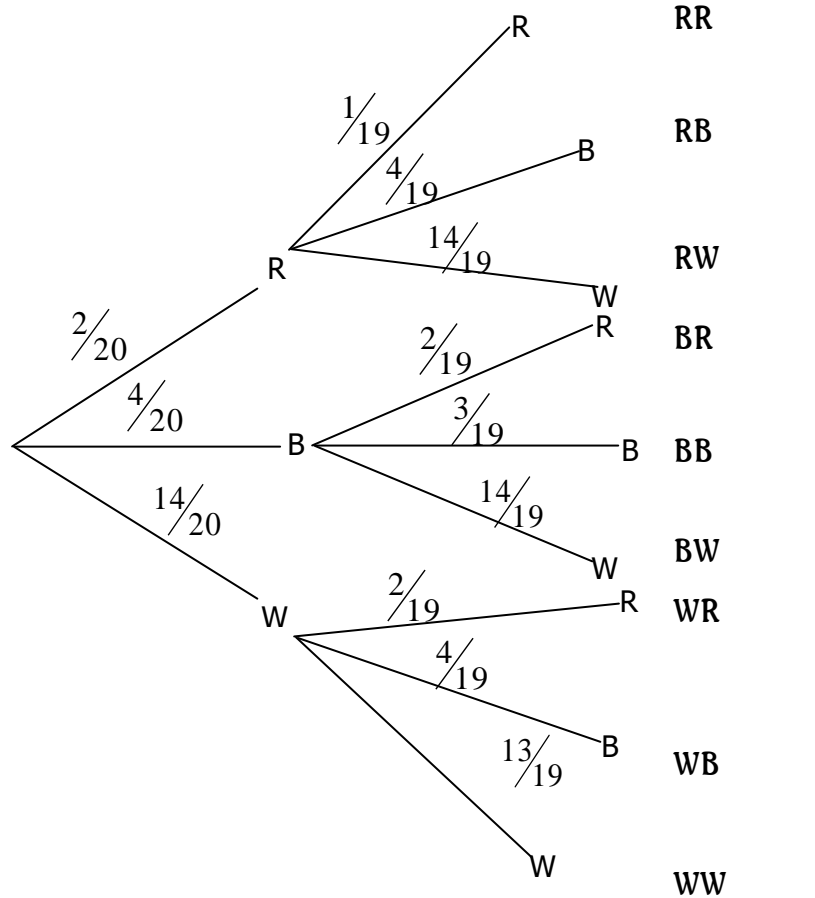
(i)   P (1 red, 1 blue) $= P(RB) + P(BR)$ (order does not matter)

$$= \left(\frac{2}{20} \times \frac{4}{19} \right) + \left(\frac{4}{20} \times \frac{2}{19} \right)$$

$$= \left(\frac{2}{95} + \frac{2}{95} \right)$$

$$= \frac{4}{95} \ or \ 0.0421$$

(ii)   From probability tree diagram,
P(second ball is blue given that the first is red)

$$= P(B/R) = \frac{4}{19} \ or \ 0.211$$

(iii)   P (both white)

$$= P \text{ (WW)}$$

$$= \frac{14}{20} \times \frac{13}{19}$$

$$= \frac{182}{380} \times \frac{91}{190}$$

EXAMINER'S REPORT

The question tests candidates' knowledge of the application of probability (conditional probability) and representation of probability using tree diagram. About 95% of the candidates attempted the question out of which 20% scored above average.

The candidates showed little understanding of the question. Inability of the candidates to differentiate between the gender total and education total was the commonest pitfall. Candidates are advised to consult the Study Text and other relevant materials for better performance.

MARKING GUIDE

			MARKS	MARKS
(a)	i.	Correct representation of all the events	1	
		Correct formula for $P(M/A) = \frac{P(M \cap A)}{P(A)}$	1	
		Correct value for $n(M \cap A)$ i.e. 38	½	
		Correct value for $P(M \cap A)$ i.e. 0.19 or $\frac{38}{200}$	½	
		Correct value for $n(A)$ i.e. 83	½	
		Correct value for $P(A)$ i.e. 0.415 or $\frac{83}{200}$	½	
		Correct expression for (PM/A) i.e. $\frac{0.19}{0.415}$	½	
		Correct answer i.e. 0.4578 or $\frac{38}{83}$	½	5
	ii.	Correct formula for $P(\text{not } c/F) = \frac{P(\text{not } C \cap F)}{P(F)}$	1	
		Correct addition i.e. $45 + 50$	½	
		Correct value i.e. 95	½	
		Correct value of $P (\text{not } C \cap F)$ i.e. 0.475 or $\frac{95}{200}$	1	
		Correct value of $n (F)$ i.e. 112	½	
		Correct value of $P (F)$ i.e. 0.56 or $\frac{112}{200}$	½	
		Correct expression for $P (\text{not } c/F)$ i.e. $\frac{0.475}{0.56}$	½	
		Correct answer i.e. 0.848 or $\frac{95}{112}$	½	5

ALITER TO QUESTION 1

(a) i. Correct addition for n (elementary education) i.e. 38 + 45   1

       Correct value of n (elementary education) i.e. 83   1

       Correct value of n (male with elementary education) i.e. 38   1

       P (Male/has elementary education) i.e. $\frac{38}{83}$ <u>2</u>   **5**

     ii. Correct addition for n (female with no University education i.e. 45 + 50   1

       Correct value for n(female with no University education) i.e. 95   ½

       Correct addition for n (female) i.e. 45 + 50 +17   1

       Correct value for n (female) i.e. 112   ½

       Correct value of P (no University education/female) i.e. $\frac{95}{112}$ <u>2</u>   **5**

1b   i. Correct probability tree diagram showing all the 4 branches with their respective correct probabilities (each branch ½ mark)   2

       Correct interpretation of probability i.e. P(RB) + P (BR)   1

       Correct expression for P(RB) i.e. $\frac{2}{20}$ x $\frac{4}{19}$ from tree diagram   ½

       Correct expression for P (BR) i.e. $\frac{4}{20}$ x $\frac{2}{19}$ from the tree diagram   ½

       Correct addition i.e. $\frac{2}{95} + \frac{2}{95}$ ½

       Correct answer i.e. $\frac{4}{95}$ <u>½</u>   **5**

     ii. Correct value of P(B/R) from the tree diagram i.e. $\frac{4}{19}$ 3   **3**

     iii. Correct expression for P(WW) from the tree diagram i.e. $\frac{14}{20}$ x $\frac{13}{19}$ 1

       Correct answer i.e. $\frac{91}{190}$ <u>1</u>   **2**

                                                                  <u>**20**</u>

SOLUTION 2

(a)

	P		Q		R		S		Dummy		Supply
X	1,500	7	300	2		4		5		0	~~1800~~ 300 0
Y		8	1,250	7		6		4		0	~~1250~~ 0
Z		2	450	5	1350	4	250	9		0	~~2050~~ ~~1600~~ 250 0
M		3		9		4	950	8	100	0	~~1050~~ ~~100~~ 0
Demand	~~1,500~~ 0		~~3000~~ ~~1700~~ ~~450~~ 0		~~1,350~~ 0		~~1200~~ ~~950~~ 0		~~100~~ 0		6,150

$\therefore$ Initial transportation cost (N)

$= 7(1,500) + 2(300) + 7(1,250) + 5(450) + 4(1,350) + 0(100) + 9(250) + 8(950)$

$= 10,500 + 600 + 8.750 + 2,250 + 5,400 + 2,250 + 7,600$

$= \underline{37,350}$

(b)

C_1	C_2 Quarter	C_3 Production	C_4 4-quarter moving Total	C_5 Moving average $C_4 \div 4$	C_6 Centred moving Total	C_7 Centred moving average $C_6 \div 2$
1		36				
2		39				
			152	38		
3		36			77	38.5
			156	39		
4		41			76.75	38.375
			151	37.75		
5	$Q_1(2016)$	40			72.5	36.25*
			139	34.75		
6		34				
7		24				
8		30				
9		34				
10		35				
11		34				
12		40				

∴ The centred Moving average of Quarter 1, 2016 is 36,250 tonnes.

ALITER TO QUESTION 2(b)

QUARTER	Year	PRODUCTION Y	(a) 4-quarter moving total	(b) Centre moving total	(c) Centre moving average c= b ÷ 8
1	2015	36			
2	2015	39			
			152		
3	2015	36		308	38.5
			156		
4	2015	41		307	28.38
			151		
1	2016	40			
				290	36.25*
2	2016	34	139		
3	2016	24			
4	2016	30			
1	2017	34			
2	2017	35			
3	2017	34			
4	2017	40			

The centered moving average of quarter 1, 2016 is 36,250 tonnes.

EXAMINER'S REPORT

The question tests candidates' knowledge of application of transportation problem using North-West corner method and Time Series analysis using Moving Average Method. About 70% of the candidates attempted the question out of which over 40% scored above average. The candidates demonstrated little understanding of the question based on their performance.

The identified commonest pitfalls are inability of the candidates to balance the transportation problem by introducing vertical dummy and positioning the 4-

quarter moving total properly, amongst others. The candidates are encouraged to consult the Study Texts and other relevant textbooks recommended by ICAN.

MARKING GUIDE

		Marks	Marks
(a)	For creating a dummy column with 100 as demand	1	
	Correct allocations for 8 cells (½ mark for each allocation)	4	
	Evidence of cancellation on supply column (at least 2 correct cancellations)	1	
	Evidence of cancellation on demand row (at least 2 correct cancellations)	1	
	Correct product of transportation unit cost and each of the 8 allocations (½ each error)	2	
	Correct transportation cost for each of the 8 allocations (-½ each error)	2	
	Correct answer i.e. ₦37,350	<u>1</u>	
			12

(b)	For correct first four values in the 4-quarter moving total column (C_4) (-1 each error)	3	
	For correct first four values in the 4-quarter moving average column (C_s), first three values in the centre moving total column (C_6) and first three values in the centre moving average column (C_7). (Making it 10 entries altogether and -½ each error)	4	
	For correct answer i.e. 36,250 (tone)	1	8
			20

ALITER QUESTION 2 B

	For correct first four values in the 4-quarter moving total column (a) (-1 each error)	3	
	For correct first three values in the centre moving total column (b) and first three values in the centre moving average column (c) (making it 6 entries altogether and -1 each error)	4	
	For correct answer i.e. 36,250 (tone)	<u>1</u>	8

SOLUTION 3

(a)   From the given table, the cumulative frequency and appropriate income class intervals are as thus

Income class Interval	Frequency (f)	Cumulative frequency CF
15.5 – 20.5	3	3
20.5 – 25.5	5	8
25.5 – 30.5	8	16

30.5 -35.5	12	28
35.5 – 40.5	5	33
40.5 – 45.5	2	35

For semi-interquartile range (SIQR), we need 1st quartile (Q_1) and 3rd quartile (Q_3).

Q_1 is in the class containing the $\left(\dfrac{N}{4}\right)^{th} = 8.75^{th}$ item which falls to class interval 25.5 -30.5.

$$Q_1 = L_1 + \left(\dfrac{\dfrac{N}{4} - F_1}{f_1}\right)c$$

where $L_1 = 25.5$, $f_1 = 8$, $F_1 = 8$, $N = 35$, $c = 30.5 - 25.5 = 5$

$$Q_1 = 25.5 + \left(\dfrac{8.75 - 8}{8}\right) \times 5 = 25.96875$$

$$Q_3 = L_3 + \left(\dfrac{\dfrac{3N}{4} - F_3}{f_3}\right)c$$

where

Q_3 position $\left(\dfrac{3N}{4}\right)^{th} = 3 \times \left(\dfrac{35}{4}\right)^{th} = 26.25^{th}$ item which falls to class interval 30.5 -35.5.

$L_3 = 30.5$, $f_3 = 12$, $F_3 = 16$, $N = 35$, $c = 35.5 - 30.5 = 5$

$$Q_1 = 30.5 + \left(\dfrac{26.25 - 16}{12}\right) \times 5 = 34.771$$

The S.I.Q.R $= \dfrac{Q_3 - Q_1}{2}$

$$= \dfrac{34.77083 - 25.96875}{2} = 4.40104$$

The SIQR for the workers = ₦ (4.40104 × 10,000) = ₦44,010.40

(b) 3rd Decile $= L_{D_3} = L_3 + \left(\dfrac{\dfrac{3N}{10} - F_{D_3}}{f_{D_3}}\right)c$

D_3 position $= 5 \times \left(\dfrac{35}{10}\right) = 10.5^{th}$ item which falls into class interval 25.5 – 30.5.

where c = **5**, $f_{D_3} = 8$, $F_{D_3} = 8$, $L_{D_3} = 25.5$.

$$D_3 = 25.5 + \left(\frac{10.5 - 8}{8}\right) \times 5 = 27.0625$$

3rd decile of the worker's income is ₦ (27.0625 x 10,000) = ₦270,625

EXAMINER'S REPORT

The question tests candidates' knowledge and understanding of measures of dispersion using business data. About 80% of the candidates attempted the question out of which about 60% scored above average marks.

Based on the performance, it shows that candidates understood the question very well. The candidates' commonest pitfalls were their inability to compute the income class size, locate the lower and upper boundaries correctly. There is room for improvement if the candidates fully prepare for examination by reading the ICAN Study Text and other relevant textbooks.

MARKING GUIDE

		Marks	Marks
(a)	Correct income class interval column (at least 2 correct)	1	
	Correct cumulative frequency column (-½ each error)	2½	
	Correct Q_1 position i.e. 8.75	½	
	Correct Q_1 class i.e. 25.5 – 30.5	½	
	Correct Q_1 lower class boundary i.e. $L_1 = 25.5$	½	
	Correct frequency of Q_1 i.e. $f_1 = 8$	½	
	Correct cumulative frequency before Q_1 class i.e. $F_1 = 8$	½	
	Correct total frequency i.e. N = 35	½	
	Correct class size i.e. C = 5	½	
	Correct substitution into Q_1 formular	1	
	Correct Q_1 value i.e. 25.96875	½	
	Correct Q_3 position i.e. 26.25	½	
	Correct Q_3 class i.e. 30.5 – 35.5	½	
	Correct Q_3 lower class boundary i.e. $L_3 = 30.5$	½	
	Correct class size i.e. C = 5	½	
	Correct frequency of Q_3 i.e. $f_3 = 12$	½	
	Correct cumulative frequency before Q_3 class i.e. $F_3 = 16$	½	
	Correct substitution into Q_3 formular	1	
	Correct Q_3 value i.e. 34.771	½	
	Correct substitution into semi-interquartile range (SIQR) formular	1	
	Correct SIQR value i.e. 4.40104	½	
	Correct multiplication of SIQR value by 1000	½	
	Correct answer i.e. ₦4,401.04	<u>1</u>	<u>16</u>

(b)   Correct D_3 position i.e. 10.5   ½
          Correct D_3 class i.e. 25.5 – 30.5   ½
          for any of the two i.e. f = 8 or F = 8   ½
          Correct substitution into D_3 formular   1
          Correct D_3 value i.e. 27.0625   ½
          Correct multiplication of D_3 value by 1000   ½
          Correct answer i.e. ₦27,062.50k   ½   <u>4</u>
                                                                                                    20

SOLUTION 4

(a)   n = 4 x 11 = 44

$$r = \frac{8\%}{4} = \frac{0.08}{4} = 0.02$$

x = ?, S_n = ₦7,089,271.03

Using the formula

$$S_n = \frac{x(1+r)^n - 1}{r}(1+r)$$

$$7{,}089{,}271.03 = \frac{x\left[(1+0.02)^{44} - 1\right]}{0.02}(1+0.02)$$

$7{,}089{,}271.03 \times 0.02 = x\ [(1.02)^{44}\text{-}1](1.02)^1$

$$\frac{7{,}089{,}271.03 \times 0.02}{1.02} = x(2.39005 - 1)$$

$$x = \frac{7{,}089{,}271.03 \times 0.02}{1.02 \times 1.39005} = \frac{141{,}785.4206}{1.417851}$$

$x = 100{,}000.23$

The amount to be saved every 3 months is ₦100,000.23

(b) $n = 2 \times 15 = 30$

$$r = \frac{12\%}{2} = \frac{0.12}{2} = 0.06$$

$x = ?,$ S_n = ₦200,000,000

Using the formula

$$S_n = \frac{x\left[(1+r)^n - 1\right]}{r}$$

$$\therefore 200{,}000{,}000 = \frac{x\left[(1+0.06)^{30} - 1\right]}{0.06}$$

$200{,}000{,}000 \times 0.12 = x\ [(1.06)^{30}\text{-}1]$

$200{,}000{,}000 \times 0.12 = x\ (5.74349 - 1)$

$$x = \frac{200{,}000{,}000 \times 0.12}{4.74349}$$

$x = 2{,}529{,}782.92$

The amount to be fixed every six months is ₦2,529,782.92.

EXAMINER'S REPORT

The question tests candidates' understanding of Mathematics of Finance (Annuity and Sinking fund) in business. About 15% of the candidates that attempted the question, scored above average. About 85% of the candidates that attempted the question did not make use of appropriate formulae. The major pitfall was their inability to calculate the appropriate interest rates (that is compounded quarterly and semi-annually). For better performance, candidates are advised to use the Institute's Study Text very well before future examinations.

MARKING GUIDE

		Marks	Marks
a.	Correct n value i.e. 44	½	
	Correct r value i.e. 0.02	½	
	Correct s_n value i.e. ₦7,089,271.03	½	
	Correct s_n formular	1	
	Correct substitution into s_n formular	½	
	Correct simplication to get 7,089,271.03 x 0.02	1	
	Correct simplication to get $\frac{7,089,271.03 \times 0.02}{1.02}$	1	
	Correct further simplication to get 2.390.05	1	
	Correct expression for x i.e $\frac{7,089,271.03 \times 0.02}{1.02 \times 1.39005}$	1	
	Correct simplication of the expression for x to get $\frac{141.785.4206}{1.417.851}$	1	
	Correct x value i.e. 100,000.23	1	
	Correct conclusion	<u>1</u>	10
b.	Correct n value i.e. 30	1	
	Correct r value i.e. 0.06	1	
	Correct S_n value i.e. ₦200,000,000	½	
	Correct S_n formular	1	
	Correct substitution into S_n formular	1	
	Correct simplicafication to get 200,000,000 x 0.12	1	
	Correct further simplication to get 1.06	½	
	Correct further simplication to get 5.74349	1	
	Correct expression for x i.e $\frac{2,000,000,000 \times 0.06}{4.74349}$	1	
	Correct x value i.e. 2,529,782.92	1	
	Correct conclusion	<u>1</u>	<u>10</u>
			<u>20</u>

SOLUTION 5

a.

(i)

Price of ordinary 50-kobo shares	Frequency		
	Tally	f	cf
105 – 115	̶H̶H̶	5	5
116 - 126	̶H̶H̶ ̶H̶H̶ ̶H̶H̶ ll	17	22
127 – 137	̶H̶H̶ ̶H̶H̶ ̶H̶H̶	15	37
138 – 148	lll	3	40

(ii)

Position of the median $= \left(\dfrac{N}{2}\right)^{th} = \left(\dfrac{40}{2}\right)^{th} = 20^{th}$

Its class is **115.5 – 126.5**

$\therefore \text{Median} = 115.5 + \dfrac{(20-5)11}{17}$

$= 115.5 + \left(\dfrac{20-5}{17}\right)11$

$= 115.5 + \dfrac{15 \times 11}{17} = 115.5 + 9.71 = 125.21$

Quartile deviation $= \dfrac{Q_3 - Q_1}{2}$

Position of $Q_1 = \left(\dfrac{N}{4}\right)^{th} = \left(\dfrac{40}{4}\right)^{th} = 10^{th}$

Its class is **115.5 – 126 .5**

$Q_1 = 115.5 + \left(\dfrac{10-5}{17}\right) \times 11 = 115.5 + \dfrac{5 \times 11}{17} = 118.74$

Position of $Q_3 = \left(\dfrac{3N}{4}\right)^{th} = \left(\dfrac{3 \times 40}{4}\right)^{th} = 30^{th}$

Its class is **126.5 – 137.5**

$\therefore Q_3 = 116.5 + \dfrac{(30-22) \times 11}{15} = 116.5 + \dfrac{8 \times 1}{15} = 126.5 + 5.87 = 132.37$

$$\therefore \text{Quartile deviation} = \frac{132.37 - 118.74}{2}$$

$$= \frac{132.63}{2}$$
$$= 6.815$$

(b)   Let A represent a patient admitted to the hospital receiving surgical treatment.
And B represent a patient admitted to the hospital receiving obstetrics treatment} Then, from the given information, we have
       P(A) = 0.11
       P(B) = 0.18

But the probability of the event that a patient receives both obstetrics and surgical treatment is given as
P(A∩B) = 0.03

The event that a patient admitted to the hospital receives either surgical treatment, obstetrics treatment, or both is the union of A and B. The probability of A∪B is given by the additive rule of probability stated as

       P(A∪B) = P(A) + P(B) - P(A∩B)
       = 0.11 + 0.18 - 0.03 = 0.26
Thus, 26% of all the patients admitted to the hospital receive either surgical treatment, obstetrics treatment, or both.

EXAMINER'S REPORT

The question tests candidates' ability to calculate measure of locations and quartile deviation.

About 99% of the candidates attempted the question. The candidate's performance on the question was about 12 Marks out of 20 Marks allocated to it. The candidates demonstrated very good understanding of the question and also displayed very good ability to calculate the measures. The commonest pitfalls in answering the question were their inability to determine the class boundaries and class size. Adequate preparation is very essential for better performance in future.

MARKING GUIDE

		Marks	Marks
a(i)	Correct last two classes i.e. 127-137 and 138-148	½	
	Correct Tally column (at least 2 correct)	1	
	Correct frequency column (½ mark each)	2	3½

(ii)	Correct median position i.e. 20	½
	Correct median class i.e 115.5-126.5	½
	Correct median lower class boundary i.e. 115.5	½
	Correct frequency of the median i.e. 5	½
	Correct cumulative frequency before the median class i.e 17	½
	Correct class size i.e 11	½
	Correct substitution into median formula	½
	Correct median value i.e 125.21	½
	Correct Q_1 position i.e. 10	½
	Correct Q_1 class i.e 115.5 – 126.5	½
	Correct Q_1 lower class boundary i.e 115.5	½
	Correct frequency of Q_1 i.e 5	½
	Correct cumulative frequency before Q_1 class i.e 17	½
	Correct substitution into Q_1 formula	½
	Correct Q_1 value i.e. 118.74	½
	Correct Q_3 position i.e 30	½
	Correct Q_3 class i.e 126.5 – 137.5	½
	Correct Q_3 lower class boundary i.e 126.5	½
	Correct frequency of Q_3 i.e 15	½
	Correct cumulative frequency before Q_3 class i.e 22	**½**
	Correct substitution into Q_3 formula	½
	Correct Q_3 value i.e. 132.37	½
	Correct substitutive into Quartile deviation formula	1
	Correct Quartile deviation value i.e 6.815	½ 12½

b.	Correct value of P (A) i.e 0.11	½
	Correct value of P (B) i.e 0.18	½
	Correct value of P (A ∩ B) i.e 0.03	1
	Correct substitution into P (A ∪ B) formula	1
	Correct answer i.e 0.26	1 <u>4</u>
		<u>20</u>

SOLUTION 6

(a)　(i)　**Calculation of contribution per unit**

	(₦)
Selling price per unit	13,500
Variable production cost per unit	(6,500)
Variable selling cost per unit	<u>(2,000)</u>
Contribution per unit	<u>5,000</u>

	Plant 1	Plant 2	Plant 3
	1,050 units	850 units	650 units
	(₦)	(₦)	(₦)
Sales revenue			
(₦13,500 per unit)	14,175,000	11,475,000	8,7750,00
Variable cost			
(₦8,500 per unit)	(8,925,000)	(7,225,000)	(5,525,000)
Contribution			
(₦5,000 per unit)	5,250,000	4,250,000	3,250,000
Fixed costs	(4,000,000)	(4,000,000)	(4,000,000)
Profit (loss)	1,250,000	250,000	(750,000)

(ii)   Plant 1 and Plant 2 resulted in a profit of ₦1,250,000 and ₦250,000 respectively while Plant 3 incurred a loss of ₦750,000 due to the fact that the total contribution is not large enough to cover the fixed costs.

ALITER TO QUESTION 6(a)

$\Pr ofit = TR - TC$

$TR =$ **Price per unit** $\times$ **quantity** $= pq$

$= 13,500q$

$TC = FC + VC$

$= FC + (TVC)q$

$= 4,000,000 + (6,500 + 2,000)q$

$= 4,000,000 + (8,500)q$

$\Pr ofit = 13,500q - (4,000,000 + 8,500q)$

$= 13,500q - 4,000,000 - 8,500q$

$\Pr ofit = 5,000q - 4,000,000$

For $q = 1,050$ **for Plant 1**

$\Pr ofit = 5,000(1,050) - 4,000,000$

$= ₦1,250,000.00$

For $q = 850$ **for Plant 2**

$\Pr ofit = 5,000(850) - 4,000,000$

$= ₦ 250,000.00$

For $q = 650$ **for Plant 3**

$\Pr ofit = 5,000(650) - 4,000,000$

$= - ₦750,000.00$

Since profit is negative for $q = 650$

There is a loss of ₦750,000.00

There is profit for both plants 1 and 2 while plant 3 had a loss of ₦750,000.00

(b) $Z_1 = \dfrac{338 - 365}{21} = -1.29$

From table, p (x < 338) = 0.5 – 0.04015 = 0.0985

$Z_2 = \dfrac{376 - 365}{21} = 0.5238$

From table, p (x > 376) = 0.5 – 0.1985 = 0.3015

Probability that the demand is between 338 and 376 crates $= 1 - (0.0985 + 0.3015) = 0.6.$

ALITER 1 FOR QUESTION 6(b)

The standard normal formular, $Z = \dfrac{x - \mu}{\sigma}$

If $\mu = 365, \sigma = 21,$ then

$Z = \dfrac{x - \mu}{\sigma} = \dfrac{x - 365}{21}$

The probability that the demand is between 338 and 376 is

$P \ (338 < x < 376) = P\left(\dfrac{338 - 365}{21} < \dfrac{x - 365}{21} < \dfrac{376 - 365}{21}\right)$

$= P \ (\text{-}1.29 < Z < 0.52)$

$= P \ (Z < 0.52) - P \ (Z < -1.29)$

From the standard normal table, $(Z < 0.52) - P \ (Z < -1.29)$
= (0.5 + 0.1985) – (0.5 – 0.4015)

= 0.6985 – 0.0985

= 0.6

ALITER 2 TO QUESTION 6(b)

$Z = \dfrac{x - \mu}{\sigma}$

$Z_1 = \dfrac{338 - 365}{21} = -1.29$

From table, this gives **0.4015**

$$Z_2 = \frac{376-365}{21} = 0.5238$$

From table, this gives **0.1985**

-1.29   0.5238
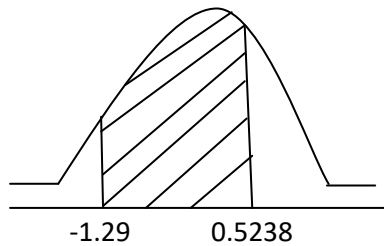
$\therefore$ required probability = **0.4015+0.1985**
$$= \textbf{0.6}$$

(c)   The ratio of the initial contributions

250,000 : 350,000 : 400,000

= 25 : 35 : 40

= 5 : 7 : 8

Sum of the parts = **5 + 7 + 8 = 20**

$$\text{Q's share } = \frac{7}{20} \times \frac{2,500,000}{1}$$

$$= \text{\textnaira}875,000$$

ALITER TO QUESTION 6(c)

The ratio of the initial contributions is
250,000 : 350,000 : 400,000

Total = **250,000 + 350,000 + 400,000**
= 1,000,000

$$\text{Q's share } = \frac{350,000}{1,000,000} \times \frac{2,500,000}{1}$$
$$= \text{\textnaira}875,000$$

EXAMINER'S REPORT

The question tests candidates' knowledge and understanding of financial mathematics. About 55% of the candidates' attempted the question. The performance of the candidates was below 30%. This shows that the candidates did not demonstrate good understanding of the question.

The major pitfalls were the inability of the candidates to calculate contribution per unit before finding the profit or loss, their poor understanding of the computation of Z-scores and the use of normal table. Candidates are encouraged to attend Tuition House lectures and consult ICAN Study Text for better performance in future.

MARKING GUIDE

		Marks	Marks
a.(i)	Correct value of contribution per unit i.e ₦5,000	½	
	Correct sales revenue for plant 1 i.e ₦14,175,000	1	
	Correct sales revenue for Plant 2 i.e ₦11,475,000	1	
	Correct sales revenue for Plant 3 i.e ₦8,775,000	1	
	Correct variable cost for Plant 1 i.e ₦8,925,000	1	
	Correct variable cost for Plant 2 i.e ₦7,225,000	1	
	Correct variable cost for Plant 3 i.e ₦5,525,000	1	
	Correct contribution for Plant 1 i.e ₦5,250,000	1	
	Correct contribution for Plant 2 i.e ₦4,250,000	1	
	Correct contribution for Plant 3 i.e ₦3,250,000	1	
	Correct profit for Plant 1 i.e ₦1,250,000	½	
	Correct profit for Plant 2 i.e ₦250,000	½	
	Correct loss for Plant 3 i.e ₦750,000	½	11
ii.	Correct conclusion		1
b.	Correction substitution into Z formula i.e $\underline{338\text{-}365}$		
	$\qquad\qquad\qquad$ 21	½	
	Correct z value i.e - 1.29	½	
	Correct z value for P(x<338) from Normal table i.e 0.5		
	− 0.4015 = 0.0985	½	
	Correct substitution into Z formula i.e. $\frac{376-365}{21}$	½	
	Correct Z value i.e. 0.52	½	
	Correct Z-value for for P (x >376) from normal table i.e.		
	0.5 − 0.1985 = 0.3015	½	
	Correct probability expression for between 338 and 376		
	creates i.e. 1 − (0.0985 + 0.3015)	½	
	Correct answer i.e. 06	½	4

c.   Correct ratio of initial contributions i.e. 250,000 :
      350,000 : 400,000   1
      Correct simplified ratio i.e. 5 : 7 : 8   ½
      Correct sum of the ratios i.e. 20   1
      Correct Q's share expression   1
      Correct Q's share value i.e. ₦875,000   ½   4
                                                                          20

ALITER QUESTION 6 a

i.   Correct total revenue function i.e. TR = 13,500q   1
      Correct average variable cost per unit i.e 6,500+2000
      = 8,500   ½
      Correct variable cost function i.e 8500q   1
      Correct Total cost expression i.e TC = 4,000,000 +
      8500q   1
      Correct substitution of TR and TC into profit function
      Formula   1
      Correct simplification of profit function   1
      Correct profit function i.e 5000q-4,000,000   1
      Correct substitution of q = 1050 for Plant 1 in profit   1
      Function
      Correct profit for Plant 1 i.e ₦1,250,000   ½
      Correct substitution of q=850 for Plant 2 into profit
      Function   1
      Correct profit for Plant 2 i.e ₦250,000   ½
      Correct substitution of q = 650 for Plant 3 into profit   1
      function
      Correct loss for Plant 3 i.e ₦75,500   ½   10

ii.   Correct conclusion   1
      ALITER 1 Q6(b)
      Correct interpretation of probability i.e P(338<x<376)   ½
      Correct conversion from Normal to standard Normal i.e
      $P\left[\left(\dfrac{338-365}{21}<z<\dfrac{371-365}{21}\right)\right]$ ½
      Correct z value of -1.29   ½
      Correct z value of 0.52   ½
      Correct z value from Normal table i.e 0.50 + 0.1985   ½
      Correct z value from Normal table i.e 0.5 - 04015   ½
      Correct subtraction of the resulting z – value from
      Normal   ½
      table i.e 0.6985 – 0.0985   ½
      Correct answer i.e 0.6   ½   4½

ALITER 2 of Q6(b)

Correct substitution into z formular to get $z_1 = \dfrac{338 - 365}{21}$ ½

Correct z_1 value i.e – 1.29   ½

Correct z_1 value from the normal table i.e 0.4015   ½

Correct substitution into z formular to get $z_2 = \dfrac{376 - 365}{21}$ ½

Correct z_2 value i.e 0.52   ½   2½

THE INSTITUTE OF CHARTERED ACCOUNTANTS OF NIGERIA

FOUNDATION LEVEL EXAMINATION - NOVEMBER 2018

BUSINESS AND FINANCE

Time Allowed: 3¼ hours (including 15 minutes reading time)

SECTION A: MULTIPLE - CHOICE QUESTION   (20 MARKS)

INSTRUCTION: YOU ARE REQUIRED TO ANSWER ALL QUESTIONS IN THIS
                  SECTION

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

1.   Ability to give orders or guidance to others and expect the orders to be obeyed or the guidance to be followed is known as
     A.   Influence
     B.   Authority
     C.   Militancy
     D.   Coercion
     E.   Delegation

2.   The objective of market skimming is to maximise
     A.   The marketing strategy
     B.   The gross profit per unit sold
     C.   The net profit per unit sold
     D.   Effectiveness
     E.   Efficiency

3.   Which of the following is **not** a financial instrument traded on the capital market?
     A.   Development stock
     B.   Debenture
     C.   Bonds
     D.   Stabilisation securities
     E.   Warrant

4.   Which of the fundamental principles of ethical behaviour states that an accountant must **not** allow his professional judgement to be affected by conflict of interest and undue influence from others?
     A.   Integrity
     B.   Technical standards
     C.   Confidentiality
     D.   Objectivity
     E.   Professional behaviour

5. The process whereby a relatively small number of new shares are sold to selected institutional investors is called
A. Offer for sale by tender
B. Placing
C. Underwriting of new shares
D. Offer for subscription
E. Rights issues

6. IFAC code establishes a minimum world-wide code of ethical conduct for accountants. Which of the following represents the full meaning of "IFAC"?
A. International Federation of Accountancy
B. International Federation of Accounting
C. International Federation of Accountants
D. Intermediate Federation of Accountancy
E. Intermediate Federation of Accounting

7. An arrangement between rival firms in an industry to operate the same policies on pricing is known as
A. Licensing
B. Strategic group
C. Pricing System
D. Cartel
E. Franchising

8. As suggested by the strategic clock, what strategy would be required to sell a product that offers above-average benefits for a higher-than-average price?

A. Differentiation strategy
B. Focus differentiation strategy
C. Hybrid strategy
D. Focus hybrid strategy
E. Low cost strategy

9. Bonds issued by companies that are considered high credit risk is called

A. Debenture
B. Company stock
C. Junk bonds
D. Gilts edge securities
E. Active bonds

10. The main categories of stakeholder group in an organisation includes the following, **except**
   A. Directors and Senior managers
   B. Other employees
   C. Entrepreneurs
   D. Shareholders
   E. Society as a whole

11. Financial management is about .... the financial affairs of an organisation to ensure that the organisation achieves its objectives
   A. Planning and controlling
   B. Controlling
   C. Planning and executing
   D. Planning or controlling
   E. Planning, controlling and reviewing

12. Financial management has a strong accounting element, in large organisations it is usual to find professional accountants being involved in
   A. Financial accounting and management accounting
   B. Financial accounting, management accounting and financial management
   C. Financial accounting and financial management
   D. Management accounting and financial management
   E. Financial accounting, mathematical accounting and financial management

13. Which of the following is **not** a discounted cashflow (DCF) investment appraisal technique?
   A. Net present value
   B. Internal Rate of Return
   C. Profitability index
   D. Discounted payback period
   E. Payback period

14. Agency theory was developed by Jensen and Meckling (1976) who defined the agency relationship as a form of contract between
   A. Company's owners and its managers
   B. Company's directors and the employees
   C. Company and its directors
   D. Company's managers and its employees
   E. Company's employees and line managers

15. Which of the following is **not true** about business/project financing?
    A. Borrowers of finance include companies, governments and individuals
    B. Providers of finance are individuals, companies and other organisations with surplus funds to invest
    C. It is not possible for borrowers to obtain funding directly from an investor
    D. It is usual for borrowers and investors/lenders to be brought together by financial intermediaries in the financial markets
    E. A financial intermediary is a person or organisation that operates between savers (investors) and borrowers

16. Which of the following is **not** a characteristic of Theory Z?
    A. Long term employment
    B. Collective decision making
    C. Individual responsibility
    D. Non-specialised career path
    E. Slow promotion

17. The objectives formulated by the strategic planners should be 'SMART'. Which of the following is **not** part of the 'SMART' acronym?
    A. Sponsored
    B. Measurable
    C. Agreeable
    D. Realistic
    E. Time-bound

18. In Mendelow's power/interest matrix, what approach would be required to deal with a stakeholder who has very little power but a strong interest?
    A. Ignore the stakeholder
    B. Minimal effort is required to inform the stakeholder
    C. Keep the stakeholder informed
    D. Keep the stakeholder satisfied
    E. Obtain and keep the stakeholder's support

19. Short-term financial instruments in the money market are instruments that have .... to maturity when they are issued
    A. One year or less
    B. Two years
    C. One year or more
    D. One year and eighteen months
    E. Three years

20. In the BCG matrix, businesses that have low market shares in a high growth market are classified as .... businesses
    A. Coward
    B. Cashless
    C. Landmark
    D. Benchmark
    E. Question mark

SECTION B: OPEN - ENDED QUESTIONS (80 MARKS)

INSTRUCTION: YOU ARE REQUIRED TO ANSWER FOUR OUT OF SIX QUESTIONS IN THIS SECTION

QUESTION 1

Companies can acquire assets through lease arrangement instead of buying with equity or debt capital.

a. State and explain briefly the **two** main classifications of leases. (5 Marks)

b. Explain **two** features of each of the classifications in (a) above. 6 Marks

c. State **four** advantages and **two** disadvantages of debt finance to the investor.
(9 Marks)
(Total 20 Marks)

QUESTION 2

Economies of scale leads to overall decrease in unit cost as output increases.

a. State and explain **four** examples of economies of scale. (6 Marks)

b. Explain briefly the terms below with appropriate illustrative graphs.
    i. Fixed cost
    ii. Variable cost
    iii. Marginal cost
    iv. Total cost (14 Marks)
(Total 20 Marks)

QUESTION 3

a. Professional accountants and managers are expected to be resolute when they are faced with ethical considerations. State **five** examples of work situations where a professional accountant might be faced with ethical considerations.
(10 Marks)

b. List **three** methods of issuing new shares for cash and briefly explain any **two**.
(10 Marks)
(Total 20 Marks)

QUESTION 4

a. There are many models for dealing with both internal and external factors that affect businesses. Identify and explain briefly the factors included in the **SWOT** model. (6 Marks)

b. Ogifa Farms Limited, an agro-allied business, was incorporated in Nigeria to trade in rice. Rice is a staple food in Nigeria and the company had enjoyed good patronage since its establishment. In recent time, the company has been experiencing dwindling market.   Scarcity of foreign currency and high exchange rate in Nigeria have been blamed for this development. The recent policy of the Federal Government which emphasised local production of rice has compounded the company's problem.

You are required to identify and explain **four** threats and **three** opportunities available to the business. (14 Marks)
(Total 20 Marks)

QUESTION 5

Abraham Maslow propounded the hierarchy of needs theory of motivation to explain that the need at a lower level is dominant until it has been satisfied. Assuming you want to apply this theory to motivate your subordinates:

a. Identify and explain briefly the **two** 'higher order' intrinsic needs that must be met before the other hierarchical needs are satisfied. (4 Marks)

b. Explain, with examples, the significance of Maslow's theory. (6 Marks)

c. State **five** limitations of Maslow's hierarchy of needs theory. (10 Marks)
(Total 20 Marks)

QUESTION 6

Working in a business organisation affects behaviour of employees in different ways.

a.   Explain briefly **four** behavioural patterns of workers in an organisation.
(6 Marks)

b.   Assuming you have been invited by a fairly large auditing firm to give a talk on the characteristics of workgroups. Use a tabular model to illustrate **seven** differences between formal and informal workgroups that can exist in an organisation.
(14 Marks)
(Total 20 Marks)

MULTIPLE CHOICE ANSWERS
SECTION A

1.   B

2.   B

3.   D

4.   D

5.   B

6.   C

7.   D

8.   B

9.   C

10.   C

11.   A

12.   B

13.   E

14.   A

15.   C

16.   D

17.   A

18.   C

19.   A

20.   E

EXAMINER'S REPORT

This section consists of twenty multiple –choice questions which covered the entire syllabus. The questions were attempted by all the candidates and performance was good. About 70% of the candidates scored 50% and above of the marks obtainable. For improved performance in future examinations, candidates are advised to study the Institute's study text adequately.

MARKING GUIDE

20 MCQs x 1 mark   20 marks

SECTION B

SOLUTION 1
(a)   Lease finance is classified into two categories namely:

i.   Operating lease; and

ii. Finance lease.

Operating lease: This is a contract wherein the owner, called the lessor, permits the user, called the lessee, to use an asset for a particular period which is shorter than the economic life of the asset without any transfer of ownership rights.

Operating lease offers a means of acquiring assets for a fairly short term. The lessor makes available an asset to the lessee upon payment of agreed rental charges. Here, the lessor takes full responsibility for maintenance, repairs and insurance of the lease.

Finance lease: This is a non-cancellable contract between a lessor and a lessee. It extends over most of the estimated economic life of the asset and provides for rental payments covering the full cost of the asset, plus interest.

(b)   i.   The main features of an operating lease

- In an operating lease, the risk, reward and ownership is not transferred to the lessee at any point in time
- Operating lease is for a short term
- The non-current asset involved may not necessarily be a new asset
- The lessor is responsible for the maintenance and insurance cost of the asset
- Unlike finance lease, rent is expensed and the non-current asset involved is not reported in the statement of financial position.

ii.   The main features of a finance lease are:

- The finance lease company acquires a new non-current asset, such as machine, equipment, motor vehicle, aeroplane or ship;
- The purchase cost of the asset is paid by the lease finance company;
- The lease finance company (the lessor) and the company (the lessee) enter into a lease agreement which covers all or most of the economic life of the asset;
- Under the terms of the lease arrangement, the lessee agrees to make a number of regular fixed payments to the lessor over the term of the lease. These payments are allowable expenses for tax purposes;
- Long-term in nature;
- The lessee is responsible for insurance, running and maintenance costs of the asset;
- The lessee is the legal owner of the asset, and can claim tax allowances (capital allowances) on the asset; and
- Lease finance is usually reported in the statement of financial position (balance sheet) of the lessee as a debt obligation.

(c) i.   Advantages of debt finance to the investor

- The loan is usually redeemable, so that the principal sum will be returned.
- The interest has to be paid by the company, irrespective of how well or badly the company performed.
- The debt might be legally secured on assets of the company.
- The debt holder can force the company to sell the assets on which the loan is secured if the company defaults in the payment of interest and repayment of the principal.
- Debt ranks higher than equity in the winding up process of a company and the liquidation of the assets.

ii.   Disadvantages of debt finance to the investor

- The returns from investing in debt bonds are fairly static.
- In contrast to equity investments, shareholders benefit when the company is successful.
- The investor may have to wait to recover their fund until the maturity of the debt finance.

EXAMINER'S REPORT

The question tests candidates' knowledge of leases and debt finance.

About 40% of the candidates attempted the question and about 16% of them scored above average mark. The commonest pitfall of the candidates was their inability to differentiate between finance and operating lease. Candidates are advised to study this area of the syllabus adequately when preparing for future examinations.

MARKING GUIDE

Q1(a)	½ mark each for two categories of finance lease listed and 2 marks for each category explained		
	2 x 2½ marks		5 marks
(b)	1½ marks for each feature of finance lease explained		
	2 x 1½ marks		3 marks
(c)	1½ marks for each advantage of debt finance explained		
	4 x 1½ marks		6 marks
	1½ marks for each disadvantage of debt finance explained		
	2 x 1½ marks		<u>3 marks</u>
	Total		<u>**20 marks**</u>

SOLUTION 2

a.   Economies of scale include the following:

i.   Technical: Ability to generate better efficiency through larger quantities of output;

ii.   Managerial: Ability to employ specialist managers to increase efficiencies;

iii.   Trading: Ability to buy and sell in bulk at lower prices;

iv.   Financial: Ability to demand better interest rates from financiers with more assets as collateral; and

v.   External: Firm clustering together leads to development of specialised labour force.

b.   Fixed costs

Fixed costs are items of cost that remain the same in total during a time period, no matter how many units are produced, and regardless of the volume or scale of activity. Fixed costs are also called period costs, because they are fixed for a given period of time. Fixed costs include salaries of administrative staff, depreciation of machinery, etc

Below is a graphical representation of fixed cost.

Cost

TFC

Volume of output
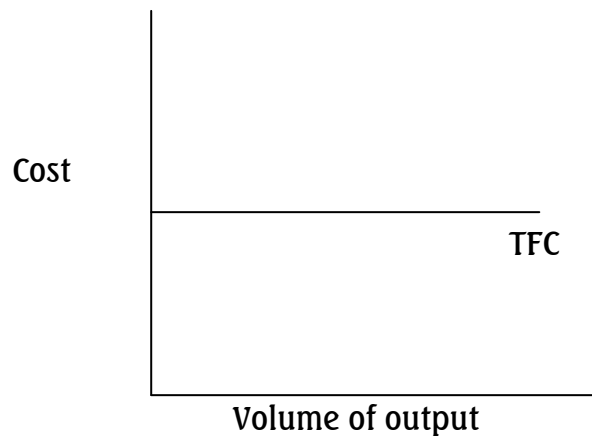
Fig 1: Total fixed costs

ii.   Variable costs

Variable costs are costs that increase usually by the same amount, for each additional unit of product that is made or each additional unit of service provided. This means that total variable costs (TVC) increase in direct proportion to the total volume of output or activity. Variable costs include cost of raw materials, cost of direct labour, and running expenses. The average variable costs (AVC) per unit can be found by dividing the total variable costs by the number of units produced i.e, $AVC = TVC/Q$.

The total variable costs and variable costs per unit are depicted in Figures II and III below:
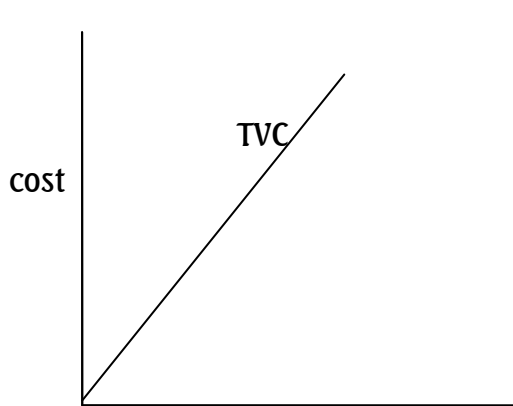
Fig II: Total variable costs   Fig III: Variable costs per units
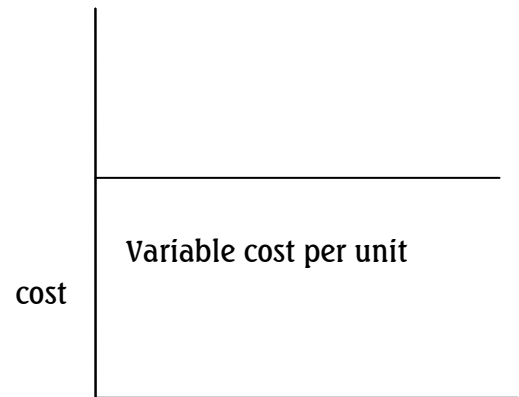
ii. Marginal cost

Marginal cost (MC) is the increase in total costs as a result of extra unit of output produced, i.e. it is the change in TC that results from a unit change in output. Marginal cost is associated with the variable cost. This is expressed mathematically as

$$MC= \Delta TC/\Delta Q$$
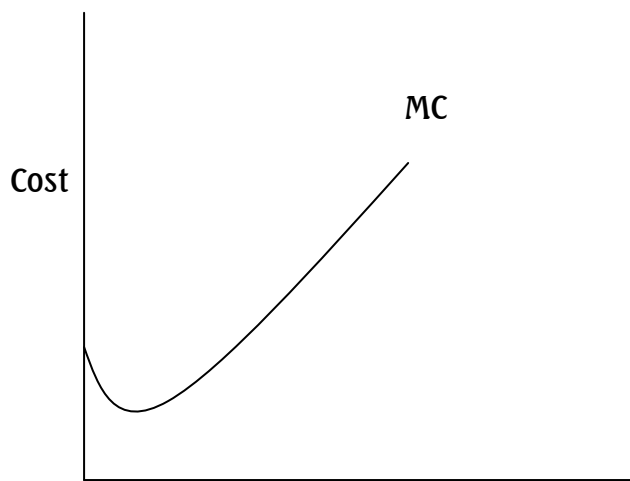
Fig IV: Marginal cost

iv.   Total costs

Total costs are divided into two categories: fixed costs and variable costs. The total costs to produce each level of output are the sum of the fixed costs and the variable costs. This will vary from firm to firm as each will have different fixed costs and variable costs. Total costs are graphically represented as:
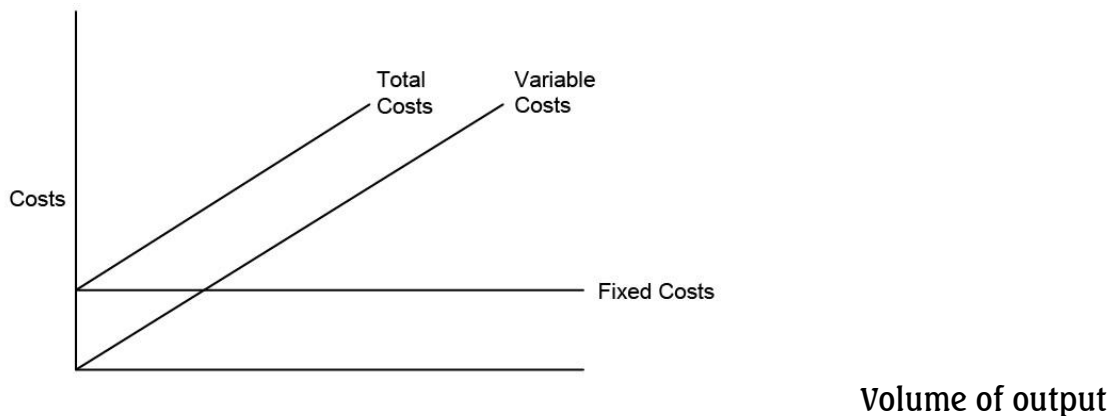
Fig V: Total costs

EXAMINER'S REPORT

The question tests candidates' knowledge of economies of scale and economic terms relating to cost.

About 76% of the candidates attempted the question and 21% of these candidates scored above 50%.

Commonest pitfall observed was candidates' inability to distinguish between marginal and variable costs. Candidates are advised to make use of ICAN study text in preparing for future examinations.

MARKING GUIDE

Q2 (a) ½ mark each for four examples of economies of scale
        stated and 1 mark for each example explained
            4 x 1½ marks   6 marks

   (b) 3½ marks each for explaining the stated economic terms
        (with appropriate Illustrative graphs)
            4 x 3½ marks   14 marks
                                        Total   20 marks

SOLUTION 3

(a) Work situations where a professional accountant might be faced with ethical considerations include situations where he/she:

i.   Performs work which he/she does not have the appropriate knowledge or experience to perform;

ii. Produces information which is incorrect or misleading;

iii. Completes work to a deadline that is too tight to allow the task to be completed with the necessary standard of professional care;

iv. Takes a decision on a matter in which he/she has personal interest, such as where he has a family or personal relationship with the client;

v.   Advises a company that is in direct competition with an existing client; and

vi. Supports two clients who are in competition with one another.

(b) i. Methods of issuing new shares for cash are:
- Public Offer;
- Placing; and
- Rights issue.

ii. **Public Offer:** A public offer is an offer of new shares to the general investing public. Because of the high costs involved with a public issue, it normally involves large share issues intended to raise a substantial amount of money from investors. A company whose shares intend are already traded on the stock market cannot make a public offer of new shares without shareholders' permission (which is unlikely to be obtained, because existing shareholders would suffer a dilution of their interest in the company. Companies whose shares are already traded on the stock market may use a rights issue when it wishes to issue new shares for cash in order to forestall dilution of their shareholders' interest. A public offer might be used to bring the shares of a company to the stock market for the first time. A public offer of the shares of a company coming to the stock market for the first time is called initial public offer (IPO).

iii.   **Placing:** A placing involves the sale of a relatively small number of new shares, usually to selected investment institutions. A placing raises cash for the company when the company does not need a large amount of new capital. A placing might be made by companies whose shares are already traded on the stock exchange, but which now wish to issue a fairly small amount of new shares. The prior approval of existing shareholders for a placing is mandatory in this circumstance.

iii.   **Rights issue:** A rights issue is a large issue of new shares to raise cash, by a company whose shares are already traded on the stock market. A rights issue involves offering the new shares to existing shareholders in proportion to their existing shareholding. For example, if a company has 8 million shares in issue already, and now wants to issue 2 million new shares to raise cash, a rights issue would involve offering the existing shareholders one new share for every four shares that they currently hold (2 million: 8 million = a 1 for 4 rights issue).

EXAMINER'S REPORT

The question tests candidates' knowledge of ethical issues and methods of issuing new shares for cash. 82% of the candidates attempted the question, however, about 7% scored above average mark.

The commonest pitfall among the candidates was that they concentrated only on public issue, neglecting other methods. For future examinations, candidates are advised to make use of ICAN study texts.

MARKING GUIDE
Q3 (a) 2 marks each for five examples of the required work
          situations of ethical issues stated
          5 x 2 marks   10 marks

   (b) 1 mark each for methods of issuing new shares for cash
          listed
          3 x 1 marks   3 marks

          3½ marks each for two methods of issuing new shares
          for cash explained
          2 x 3½ mark   7 marks
                                              Total   20 marks

SOLUTION 4

SWOT MODEL

(a)

1. **S – Strengths:** The strengths of a company are the internal factors that depict its competitive advantage *i.e.* those competencies that the company has in comparison with its competitors that enhance its chances of attaining its set objectives.

2. **W – Weaknesses:** These are those internal vulnerabilities or factors that put the company at a disadvantage in its quest to achieve its objectives.

3. **O – Opportunities:** These are developments in the environment that provide chances for the organisation, so that it can achieve its objectives more successfully.

4. **T –Threats:** These are factors in the environment that might prevent the organisation from achieving its business objectives.

(b) 1. **Threats**

i. **Government regulations:** The new government regulation for local production of rice is a threat to Ogifa Farms' business as government may place a ban on importation of rice into Nigeria, thereby putting them out of business.

ii. **Scarce foreign exchange:** The scarcity of foreign exchange implies that Ogifa Farms does not get the needed foreign exchange for its foreign rice importation, even if, rice importation is not banned.

iii. **Rising foreign exchange rate:** Where foreign exchange is sourced at a high cost, this will in turn raise the price of the products which may result in a decrease in the demand for rice.

iv. **New entrants:** Local production of rice may pose a new threat as new companies who had erstwhile stayed away from rice business because they do not have the wherewithal to import it may see this as an opportunity to enter into the business.

v.   **Competition:** If competition increases, it will definitely reduce the market share of Ogifa Farms as new entrants venture into the business.

vi. **Dwindling markets:** The fact that in recent times, the company has been experiencing dwindling market is a threat to the growth and survival of Ogifa Farms. If the trend is not arrested, it may lead to total collapse of the business.

2. **Opportunities**
    i.   **Large market:** Ogifa Farms had a large market in Nigeria because of the large population of the country coupled with the fact that rice is a staple food

    ii. **Availability of product in the country:** The fact that Ogifa Farms can now source its products from within the country will ease the pressure of seeking foreign exchange for its imports.

    iii. **Constant demand:** Rice being a staple food in Nigeria and so its demand will continue whether it is produced in the country or not.

    iv. **Government policy:** The company should exploit the opportunity available through government deliberate policy to encourage local rice production by going into rice farming, considering the threats identified with the importation of rice.

EXAMINER'S REPORT

The question tests candidates' knowledge of SWOT Model. About 87% of the candidates attempted the question and 59% of them scored above 50%.

The major pitfall of the candidates was that they answered the question without referring to the case scenario.

Candidates are advised to make use of ICAN study texts in the preparations for future examinations.

MARKING GUIDE

Q4 (a)   ½ mark each for the factors in SWOT model identified
              and 1 mark for each factor explained
              4 x 1½ marks   6 marks

      (b)   1 mark for each threat or opportunity identified and
              1 mark for brief explanation thereof
              (Maximum of 7 points for both threats and opportunities)
              7 x 2 marks   <u>14 marks</u>
                                        Total   <u>20 marks</u>

SOLUTION 5

a.   **The TWO 'higher order' in-built needs that must be met before other hierarchical needs are satisfied are:**
   i.   A need for freedom of inquiry and expression: Social conditions must allow free speech and encourage justice, honesty and fairness; and

   ii.   A need for knowledge and understanding: A need to explore and experiment.

b.   The significance of Maslow's theory:
   - Management can use it to improve the motivation of employees. For example, management needs to note that pay is extremely important, because it satisfies employees' basic/physiological needs. Hence, employees must be paid enough to satisfy their basic/physiological needs; and

   - Management must make sure that lower-level needs are satisfied before they try to motivate employees with initiatives aimed at the satisfaction of higher-level needs. For example, management must make sure that their employees feel that they are part of a group (belonginess needs) before satisfying their needs for esteem and status.

c.   The limitations of Maslow's hierarchy of needs theory are:
   - Individuals have diverse needs, and they are not necessarily in the hierarchical order as suggested by Maslow;

   - The same need may cause different reactions and responses from different individuals;

   - It is a 'content theory' of motivation. Hence, it does not explain the strength of motivation, nor the effect of motivation on people's perceptions;

- Maslow does not show any link between self-fulfilment and improved organisational performance;
- Maslow's theory fails to recognise that self-actualisation is not always Possible;
- Maslow's model appears vague, as it fails to consider the nature of self-actualisation or self-fulfilment needs; and
- Many individuals may seek to satisfy several different needs at the same time.

EXAMINER'S REPORT

The question tests candidates' understanding of hierarchy of needs theory of motivation by Abraham Maslow.

About 48% of the candidates attempted the question, but only 8% of them scored above 50% of the marks allotted to the question.

Candidates' commonest pitfalls were their inability to clearly state the significance and limitations of the theory.

Candidates are advised to utilise the ICAN study text when preparing for future examinations.

Marking Guide

		Marks
a.	Identifying the **two** 'higher order' in-built needs that must be met before the other hierarchical needs are satisfied attracts 1 Mark each	2
	Explaining briefly the **two** 'higher order' intrinsic needs that must be met before the other hierarchical needs are satisfied attracts 1 Mark each	<u>2</u>
		<u>4</u>
b.	Explaining the significance of Maslow's theory attracts 1½ Marks each for any two points	3
	Examples of the significance of Maslow's theory attracts 1½ Marks each for any two points	<u>3</u>
		<u>6</u>
c.	Stating any **five** limitations of Maslow's hierarchy of needs theory 2 Marks each	<u>10</u>
	Total	<u>**20**</u>

SOLUTION 6

a.   Behavioural patterns of staff in organisations are:

- Some individuals who have pride in their work will try to do their job to the best of their abilities;

- Some individuals lack initiative, hence, they need to be told what to do by their bosses; while those that have initiative will do their jobs happily with little or no supervision;

- Some individuals cannot work in isolation, or on their own, rather they prefer to work together with their colleagues. While others work better in isolation or alone;

- Some individuals enjoy communicating with other people, and like this aspect of their work, while other individuals do not communicate well with other people, and so might concentrate on their work and even refuse to join in conversations in the workplace; and

- Some individuals take their jobs with all seriousness because they believe that when they are at work, their employer expects them to perform the jobs for which they are paid. Hence, they will focus fully on performing their jobs excellently. While some others do not take their jobs seriously.

b.   The differences between formal and informal groups include the following:

	Formal Workgroups	Informal Workgroups
1.	The workgroup has a formal existence.	The informal group does not exist in a formal or clearly-defined sense.
2.	Membership of a formal group is 'permanent'.	Membership of an informal work team depends on the social interactions between members.
3.	Members of the formal work team are appointed by management	An informal workgroup come together through the social interaction of its members.
4.	A formal workgroup has a clear set of work tasks with specific objectives already set by management.	An informal workgroup is not organised by management and does not have a specific objective or task.
5.	Workgroup members have formal roles and job titles.	Informal workgroup members do not have set roles or titles
6.	Management assesses the	An informal workgroup is not

	performance of a formal workgroup.	assessed.
7.	A formal workgroup has a formal decision-making structure.	Informal workgroups might not make any decision that affects their work.
8.	Decisions are commonly taken by the group leader.	Decisions are taken by the group i.e. the group members will reach a collective agreement.
9.	Formal workgroups work together through established procedures and systems.	Informal workgroups can be much more efficient (than formal workgroup) in communicating information.

EXAMINER'S REPORT

The question tests candidates' knowledge of behaviour patterns of workers in organisations and comparison of formal and informal groups.

About 68% of the candidates attempted the question, but only 4% of these candidates scored above average mark. The commonest pitfall of candidates was their inability to identify differences between formal and informal groups.

Candidates are advised to make use of ICAN study texts in their future preparation.

Marking Guide

		Marks
a.	Explaining briefly any **four** ways in which individuals can behave in organisations attracts 1½ Marks each.	6
b.	Tabular presentation of the differences between formal and informal workgroups. 2 Marks for each set of the differences for a maximum of **seven** tabulated differences.	14
	Total	20

THE INSTITUTE OF CHARTERED ACCOUNTANTS OF NIGERIA

FOUNDATION LEVEL EXAMINATION – NOVEMBER 2018

BUSINESS LAW

Time Allowed: 3¼ hours (including 15 minutes reading time)

SECTION A: **MULTIPLE-CHOICE QUESTIONS**   **(20 MARKS)**

INSTRUCTION: YOU ARE REQUIRED TO ANSWER ALL QUESTIONS IN THIS SECTION

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

1.   Which of the following is **not** a Statute of General Application?
     A.   English Companies Act, 2006
     B.   Infants Relief Act, 1874
     C.   Partnership Act, 1890
     D.   Sale of Goods Act, 1893
     E.   Wills Act, 1837

2.   A person that is charged to court for an offence is the
     A.   Complainant
     B.   Prosecutor
     C.   Accused
     D.   Magistrate
     E.   Plaintiff

3.   Matters relating to taxation of companies and other persons that are subject to federal taxation are for the
     A.   Supreme Court
     B.   Court of Appeal
     C.   State High Court
     D.   Federal High Court
     E.   Tax Tribunal

4. A commonly acceptable mode of conduct or behavior in a given society is called
   A. Laws
   B. Ethics
   C. Contracts
   D. Codes
   E. Practices

5. A company that is unable to pay its debts when due is
   A. Buoyant
   B. Solvent
   C. Rich
   D. Insolvent
   E. Liquidated

6. A situation in which the court will disregard the distinction between the company and its members is called
   A. Subrogation
   B. Alienation
   C. Lifting the veil of incorporation
   D. Merger
   E. Allowing the company to exist

7. A person who fraudulently takes anything or fraudulently converts it to his own use is guilty of
   A. Trespass
   B. Stealing
   C. Conversion
   D. Battery
   E. Taking by trick

8. A person who knowingly makes a false document or writing with intent that it may in anyway be used or acted upon as genuine is guilty of the offence of
   A. Forgery
   B. Altery
   C. False declaration
   D. Faking
   E. Falsification

9. The law that sets the limit to cash payments that could be made or accepted over the counter transactions is
    A.   Bill of Exchange Act
    B.   Banking Act
    C.   Money Laundering (Prohibition) Act
    D.   EFCC Act
    E.   ICPC Act

10. A partnership in which all the members are involved in the management of the firm's business is
    A.   General Partnership
    B.   Open Partnership
    C.   Limited Partnership
    D.   Supreme Partnership
    E.   Sleeping Partnership

11. A voluntary agreement between two or more persons which confers legally enforceable rights, duties and liabilities on the parties is a/an
    A.   Contract
    B.   Accord
    C.   Concordance
    D.   Warranty
    E.   Condition

12. A period of trial for a new employee during which the employer assesses the skill and suitability of employee for the work of the employer is called
    A.   Examination period
    B.   Probation period
    C.   Inquisition period
    D.   Probing period
    E.   Trial period

13. An electronic means that indicates either that a person adopted the contents of an electronic message or that the person who claims to have written a message is the one who wrote it is called
    A.   Email
    B.   Text Message
    C.   Facebook
    D.   File Manager
    E.   E-Signature

14. The title of goods during the currency of a hire purchase agreement is in the
    A. Hirer
    B. Hiree
    C. Owner
    D. Court
    E. Bailiff

15. The document by which an insurer obtains material information that will form the basis of a contract of insurance with the insured is called
    A. Enquirer's note
    B. Proposal form
    C. Insurance paper
    D. Preliminary memorandum
    E. Agreement paper

16. In torts, the remedy available to the plaintiff against the tortfeasor is
    A. Lien
    B. Compensation
    C. Indemnity
    D. Subrogation
    E. Contribution

17. The right of an agent to be reimbursed by the principal for expenses incurred in performing his authorised duties is called
    A. Stipend
    B. Adjustment of right
    C. Indemnity
    D. Salary
    E. Commission

18. In a contract of sale of goods, property in specific goods passes to the buyer
    A. At the time the parties have agreed
    B. On identification of the sample
    C. On identification of the goods
    D. As prescribed by customs
    E. As required by customers

19. The effect of endorsement on a bill by the endorser to the endorsee is
    A. Transfer of title to the endorsee
    B. Transfer of influence
    C. Notice to the guarantor
    D. Passing of goods
    E. Certification of deal

20. Which of the following is **not** a right of a trust beneficiary?
    A. To have the trust duly administered
    B. To ensure that the trustees do not dissipate the trust fund
    C. Right of action for accounts
    D. Right to compel tracing of trust properties
    E. Appointment of executors

SECTION B: **OPEN-ENDED QUESTIONS**   **(80 MARKS)**

INSTRUCTION: **YOU ARE REQUIRED TO ANSWER FOUR OUT OF SIX QUESTIONS IN THIS SECTION**

QUESTION 1

a. Equity developed because of the problems of common law system.

   Required:

   State and explain **two** equitable remedies.   (4 Marks)

b. Partnership is one of the types of business organisations recognized by law.

   Required:

   State and explain **three** elements that determine that a partnership exists.
   (6 Marks)

c. Yety Limited is a company that produces textile materials. At its general meeting, the members of the company deliberated on the need to convert the company to a Public Company.

   i. Explain briefly the changes that must take place to convert the company in terms of the following:
      • Name;
      • Membership;
      • Authorised share capital; and
      • The additional meeting the company must hold.   (4 Marks)

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ii.   Advise the new company on **three** categories of persons that are not eligible to be members of the new company.   (3 Marks)

iii.   State **three** ways by which a person may become a member of the new company.   (3 Marks)
(Total 20 Marks)

QUESTION 2

a.   Criminal law and civil law are distinguishable.

Required:

State the distinctions as they relate to the:

i.   Parties to civil and criminal proceedings; and

ii.   Aim of each type of proceedings.   (4 Marks)

b.   Mr. Akute is an accounts clerk in Eko Plc. He has approached you for advice on acts that constitute fraudulent accounting.

Required:

State **two** acts that constitute fraudulent accounting under the Criminal Code.   (4 Marks)

c.   Explain the remedies available to the parties in the following situations:

i.   Tunde ordered bags of cocoa from Osun Company, a firm dealing in agricultural products. On being informed that the 200 bags of cocoa were ready for collection, Tunde cancelled the order.   (3 Marks)

ii.   'H' agreed to supply 'X' 50 bags of cement at a cost of ₦200,000.00 for the construction of X's house. 'Subject to contract'; 'H' got a more attractive offer from 'Y' for the 50 bags of cement, and thus supplied the 50 bags of cement to 'Y'.   (3 Marks)

d.   The Criminal Code specifies some guidelines to determine whether or not an intent or act constitutes an element of the offence of stealing.

Required:

State and explain briefly **four** intents that are elements of the offence of stealing.   (6 Marks)
(Total 20 Marks)

QUESTION 3

a. Professional negligence has adverse effect on clients.

Required:

State **three** elements of professional negligence in law of torts.

(6 Marks)

b. The Money Laundering (Prohibition) Act requires a financial institution to verify the identity of a person before opening an account for him or establishing any business relationship with such a person.

Required:

i. State **two** ways in which a financial institution may verify the identity of an individual and that of a body corporate respectively. (4 Marks)

ii. State the limit placed on the cash payment that a person and body corporate may make without going through a financial institution under the Money Laundering (Prohibition) Act. (2 Marks)

c. A company can create a charge over all or any of its property in raising capital for its objects.

Required:

i. Differentiate between a fixed charge and floating charge. (3 Marks)

ii. State **three** characteristics of a floating charge. (3 Marks)

d. A person may receive part of the profits of a partnership without being a member.

Required:

State **two** situations in which a person may receive part of the profits of a partnership without being a member. (2 Marks)

(Total 20 Marks)

QUESTION 4

a. In a contract of employment, parties have certain rights and duties.

Required:

i. Explain briefly the term "redundancy" and how it may arise under a contract of employment. (2 Marks)

ii. Ade, who is employed as an accounts clerk in Zee Company Limited, was charged to court for stealing his employer's money. The case has been in court for the past six months, and judgment is yet to be delivered.

Required:

What are the rights of the parties during the pendency of the case in court? Would your answer be different if Ade is discharged and acquitted of stealing at the end of the case? (4 Marks)

b. i. The court may appoint administrators to manage the estate of a deceased person in many situations.

Required:

State **two** situations in which the court may appoint an administrator to manage the estate of a deceased person. (4 Marks)

ii. A charitable trust must possess certain essential elements to make it valid and legal.

Required:

State **two** essential elements which a charitable trust must have to make it valid and legal. (2 Marks)

c. Agency relationships are dependent on the nature of the authority of the agent.

Required:

Explain briefly:
i. Actual or express authority of an agent; and
ii. Implied authority of an agent (4 Marks)

d. A partner has the right against any other partner to apply to court to dissolve the partnership on certain grounds.

Required:

State and explain **four** situations in which a partner can apply to the court for the dissolution of the partnership. (4 Marks)

(Total 20 Marks)

QUESTION 5

a. Receivership is an alternative to liquidation where a company is in financial difficulty.

Required:

i. Explain briefly receivership and what it involves. (2 Marks)

ii. State **four** reasons for which a company could be placed in receivership. (4 Marks)

b. Acceptance of a bill of exchange is an indication of the consent of the drawee to perform the order of the drawer. This acceptance, however, could be general or qualified.

Required:
i. What is a general acceptance of a bill of exchange? (2 Marks)
ii. Give **two** instances in which acceptance of a bill is said to be qualified. (2 Marks)

c. Banks are prohibited from appointing certain categories of persons.

Required:

State **two** categories of persons that must not be appointed as directors, secretary or officers of a bank. (2 Marks)

d. Promoters play important roles in the formation of a company and have specific duties towards achieving that purpose.
Required:
i. State and explain **two** types of remedies a company is entitled to when promoters breach their duties. (4 Marks)
ii. Explain **two** categories of persons that can ratify contracts which a promoter entered into on behalf of a company. (4 Marks)

(Total 20 Marks)

QUESTION 6

a. Professionals, including accountants, sometimes give evidence as expert witnesses during trials in court.

Required:

i. Explain briefly the meaning of 'expert witness'. (3 Marks)

ii. Ade, an accountant, is invited by the court as an expert witness in a fraud case in which documents are to be tendered as exhibits.

Required:

State **three** conditions Ade must satisfy to render the documents admissible by the court. (3 Marks)

b. There is no law prohibiting a person from obtaining more than one insurance cover in respect of the same subject matter or risk. In a case of double insurance, each insurer is liable to contribute rateably for the loss suffered by the insured.

Required:

State **four** elements that must be present for contribution to take place in a case of double insurance. (4 Marks)

c. When is the offence of forgery committed? (3 Marks)

d. One of the sources of law in the country is the Constitution of the Federal Republic of Nigeria.

Required:

State **four** characteristics of the Constitution of the Federal Republic of Nigeria. (4 Marks)

e. Hire purchase is distinguishable from credit sale.

Required:

Explain the nature of hire purchase contract. (3 Marks)

(Total 20 Marks)

SOLUTIONS TO MULTIPLE CHOICE QUESTIONS

1.   A

2.   C

3.   D

4.   B

5.   D

6.   C

7.   B

8.   A

9.   C

10.   A

11.   A

12.   B

13.   E

14.   C

15.   B

16.   B

17.   C

18.   A

19.   A

20.   E

EXAMINER'S REPORT

The questions in this section cover the syllabus. Expectedly, all the candidates attempted them and over 90% of them passed.

SECTION B SOLUTIONS

SOLUTION 1

a. The main equitable remedies are:
   (i) Injunction: This is an order to one of the parties in the case to do something or refrain from doing something;
   (ii) Specific performance: This is an order that a contract should be carried out as agreed;
   (iii) Rescission: This is a remedy, usually in contract cases, which aims to return the parties as far as possible to their pre-contractual position; and
   (iv) Rectification: Here, the court orders that where a mistake has been made accidentally in a document so that it is not a true record of the agreement of the parties, the document should be altered to reflect the intention of the parties.

b. The rules for determining if a partnership exists are:

   (i) There must be a business: The business may be a trade, vocation or profession;

   (ii) The business must be carried on by or on behalf of the partners; and

   (iii) There must be profit making and profit sharing.

ci. The changes that must take place to convert Yety Limited from a private limited liability company to a public liability company are:

   - The name of the company must change from Yety Limited to Yety Plc.;

   - The new company, Yety Plc., must have a minimum of 2 members and a limitless maximum;

   - The minimum authorised share capital of the new company must be ₦500,000.00; and

   - The new company, Yety Plc., must hold a statutory meeting within six months of its incorporation.

ii. The three categories of people that are not eligible to be members of the new company are:
- a person under 18 years of age;
- a person of unsound mind;
- an undischarged bankrupt;
- a corporate body in liquidation; and
- a person who has acted fraudulently in managing a company

iii. A person may become a member of the new company, Yety Plc., in any of the following ways:
- **Allotment of shares:** Here, the person takes the shares directly from the company;
- **Transfer of shares:** Here, the person acquires the shares from an existing member by sale, gift etc;
- **Transmission of shares:** Here, the person acquires shares formerly held by a deceased member of the company; and
- By subscription to the Memorandum of Association.

EXAMINER'S REPORT

The question tests candidates' knowledge of equitable remedies under the common law, rules that determine existence of partnerships and eligibility for membership of new companies.

81% of the candidates attempted the question, of which 85% passed.

MARKING GUIDE   MARKS   MARKS

a. Equitable remedies
- Injunction
- Specific performance
- Rescission
- Rectification   4
  (one mark for each mention; 1 mark for each explanation)

b. Elements for determining the existence of a partnership
- Existence of a business.   2
- Business carried on together by partners.   2
- Motive is to make profits.   2   6

ci.   Changes that must take place to reflect the new status of the
      company as a public company are:
      (a)   Yety Limited becomes Yety Plc.   1
      (b)   Minimum 2 members, maximum infinity   1
      (c)   Minimum authorized share capital ₦500,000.00   1
      (d)   Statutory meeting to hold within 6 months   1   4

ii.   Categories of people not eligible to be members of the new company
      (a)   Person under 18 years of age .
      (b)   A person of unsound mind.
      (c)   An undischarged bankrupt.
      (d)   A corporate body in liquidation.
      (e)   A person who has acted fraudulently in managing a company.
                                                                           3

iii. A person may become a member of the new company, Yety Plc.
      in the following ways:
      (a)   By allotment of shares;
      (b)   By transfer of shares;
      (c)   By transmission of shares; and
      (d)   By subscription to the memorandum.   <u>3</u>
                                                   Total   <u>20</u>

SOLUTION 2

a.   Distinctions between civil and criminal law concerning:
     The Parties:
     (i)   The parties to civil proceedings are the plaintiff and defendant. The
            parties to criminal proceedings are the State versus the accused
            (defendant).
     The Aim:
     (ii)   The aim of civil proceedings is to compensate the aggrieved person while
            the aim of criminal proceedings is to punish the offender.

b.   The following acts constitute fraudulent accounting under section 438 of the
     Criminal Code:
     (i)   Destruction, alteration, mutilation or falsification of any book, document
            or account that belongs to an employer;
     (ii)   Making or being privy to making a false entry in any such book,
            document or account; or
     (iii) Omitting or being privy to omitting any material particular from any
            such book, document or account.

ci. The question relates to the remedies available to a party in a case of a breach of contract.

According to the question, Tunde ordered 200 bags of cocoa and cancelled the order when the 200 bags of cocoa were ready for collection. This is a breach of contract by Tunde.

Osun company may sue for specific performance, that is, ask the court to compel Tunde to perform his own side of the contract. The company could also sue for damages.

ii. An agreement 'subject to contract' did not constitute a contract, but indicated that the parties were still negotiating.
Thus, 'H' is not bound by the promise to supply 50 bags of cement to 'X' until an agreement was reached.
Since no agreement was consummated before 'H' sold the 50 bags of cement to Y, no remedy is available to 'X' in respect of the transaction.

d. Under the Criminal Code, the intents that are elements of the offence of stealing are an intent to:
(i) Permanently deprive the owner of the thing of it;
(ii) Permanently deprive any person who has any special property in the thing of such property;
(iii) Use the thing as a pledge or security;
(iv) Part with the thing on a condition as to its return which the person taking it or converting it may be unable to perform;
(v) Deal with the thing in such a manner that it cannot be returned in the condition in which it was at the time of the taking or conversion; and
(vi) In the case of money, use the money at the will of the person who takes or converts it.

EXAMINER'S REPORT

The question tests several principles which include distinction between civil and criminal laws; remedies for breach of contract and application of same; fraudulent accounting and acts that constitute same under the Criminal Code as well as ingredients of the offence of stealing.

83% of the candidates attempted the question. Candidates' understanding of the questions was very good and their performance was good.

MARKING GUIDE	MARKS	MARKS

a. Distinction between civil and criminal law

    i.   Parties to proceedings   2

    ii. Aim or purpose of each proceeding   2   4

b. Acts that constitute fraudulent accounting:

    i.   Destruction, alteration, mutilation or falsification of book, document   2

    ii. Making or being privy to making false

    iii. Omitting or being privy to omitting   2   4

ci. (a) The issue in the question is breach of contract   1

    (b) Y's action of cancelling the order is thus justified as a contract was yet to be reached   1

    (c) Y cannot sue for specific performance and damages since there was no contract   1   3

ii. (a) The question relates to remedy for breach of contract.   1

    (b) H's diversion of the 50 bags of cement is a breach of contract   1

    (c) Remedies: injunction if the 50 bags are yet to be diverted, damages and specific performance if they had been diverted   1   3

d. The guidelines specified by the Criminal Code are:

    (a) Intention to permanently deny the owner of the thing;   1

    (b) Intention to permanently deny a person special property in the thing;   1

    (c) Intention to use the thing as a pledge or security;   1

    (d) Intention not to return the thing in a way in which it was taken;   1

    (e) Intention to deal with the thing and not be able to return it in the way it was taken; and

    (f) In the case of money, an intention to use at the will of the person who takes or convert it   1   <u>6</u>

               Total   = <u>20</u>

SOLUTION 3

a. The **three** elements of negligence are as follows:

    (i)   A duty of care by the defendant to the plaintiff;

    (ii) A breach of that legal duty; and

    (iii) A consequential harm or damage to the plaintiff arising from the breach.

bi. The ways by which financial institutions can verify the identity of customers before opening an account for such customers as provided by the Money Laundering (Prohibition) Act are:
For an individual: Such an individual will be required to provide proof of his identity by presenting to the financial institution:
- a valid original of an official document bearing his names, photographs, address; and
- the original of receipts issued within the previous three months by public utilities

For a body corporate: Such a body corporate shall be required to provide proof of its identity by presenting:
- its certificate of incorporation; and
- other valid official document dating from less than three months before the date of the transaction

ii. The limit of the cash payment that a person may make without going through a financial institution under the Money Laundering (Prohibition) Act is:
- **For an individual:** ₦5,000,000 or its equivalent;
- **For a body corporate:** ₦10,000,000 or its equivalent

ci. The differences between a fixed charge and a floating charge are:
Fixed charge is a charge over a specific property of a company when the charge is created, the identity of which does not change during the subsistence of the charge.

While a
Floating charge: is an equitable charge on all or any of the company's property or assets, the constituent items of which are constantly changing.

ii. The characteristics of a floating charge are as follows:
- It is one which in the ordinary course of the business of the company will be changing from time to time;
- Until the charge attaches to assets, the company may dispose of or deal with the assets in the ordinary course of business; and
- It is a charge on both present and future assets.

d. A person who is not a partner may receive part of the profits of the partnership as:
(i) A creditor who receives payment by installment out of the profits of a business without more;

(ii) An employee or agent that is given a share of the profits e.g in productivity scheme;

(iii) The widow or child of a deceased partner that is given an annuity out of the profits of the partnership; or

(iv) The seller of a business who receives payment for his goodwill in the form of an annuity or periodic payments out of a partnership profits.

EXAMINER'S REPORT

The question tests candidates' understanding of the principles of professional negligence in tort, limit of cash payment under the Money Laundering (Prohibition) Act, distinction between fixed and floating charges; and the situations in which a person may receive part of the profits of a partnership without being a member.

About 70% of the candidates attempted this question, and 70% of them passed.

MARKING GUIDE			MARKS	MARKS
a.	Distinction between civil and criminal law			
	iii.	Parties to proceedings	2	
	iv.	Aim or purpose of each proceeding	2	4
b.	Acts that constitute fraudulent accounting:			
	ii.	Destruction, alteration, mutilation or falsification of book, document;	2	
	ii.	Making or being privy to making false; and		
	iii.	Omitting or being privy to omitting.	2	4
ci.	(a)	The issue in the question is breach of contract	1	
	(b)	Y's action of cancelling the order is justified as a contract was yet to be reached	1	
	(c)	Y cannot sue for specific performance and damages since there was no contract	1	3
ii.	(a)	The question relates to remedy for breach of contract.	1	
	(b)	H's diversion of the 50 bags of cement is a breach of contract	1	
	(c)	Remedies: injunction if the 50 bags are yet to be diverted, damages and specific performance if they had been diverted	1	3
d.	The guidelines specified by the Criminal Code are:			
	(a)	Intention to permanently deny the owner of the thing;	1	
	(b)	Intention to permanently deny a person special property in the thing;	1	
	(c)	Intention to use the thing as a pledge or security;	1	
	(d)	Intention not to return the thing in a way in which it was taken;	1	

(e)	Intention to deal with the thing and not be able to return it in the way it was taken; and		1	
(f)	In the case of money, an intention to use at the will of the person who takes or convert it.		1	6

(1½ Marks for any 4= 6 Marks)   Total   =   20

SOLUTION 4

ai. Redundancy in contract of employment means an involuntary loss of job by the employee.

Redundancy may arise in the following situations:
- Where the employer has ceased or intend to stop carrying on the business; and
- Where the employer is no longer interested in the particular job being done by the employee.

ii. The question is on the right of an employer to interdict an employee who is charged to court for an offence.
Interdiction means the suspension of the employee pending the determination of a criminal charge against him.
In this hypothetical case, Ade who was employed as an accounts clerk is standing trial for stealing. His employer, Zee Company, has the right to suspend Ade until the conclusion of the case against him in court.

If Ade is however discharged and acquitted of the charge, Zee company must reinstate him.

bi. The court may appoint administrators to manage the estate of a deceased person in the following situations:
Where a person dies:
(ii) Without making a will at all;
(iii) Leaving a will but fails to name an executor in the will;
(iv) Leaving a will but the named executor in the will is unable or refuses to obtain probate; and
(v) Leaving a will, but is deemed to have died interstate because some of his property are not covered by his will.

ii. The essential elements that a charitable trust must have to be a charitable trust are:
- **Benefit to the public:** It must be for the benefit of the generality of the people or a significant part of it;

- **Being wholly and exclusively charitable:** It must be applicable only to charitable purposes in whole and exclusively; and
- **Being charitable legally:** It must be charitable in the legal sense and not necessarily in the ordinary context of the word.

ci. **Actual or express authority of an agent:** This is an authority usually given to the agent by the principal in writing and sometimes by deed or under seal.

ii. **Implied authority:** This is an authority usually inferred from the conduct of the parties, especially the principal. An agent may also have an implied authority to do acts that are incidental to the act for which he has actual authority.

d. A partner has a right to apply to the court for the dissolution of a partnership on grounds that any of the other partners has:
   i. Become insane or of unsound mind;
   ii. Become incapacitated, perhaps through illness or accident;
   iii. Misconducted himself so that the partnership business will be adversely affected; or
   iv. Behaved wilfully in a manner that makes it difficult or impracticable to continue associating with him.

EXAMINER'S REPORT

The question tests candidates' understanding of the principle of redundancy and interdiction in contract of employment; appointment of administrator of estates; types of agents and dissolution of partnership.

Attempt of the question by candidates was fairly good at 68%; and about 70% of them passed.

MARKING GUIDE   MARKS   MARKS

ai. Redundancy means an involuntary loss of job by the employee.
    It arises where the employer stopped carry on business or no longer
    interested in job being done by the employee   2   2

ii. The question is on interdiction.   1
    Interdiction is the suspension of employee who has a pending case in court 1

Ade has a criminal case pending in court and his employer, Zee
Company can interdict (suspend) him until the case is decided   1
Ade will be reinstated if he his discharged and acquitted   1   4

bi.   The court will appoint administrators to manage the estate of a deceased person where a person dies:

(a)   Without making a will;   1
(b)   Leaving a will but fails to name an executor in the will;   1
(c)   Leaving a will but executors fail to obtain probate or act; and 1
(d)   dies leaving a will which does not cover some of his property .   1   4

ii.   A charitable trust must possess the following elements to make it valid:

(a)   it must be of benefits to the public;   1
(b)   it must be only for charitable purpose; and   1
(c)   it must legally charitable.   1   2

c.   Actual or Express Authority of an agent: A written authority by the principal.   2

Implied Authority: It is usually inferred from the conduct of the parties 2   4

d.   A partner has a right to apply to the court for the dissolution of the partnership on grounds that any of the other partners has:

(a)   Become insane or of unsound mind;   1
(b)   Become incapacitated, through illness or accident;   1
(c)   Misconducted himself so that the firm's business will be adversely affected; and   1
(d)   Behaved in a manner which makes it difficult or impracticable to associate with him   1   <u>4</u>

Total   <u>20</u>

SOLUTION 5

ai.   Receivership means the right of a secured creditor to appoint a receiver to manage the company's assets that are the subject matter of the creditor's security. Receivership involves appointing a person to either sell or collect any income arising from the assets of the company subject to the charge on such assets in order to satisfy the outstanding debt owed to the creditor.

ii.   Subject to the terms of agreement between the company and its debenture holders, a company may be placed in receivership when:

(a)   The principal sum borrowed by the company or the interest is in arrears;
(b)   The security or property of the company is in jeopardy., for example where the Court is of the opinion that it is unreasonable for the company to retain or dispose of its assets;
(c)   The company fails to fulfill any of the obligations imposed on it by the debentures or debentures trust deed;

(d) Any circumstance occurs which by the terms of the debentures or debentures trust deed calls for receivership;

(e) The company is being wound up;

(f) Any creditor of the company issues a process of execution against any of its assets; or

(g) The company ceases to carry on business.

bi. A general acceptance of a bill of exchange occurs when the drawee assents to the order of the drawer without conditions. It is a confirmation that the drawee is in agreement with the terms of the bill as drawn.

ii. Acceptance of a bill of exchange is said to be qualified when:

(a) It is made subject to the fulfilment of certain conditions;

(b) The acceptor varies the place of payment;

(c) The acceptor agrees to pay only part of the face value of the bill; or

(d) Where some and not all the drawees accept the bill.

c. Banks are prohibited from appointing as a Director, Secretary or Officer any person who

(i) Has been adjudged bankrupt, or suspends payment to his creditors or makes a composition with them; or

(ii) Has been convicted for an offence involving fraud or dishonesty; or

(iii) Is guilty of serious misconduct in relation to his duties; or

(iv) Is disqualified from practising his profession in Nigeria.

di. A company is entitled to the following remedies when a promoter has breached his duties:

▪ **Rescission of contract:** The company may avoid or rescind the contract in question and recover any money expended in the transaction;

▪ **Recovery of secret profit:** The company may recover any secret profit made by the promoter;

▪ **Damages:** the promoter may be liable in damages for fraud if he is a party to a wilful false statement made in a prospectus inducing subscription; and

▪ **Compensation:** This is recoverable in all cases of lack of utmost good faith, for example where the promoter has failed to supply any information which is required by the Act to be contained in the prospectus.

ii. The following categories of persons can ratify contracts which a promoter entered into on behalf of a company

▪ The company's board of directors independently of the promoter; and

- All the members of the company except the promoter where it is possible to do so without a meeting

iii. The company at a general meeting at which neither the promoter nor the holder of any share in which he is beneficially interested shall vote on the resolution to ratify the contract.

EXAMINER'S REPORT

The question tests candidates' understanding of the principles of receivership and liquidation of companies; acceptance of bills of exchange; categories of persons disqualified from bank employment; remedies for promoters' breach and ratification of pre-incorporation contracts.

About 50% of the candidates attempted the question and about 60% of them passed.

The commonest pitfall of those that did not pass was their display of inadequate knowledge of receivership and acceptance of bill of exchange.

Candidates are advised to read up these areas of the syllabus in the Institute's Study Text to enable them do better in future examinations.

MARKING GUIDE

		MARKS	MARKS
ai.	Receivership is the right of a secured creditor to appoint a receiver to manage the company's assets	1	
	The receiver appointed can either sell or collect any income arising from the assets of the company	1	2
ii.	A company may be placed into the receivership where:		
	(a) The principal borrowed by the company is in arrears;	1	
	(b) The security or property of the company is in jeopardy;	1	
	(c) The company fails to fulfill the obligation of the debentures;		1
	(d) The company cannot realize the security of the term of the debenture;	1	
	(e) The company is being wound up;	1	
	(f) A process of execution is issued against the company by the creditor; and	1	
	(g) The company ceases to carry on business.	1	4
bi.	A general acceptance of a bill means the assent of the drawee to the order of the drawer without conditions	2	2
ii.	A qualified acceptance of a bill will occur when acceptance is subject to:		
	(a) The fulfillment of certain conditions;	1	
	(b) The acceptor varies the place of payment;	1	
	(c) The acceptor agrees to pay only part of the face value of the bill; and	1	
	(d) Where not all the drawees accept the bill.	1	2

c.   Banks cannot employ the following categories of persons:
      (a)   An adjudged bankrupt;   1
      (b)   A person that has suspended payment to his creditors;   1
      (c)   A person that has compounded with his creditor; and   1
      (d)   A person convicted for fraud or dishonesty or professional misconduct.   1   2

d.   The following remedies are available to the company for a breach of duty by the promoter:
      (a)   Recession of contract;   2
      (b)   Recovery of damages; and   2
      (c)   Compensation.   2   4

ii.   Contract which a promoter entered into on behalf of a company can be ratified by:
      (a)   The company's board of directors independently of the promoter;   2
      (b)   All members of the company without the promoter meeting; and   2
      (c)   The company at a general meeting without the promoter.   2   4

SOLUTION 6

ai.   An expert witness is a person who, by a formal and organized training in his chosen profession, has acquired a deep knowledge of the area he is called upon to give evidence on.

ii.   The conditions which Ade must satisfy to render the documents admissible by the court in the fraud case in which he is invited to give evidence as an expert are:
      ▪   He must satisfy the court that the document which he seeks to tender was generated in the ordinary course of the business/ transaction which is now the subject matter of the case at hand;
      ▪   He must satisfy the court that the document is either the original or the certified true copy of the document; and
      ▪   He must also satisfy the court that his function is related to the subject matter of the document.

b.   In order for contribution to take place in a case of double insurance, the following elements must be present:
      i.   The risk which occurred must be common to both policies;
      ii.   The insurance policies must have a common subject matter;
      iii.   The policies must cover the same interest, i.e. all the policies must be in protection of the same interest of the insured;
      iv.   Each policy must be enforceable as at the date of loss; and
      v.   The policies must not exclude contribution.

c. The characteristics of the Constitution of the Federal Republic of Nigeria are as follows:
    (i)   **Supremacy:** The constitution is supreme and its provisions are binding on all authorities and persons in the country;
    (ii)   **Written and Rigid:** It is a written and not easy to amend;
    (iii) **Federalism:** It divides the powers of the government between the Federal Government and the States of the Federation;
    (iv)   **Separation of powers:** The constitution separates the powers of government between the Executive, Legislature and judiciary;
    (v)   **Rule of law:** It prohibits arbitrariness; and
    (vi)   **Fundamental Rights:** It makes provisions for fundamental rights.

d. By virtue of section 465 of the Criminal Code, forgery is committed when a person knowingly makes a false document or writing with intent that it may be acted upon as genuine to the prejudice of any person or with intent that any person may, in the belief that it is genuine, be induced to do or refrain from doing an act.

e. A contract of hire purchase is that by which the owner of goods transfers possession of the goods to the hirer in consideration of the payment of a sum of money periodically and which gives the hirer an option to purchase the goods after the payment of the agreed installments.

EXAMINER'S REPORT

The question tests candidates' knowledge of various legal issues such as who an expert witness is and the conditions for admissibility of documents; double insurance and contribution; offence of forgery; hire purchase and credit sale; and characteristics of the Constitution of the Federal Republic of Nigeria.

About 70% of the candidates attempted the question, but only about 60% passed.

Their commonest pitfall was their shallow knowledge of contribution in double insurance.

Candidates are enjoined to avail themselves of tuition and ICAN's Study Text in preparation for the Institute's future examinations.

MARKING GUIDE

		MARKS	MARKS
ai.	An expert witness is a specialist by training in his chosen profession. He must have a deep knowledge in the area in which he is giving evidence.	3	3

ii.   Ade must satisfy the following conditions before the document can be admissible by the court:

    (a)   That the document was generated in the ordinary course of business;   1½

    (b)   That the document is either the original or the certified copy of the document generated from the computer; and   1½

    (c)   That his (Ade's) function is related to the subject matter of the document.   1   4

b.   In other for contribution to take place in a case of double insurance the following elements must be present:

    (a)   Common risk to both policies;   1

    (b)   Common subject matter to both policies;   1

    (c)   Common interest to both policies;   1

    (d)   Each policy must be enforceable as at the date of loss; and   1

    (e)   The policies must not exclude contribution.   1   3

c.   The characteristics of the Constitution of the Federal Republic of Nigeria are:

    (a)   Supremacy of the constitution;   1

    (b)   Federalism;   1

    (c)   Separation of powers;   1

    (d)   Rule of law; and   1

    (e)   Fundamental human rights.   1   4

d.   When an offence of forgery is committed

    (a)   Knowingly making a false document or writing.   1

    (b)   With intent that it may be acted upon as genuine.   1

    (c)   A person is so induced to believe that it is genuine.   1   3

e.   The rights of the hirer under a contract of hirer purchase are the rights:

    (a)   To use the goods;   1

    (b)   To quiet possession and enjoyment of the goods;   1

    (c)   To know the exact installments to be paid and the cash prices of the goods; and   1

    (d)   To choose the insurance and the garage to maintain the goods or motor vehicle.   1   <u>3</u>

                                     Total   <u>20</u>