

**ACCOUNTING TECHNICIANS SCHEME, WEST AFRICA**

**COST ACCOUNTING PAPER FOR MARCH 2021 DIET  
QUESTIONS AND MARKING SCHEME**

**Time Allowed: 3 hours**

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

**ATTEMPT ALL QUESTIONS**

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

1.    What does cost accounting involve?
  - A. Drawing up balance sheet
  - B.    Writing off of costs
  - C.    Ascertainment of cost
  - D.    Preparation of statement of value added
  - E.    Annual audit of financial statement
  
2.    Cost accounting is an integral part of
  - A. Financial accounting
  - B. Forensic accounting
  - C. Treasury accounting
  - D. Historical accounting
  - E. Management accounting
  
3.    Which of the following is **NOT** an objective of cost accounting?
  - A. Provide information to aid control
  - B. Ascertain cost and facilitate pricing
  - C. Provide information for decision making
  - D. Investigate fraud
  - E. Assist in planning
  
4.    Which of the following is a direct expense?
  - A. Director's salary
  - B. Cost of hiring a special equipment for a particular production order
  - C. Advertising expenses
  - D. Electricity expenses
  - E. Insurance premiums

**Use the following information to answer questions 5 and 6**

Buildwell Enterprises presents the following information:

Economic Order Quantity	300 units
Cost of placing an order	₦25
Carrying cost per unit per annum	8%
Purchase price per unit	₦100

5. The Annual Demand is ..... units
- A. 12,400
  - B. 12,440
  - C. 12,550
  - D. 14,000
  - E. 14,400
6. The number of orders per annum is ..... times
- A. 43
  - B. 44
  - C. 48
  - D. 52
  - E. 55
7. Materials can be defined as all the tangible material assets of an organisation other than its
- A. Work-in-progress
  - B. Raw materials
  - C. Stock in transit
  - D. Fixed assets
  - E. Finished goods
8. Which of the following is **NOT** a work of a storekeeper?
- A. Receiving stock items
  - B. Issuing stock items
  - C. Custody of stock items
  - D. Recording of stock items
  - E. Selling of stock items

9. Under the First In First Out method, store issues are valued using the prices of the
- Last batches received into the store
  - First batches received into the store
  - Middle batches received into the store
  - Average of the first and last batches received into the store
  - Next batch to be received into the store.

**Use the following information to answer questions 10 and 11.**

The following details apply to a factory where W, X, Y & Z work.

Normal Rate per Hour	₦50
Standard Time per unit	12 minutes

In a 40-hour week, the output was as follows

Work	W	X	Y	Z
Units	66	166	200	220

10. The standard output per hour is ..... units
- 3
  - 4
  - 5
  - 9
  - 12
11. The piece rate per unit is
- ₦7.50
  - ₦7.80
  - ₦9.80
  - ₦10.00
  - ₦12.50
12. Under labour incentive schemes, bonus is paid
- Every December
  - Each time the company received a large order
  - To particularly good employees
  - Anytime there is surplus money in the treasury
  - Over and above the basic pay to reward extra time worked or time saved

13. **PAYE** is an acronym for?
- A. Pay As You Engage
  - B. Pay According to your Expectation
  - C. Pay All Your Employees
  - D. Payment At Year End
  - E. Pay As You Earn
14. Overheads are the aggregate of
- A. Indirect materials, indirect labour and indirect expenses
  - B. Expenses incurred over the normal expense heads
  - C. Expenses incurred by the owners of the business
  - D. All uncontrollable expenses
  - E. All unauthorised expenses

**Use the following data to answer questions 15 and 16.**

The following details were given:

Distance of one-way route	40 kilometers
Round trips per day	3
Days operated in a month	25
Seating capacity	50 passengers
Average seating capacity occupied	80%
Fuel consumption	1litre per 6kms
Fuel price	₦15 per Litre

15. The effective kilometres covered in a year is ..... kms
- A. 62,000
  - B. 67,500
  - C. 70,500
  - D. 72,000
  - E. 72,750
16. The fuel consumption for distance covered is ..... litres
- A. 11,200
  - B. 11,250
  - C. 12,000
  - D. 12,150
  - E. 12,200

17. The usual basis of apportioning factory rent is
- A. Number of employees
  - B. Number of machines
  - C. Floor space occupied
  - D. Kilowatt of energy used
  - E. Number of pillars
18. The ..... distinguishes a profit centre from a cost centre
- A. Direct cost
  - B. Indirect cost
  - C. Profit
  - D. Loss
  - E. Revenue
19. In reconciliation of profits disclosed by interlocking accounts, what are the purely financial matters?
- A. Balance sheet items
  - B. Matters relating to the Banks
  - C. Matters outside the scope of operation
  - D. Salaries and wages paid to casual workers
  - E. Items involving cash transactions
20. A notional charge is
- A. A charge on the assets of the company
  - B. A government charge to be paid by the company
  - C. Charge introduced to reduce tax liability
  - D. Charge which though not payable but are meant to reflect the normal costs of running the business
  - E. Expected income which may be recognised in the accounts
21. Which of the following basis of cost classification applies to Marginal Costing Techniques?
- A. Element-wise
  - B. Function-wise
  - C. Control-wise
  - D. Behaviour-wise
  - E. Identifiable-wise

22. Which of the following is **NOT** a method used for the purpose of apportionment of joint cost in process costing?
- A. Net residual value
  - B. Physical quantity at split-off point
  - C. Further processing cost of each product
  - D. Residual sales value
  - E. Sales value at split-off point
23. Costing methods refer to the systems of cost finding and ascertainment. Which of the following methods is **NOT** a costing method?
- A. Job costing
  - B. Service costing
  - C. Standard costing
  - D. Batch costing
  - E. Contract costing
24. Which of the following is **NOT** an appropriate cost unit for a hotel business?
- A. Meals served
  - B. Guests per night
  - C. Beds occupied per night
  - D. Rooms occupied per night
  - E. Cigarettes sold per night
25. Which of the following is an indirect cost?
- A. Cost of hire of an equipment in executing a job
  - B. Supervisory wages
  - C. Maintenance cost of tools
  - D. Cost of work sub-contracted to a third party
  - E. Cost of time spent in carrying out the audit of a client's books of accounts
26. Which of the following is **NOT** concerned with cost behaviour?
- A. Definition of cost unit
  - B. Linearity assumption
  - C. Use of statistical methods
  - D. Existence of spare capacity
  - E. Over-simplification

27. Which of the following would **NOT** be described as an industry where the output produced emerges from a continuous process?
- A. Oil refining
  - B. Beer brewing
  - C. Garri processing
  - D. Road construction
  - E. Paint production
28. The scheme where monetary incentives is paid in addition to wages and workers are entitled to a portion of the gains of the business at an agreed rate is
- A. Co-partnership Scheme
  - B. Merit Rating Scheme
  - C. Accelerated Premium Scheme
  - D. Group Bonus Scheme
  - E. Profit Sharing Scheme
29. The process of gathering, analysing and synthesising information regarding the operations, duties and responsibilities of a specific job is
- A. Job Specification
  - B. Job Description
  - C. Job Analysis
  - D. Job Evaluation
  - E. Job Identification
30. The portion of a contract work completed which has not been approved by the contractee's architect is
- A. Work specification
  - B. Work done
  - C. Work certified
  - D. Work completed
  - E. Work not yet certified

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

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

1. In classifying cost of elements, we have materials, labour and .....
2. The addition of all direct costs is known as .....
3. Costs which vary in direct proportion with changes in activity levels are called .....
4. The level of stock below which quantities are not expected to fall in the store is called .....
5. The optimum quantity of stock that should be ordered from suppliers at any time is known as .....
6. Time allowed minus time taken equals .....
7. The rate of the number of employees leaving an organisation is known as .....
8. The product of hours worked and wage rate per hour is .....
9. Where the actual overhead for a period exceeds the predetermined overheads, we have a case of .....
10. A system of repeatedly reallocating each service cost centre overhead until the amounts become insignificant is known as .....
11. The monetary incentive schemes under which workers are given opportunity to have a share in capital, profit and control of the business in which they are employed is .....
12. The process of grouping the various items of overheads into distinct class or group on the basis of some common characteristics is.....



13. The process of costing under which costs are accumulated and analysed under various elements of costs and the cost per unit is ascertained by dividing the total cost by the number of units produced is.....
14. The portion of contract work completed which has been approved is evidenced by a .....
15. The avoidable loss in production which occurs due to reasons like sub-standard materials and carelessness of workers is referred to as.....
16. Two or more products of considerable values produced from the same materials in the same production process are called .....
17. An hypothetical hour which represents the amount of work which should be performed in one hour under stated conditions is .....
18. A method of ascertaining the cost of providing dishes of different types is .....
19. A summary account, which summarises all material transactions in aggregate form is .....
20. The predetermined cost based on technical estimates for materials, labour and overhead for a selected period of time for a prescribed set of working conditions is known as.....

**SECTION B: ATTEMPT ANY FOUR QUESTIONS****(50 MARKS)****QUESTION 1**

- a. XYZ Nigeria Limited basic rate of pay is ₦3 per hour and overtime rates are time and a half for evenings and double time for weekends.

The following details have been recorded on three jobs.

	Job X321	Job X786	Job X114
	<i>Clock Hours</i>	<i>Clock Hours</i>	<i>Clock Hours</i>
Normal Time	480	220	150
Evening Time	102	60	80
Weekend	10	30	16

You are required to calculate the labour cost chargeable to each of the jobs.  
**(5 Marks)**

- b. Based on the data shown below, you are required to calculate the remuneration of each employee as determined by each of the following methods

- Hourly rate **(2 Marks)**
- Basic piece rate **(2 Marks)**
- Individual bonus scheme, where the employee receive a bonus in proportion of the time saved to the time allowed. **(3½ Marks)**

<b>Name of Employees</b>	<b>Salmon</b>	<b>Roach</b>	<b>Pike</b>
Units produced	270	200	220
Time allowed in min/unit	10	15	12
Time taken in hours	40	38	36
	<b>₦</b>	<b>₦</b>	<b>₦</b>
Rate per hour	125	105	120
Rate per unit	20	25	24

**(TOTAL: 12½ Marks)**

**QUESTION 2**

- a. Explain the following terms:
- Job Order
  - Bill of Materials
  - Job cost Card
  - Job Ticket
  - Job Costing

**(5 Marks)**

- b. DKT Limited factory uses a job costing system. The following cost data are available from the books for the year 31<sup>st</sup> March 2020.

	<b>₦</b>
Direct Material	900,000
Direct wages	750,000
Selling & Distribution overheads	525,000
Administrative Overheads	420,000
Factory Overheads	450,000

**Required**

Prepare a Job cost sheet indicating:

- |                                |             |
|--------------------------------|-------------|
| i. Prime Cost                  | ( 1½ Marks) |
| ii. Factory Cost of production | (1½ Marks)  |
| iii. Production cost           | (1½ Marks)  |

- c. Calculate the quoted price to be charged to give a profit of 20% on selling price. (3 Marks)
- (TOTAL: 12½ Marks)**

**QUESTION 3**

PCT Nigeria Limited provides the following figures for the year 2020:

		Product A	Product B
Sales (in units):	1 <sup>st</sup> Quarter	1,300	1,600
	2 <sup>nd</sup> Quarter	3,000	800
	3 <sup>rd</sup> Quarter	2,700	1,000
	4 <sup>th</sup> Quarter	3,000	600
Selling Price per unit (₦)		24	50

**Targets for year 2021:**

Sales quantity increase (decrease)	(20%)	25%
Selling price increase (decrease)	25%	(20%)

Sales area X, Y and Z respectively produce 10%, 20%, 70% of Product 'A' sales and 70%, 20% and 10% of Product 'B' sales.

**You are required to prepare**

- a. Sales Budget in total for the year 2021
- b. Sales Budget in Area Wise for the year 2021

**(6½ Marks)**

**(6 Marks)**

**(TOTAL: 12½ Marks)**

**QUESTION 4**

TMN Ghana Limited commenced business on 1<sup>st</sup> March 2020 making one product only. The standard cost of which is as follows

	<b>GH¢</b>
Direct Material	8
Direct Labour	5
Variable Production Overhead	2
Fixed Production Overhead	5
<b>Standard Production Cost</b>	<b><u>20</u></b>

The fixed production overhead figure has been calculated based on a budgeted normal output of 36,000 units per annum.

Selling, distribution and administration expenses are:

Fixed cost	GH¢12,000
Variable cost	15% of sales value
Selling price per unit	GH¢35
Number of units produces (month of March)	2,000
Number of units sold ( month of March)	1,500

**Required:**

- a. Prepare an Operating Statement for the month of March 2020 using
  - i. Marginal Costing Technique **(4 Marks)**
  - ii. Absorption Costing Technique **(4 Marks)**
- b. Present a reconciliation of the profit and loss given in (ai) and (aia) above.

**(4½ Marks)**

**(TOTAL: 12½ Marks)**

## QUESTION 5

SMO Limited is considering investing in two projects but constrained by limited finance.

As a result of this, the company can only invest in one of these two projects:

	<b>Project A</b>	<b>Project B</b>
	<b>GMD</b>	<b>GMD</b>
Initial Capital Outlay	228,000	285,000
<b>Net cash flows</b>		
Year 1	114,000	57,000
Year 2	121,000	85,000
Year 3	29,000	94,000
Year 4	14,000	140,000
Year 5	24,000	60,000

The company's cost of capital is 15%

### Required

Assess the viability of each of these two projects using the following methods.

i. Net Present Value (6½ Marks)

ii. Internal Rate of Return (6 Marks)

(TOTAL: 12½ Marks)

## QUESTION 6

a. Write briefly on the following

i. Overhead Apportionment (1½ Marks)

ii. Overhead Allocation (1½ Marks)

b. AST Nigeria Limited has three production departments A, B and C and two service departments X and Y.

<b>Department</b>	<b>L\$000</b>
A	1,200
B	800
C	650
X	240
Y	150

An analysis of the services provided by each service department shows the following percentages of total spent for the benefit of each department.

Service Department

Production/Service Department

	A	B	C	X	Y
X	30%	30%	20%	-	20%
Y	50%	10%	30%	10%	-

**Required**

Show the apportionment of the production service department costs to production departments using repeated distribution method. **( 9½ Marks)**  
**(TOTAL: 12½ Marks)**

## **SOLUTION TO QUESTIONS**

### **SECTION A:        PART 1**

### **MULTIPLE-CHOICE**

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

**(1 Mark per tick =Total = 30 Marks)**

Workings

Q5.

$$EOQ = \sqrt{\frac{2DOc}{C}}$$

Where D = Annual Demand

Oc = Ordering cost per order

C = Carrying cost per unit per annum

$$EOQ = \sqrt{\frac{2D \times 25}{8}} = 300$$

$$= \frac{2D \times 25}{8} = 300 \times 300$$

$$50D = 300 \times 300 \times 8$$

$$D = (300 \times 300 \times 8) / 50$$

$$D = 720,000 / 50$$

$$D = 14,400 \text{ units}$$

Q6.

$$\text{No of order per annum} = \frac{\text{Annual Demand}}{EOQ} \text{ OR } D/Q$$

$$D/Q = 14,400 / 300 = 48 \text{ times}$$

Q10.

$$\text{The standard output per hour} = 60 \text{ minutes} / 12 \text{ minutes} = 5 \text{ units}$$

Q11.

$$\begin{aligned} \text{Piece Rate per unit} &= \text{Normal Rate per hour} / \text{Standard unit} \\ &= \text{₦}50 / 5 \text{ units} = \text{₦}10.00 \end{aligned}$$

Q15.

$$\begin{aligned} \text{Effective kilometers} &= \text{Distance covered one-way} \times \text{No. of trips per day} \times \\ &\quad \text{No. of days operated} \times \text{No of months operated} \\ &= 40 \times (3 \times 2) \times 25 \times 12 = 72,000 \text{ kms} \end{aligned}$$

Q16.

$$\begin{aligned} \text{Fuel consumption} &= \frac{\text{Distance Covered}}{\text{Mileage per litre}} \\ &= 72,000 \text{ kms} / 6 \text{ litre} = 12,000 \text{ litres} \end{aligned}$$



## **SECTION A: PART II SHORT-ANSWER QUESTIONS (SAQ)**

1. Expenses
2. Prime Cost
3. Variable Cost
4. Minimum inventory/Stock Level or Buffer Stock/Inventory
5. Economic Order Quantity/Re-Order Quantity
6. Time Saved
7. Labour Turnover Rate
8. Basic Pay/Wage
9. Under Absorption/Absorbed Overheads
10. Continuous Apportionment/Repeated Distribution Apportionment Method
11. Co-Partnership
12. Classification Of Overheads/ Overhead Classification
13. Unit Costing
14. Architect's/Surveyor/Engineer Certificate
15. Abnormal Loss
16. Joint Products
17. Standard Hour
18. Canteen Costing/Service Costing
19. Stores Ledger Control Account
20. Standard Cost

**(1 Mark per tick = Total 20Marks)**

## SECTION B

### QUESTION 1

#### XYZ NIGERIA LIMITED (1/2)

#### a. Calculation of Cost Chargeable to Jobs

	Job X321	Job X786	Job X114
Basic Pay: Normal Time Hourly Rate	$\text{₦} \frac{480}{\text{₦3}} = 1,440$ (1/4)	$\text{₦} \frac{220}{\text{₦3}} = 660$ (1/4)	$\text{₦} \frac{150}{\text{₦3}} = 450$ (1/4)
Overtime Pay: Evening Time Hourly Rate ( $1\frac{1}{2} \times$ #3)	$\frac{102}{\text{₦4:50}} = 459$ (1/4)	$\frac{60}{\text{₦4:50}} = 270$ (1/4)	$\frac{80}{\text{₦4:50}} = 360$ (1/4)
Weekend Time Hourly Rate ( $2 \times$ #3)	$\frac{10}{\text{₦6:00}} = 60$ (1/4)	$\frac{30}{\text{₦6:00}} = 180$ (1/4)	$\frac{16}{\text{₦6:00}} = 96$ (1/4)
<b>COST CHARGEABLE</b>	<b><u>1,959</u> (1/4)</b>	<b><u>1,110</u> (1/4)</b>	<b><u>906</u> (1/4)</b>

(5 Marks)

#### b. Calculation of Remuneration of Each Employee

Employee	Salmon	Roach	Pike
Units produced (a)	270	200	220
Time Allowed in Mins./unit (b)	10	15	12
Total Time Allowed in Mins. ( $c = a \times b$ )	2,700 (1/2)	3,000 (1/2)	2,640 (1/2)
Total Time Allowed in Hours. ( $d = c/60$ )	45 (1/2)	50 (1/2)	44 (1/2)
Time Taken in Hours (e)	40	38	36
Time saved ( $f = d - e$ )	5 (1/2)	12 (1/2)	8 (1/2)
Hourly rate (g)	₦125:00	₦105	₦120
i. Basic Pay for Hours Worked ( $h = e \times g$ )	₦5,000:00 (1/2)	₦3,990:00 (1/2)	₦4,320:00 (1/2)
Piece Rate (i)	₦20:00	₦25:00	₦24:00
a. Basic Pay based on Piece rate on ( $j = a \times i$ )	₦5,400:00 (1/2)	₦5,000:00 (1/2)	₦5,280:00 (1/2)
b. Bonus Pay = Hours Worked X HR + ( $\frac{TS}{TA} \times TS \times HR$ )	₦5,069.44 (1/2)	₦4,292:40 (1/2)	₦4,494.55 (1/2)
18 ticks x (1/2) mark			

(7 1/2 Marks)

(Total 12 1/2 Marks)

## QUESTION 2

### a. (i) Job Order

This signifies the beginning of a job after a job cost card has been carefully prepared. It could be seen as a written instruction to produce a particular amount of goods or to provide a particular service. **(1 Mark)**

### (ii) Bill of Materials

A Bill of Materials (BOM) is a comprehensive inventory of the raw materials, assemblies, sub-assemblies, parts and components as well as the quantities of each, needed to manufacture a product. In a nutshell, it is the complete list of all the items that are required to produce a product **(1 Mark)**

### (iii) Job cost Card

This is also known as Job cost sheet. It is a document in which details of direct material cost, direct labour cost, overheads and total cost relating to a job are recorded. **(1 Mark)**

### (iv) Job Ticket

This is a document which contains several detachable portions each of which is detached and sent by the foreman to the Production Control Department on completion of each operation of a job. **(1 Mark)**

### (v) Job Costing

This is that form of specific order costing under which each job is treated as cost unit and costs are accumulated and ascertained separately for each job. **(1 Mark)**

**(5 Marks)**

### b.

#### DKT LIMITED

#### Cost sheet for the Jobs carried out during the year 31<sup>st</sup> March 2020

Particulars	Notes	Total (₹)
Direct Material	(a)	900,000 (½)
Direct Wages	(b)	<u>750,000</u> (½)
<b>Prime Cost</b>	(c)= (a)+(b)	<b>1,650,000</b> (½)
Factory Overheads	(d)	<u>450,000</u> (½)

<b>Factory Cost of production</b>	(e)=(c)+(d)	<b>2,100,000 (1)</b>
Administrative Overheads	(f)	<u>420,000 (1/2)</u>
<b>Production Cost</b>	(g)=(e)+(f)	<b>2,520,000 (1)</b>
Selling & Distribution overheads	(h)	<u>525,000 (1/2)</u>
<b>Total Cost</b>	(i)=(g)+(h)	<b>3,045,000 (1/2)</b>
Profit (w1)	(j)=(i)+(j)	<u>761,250 (1)</u>
<b>Quoted Price</b>	(k)=(i)+(j)	<b>3,806,250 (1)</b>

Workings:

(1) Determination of profit

$$\text{Profit} = 20/80 \times \text{N}3,045,000 = \text{N}761,250$$

- a. (5 x 1 mark= 5 Marks)
- b. (4 x1 mark = 4 Marks)
- (7 x 1/2 mark = 3 1/2 Marks)
- (Total 12 1/2 Marks)

### QUESTION 3

#### i. PCT NIGERIA LIMITED

#### Sales Budget in Total for the Year 2021

Period	Product A	Product B	
1 <sup>st</sup> Quarter	1,300	1,600	
2 <sup>nd</sup> Quarter	3,000	800	
3 <sup>rd</sup> Quarter	2,700	1,000	
4 <sup>th</sup> Quarter	3,000	600	
Total for 2020 (a)	<b>10,000</b> (1/2)	<b>4,000</b> (1/2)	
Sales Quantity (Decrease) (b1)	<b>(20%)</b>		
Sales Quantity Increase (b2)		<b>25%</b>	
Sales Budget Quantity for 2021(c = a X b)	<b>8,000 (1)</b>	<b>5,000 (1)</b>	
Selling Price/Unit (d)	<b>N24</b>	<b>N50</b>	
Selling Price Increase (e1)	<b>25%</b>		
Selling Price (Decrease) (e2)		<b>(20%)</b>	
Selling Price/Unit for 2021(f = d X e)	<b>N30 (1/2)</b>	<b>N40 (1/2)</b>	
Total Sales Budget for 2021 (g = c X f)	<b>240,000</b> (1)	<b>200,000</b> (1)	<b>440,000</b> (1/2)

**(6½ Marks)**

ii. **Sales Budget Area Wise for the Year 2021**

<b>AREA</b>	<b>X</b>	<b>Y</b>	<b>Z</b>	<b>Total (₹)</b>
Product A (10:20:70)	24,000 (1/2)	48,000 (1/2)	168,000 (1/2)	<b>240,000</b> (1/2)
Product B (70:20:10)	140,000 (1/2)	40,000 (1/2)	20,000 (1/2)	<b>200,000</b> (1/2)
<b>Total</b>	<b>164,000</b> (1/2)	<b>88,000</b> (1/2)	<b>188,000</b> (1/2)	<b>440,000</b> (1/2)

**(6 Marks)**

**(Total 12<sup>1/2</sup> Marks)**

#### QUESTION 4

TMN NIGERIA LIMITED  
Operating Statement for the Month of March, 2020  
Using Marginal Costing Technique

	₦	₦
Sales (₦35 x 1,500 units) <sup>1/4</sup>		52,500 <sup>1/4</sup>
Less: Marginal Cost of Production:		
Direct Material (₦8 x 2,000 units) <sup>1/4</sup>	16,000 <sup>1/4</sup>	
Direct Labour (₦5 x 2,000 units) <sup>1/4</sup>	10,000 <sup>1/4</sup>	
Variable Prod. Overhead (₦2 x 2,000) <sup>1/4</sup>	<u>4,000</u> <sup>1/4</sup>	
	30,000	
Less: Closing Inventory (₦15 x 500units) <sup>1/4</sup>	<u>(7,500)</u> <sup>1/4</sup>	
	22,500 <sup>1/4</sup>	
Add: Variable selling & Distr. (15% x ₦52,500) <sup>1/4</sup>	<u>7,875</u> <sup>1/4</sup>	<u>(30,375)</u> <sup>1/4</sup>
Contribution		22,125 <sup>1/4</sup>
Less: Fixed Costs		
Fixed Production Overhead:(36,000/12 x ₦5) <sup>1/4</sup>	15,000 <sup>1/4</sup>	
Fixed selling, Distribution & Admin.	<u>12,000</u> <sup>1/4</sup>	<u>(27,000)</u> <sup>1/4</sup>
Net Loss		<u>(4,875)</u> <sup>1/2</sup>

TMN NIGERIA LIMITED  
Operating Statement for the Month of March 2020  
Using Absorption Costing Technique

	₦	₦
Sales (₦35 x 1,500 units) <sup>1/4</sup>		52,500 <sup>1/4</sup>
Less: Cost of Production:		
Direct Material (₦8 x 2,000 units) <sup>1/4</sup>	16,000 <sup>1/4</sup>	
Direct Labour (₦5 x 2,000 units) <sup>1/4</sup>	10,000 <sup>1/4</sup>	
Variable Prod. Overhead (₦2 x 2,000) <sup>1/4</sup>	4,000 <sup>1/4</sup>	
Fixed Production Overhead (#5 x 2,000 units) <sup>1/4</sup>	<u>10,000</u> <sup>1/4</sup>	
	40,000 <sup>1/4</sup>	
Less: Closing Inventory (₦20 x 500units) <sup>1/4</sup>	<u>10,000</u> <sup>1/4</sup>	
	30,000	
Add: Under Absorption OH (₦15,000 - ₦10,000) <sup>1/4</sup>	<u>5,000</u> <sup>1/4</sup>	<u>35,000</u> <sup>1/4</sup>
Gross Profit		17,500 <sup>1/4</sup>
Less: Non Production Costs:		

Variable selling & Distribution (15% x ₦52,500) <sup>1/4</sup>	7,875 <sup>1/4</sup>
Fixed selling & Distribution	<u>12,000</u> <sup>1/4</sup> (19,875) <sup>1/4</sup>
Net Loss	<u>(2,375)</u> <sup>1/2</sup>

a. Reconciliation between the Marginal & Absorption Costing Technique Profits

	Net Profit	Closing Inventory
	₦	₦
Absorption costing	(2,375) <sup>1/4</sup>	10,000 <sup>1/4</sup>
Marginal costing	<u>{(4,875)} <sup>1/4</sup></u>	<u>(7,500) <sup>1/4</sup></u>
	<u>2,500</u> <sup>1/4</sup>	<u>2,500</u> <sup>1/4</sup>

**(46 ticks x ¼ Mark = 11½ Marks)**

**(2 ticks x ½ Mark = 1 Mark)**

**(Total 12 Marks)**



## QUESTION 5

### Project A

i. SMO LIMITED				
Computation of Net Present Value				
Year		Cash flow ₦	Df@15%	Present Value ₦
0	Cash outlay	(228,000)	1.0000 (1/4)	( 228,000)
1		114,000	0.8696 (1/4)	99,130
2		121,000	0.7561 (1/4)	91,493
3		29,000	0.6575 (1/4)	19,068
4		14,000	0.5718 (1/4)	8,005
5		24,000	.4972 (1/4)	<u>11,932</u>
+NPV				<u>1,628</u> <sup>1/2</sup>

### Project B

Computation of Net Present Value				
Year		Cash flow ₦	Df@15%	Present Value ₦
0	Cash outlay	(285,000)	1.0000 (1/4)	(285,000)
1		57,000	0.8696 (1/4)	49,562
2		85,000	0.7561 (1/4)	64,272
3		94,000	0.6575 (1/4)	61,807
4		140,000	0.5718 (1/4)	80,045
5		60,000	0.4972 (1/4)	<u>29,831</u>
+NPV				<u>517</u> (1/2)

Decision: The two projects A and B give positive Net Present Value of 1,682 and 517 respectively, but project A should be preferred having a higher positive NPV. **(1½ Mark)**

### ii. \_\_\_\_\_ SMO LIMITED

#### Computation of Internal Rate of Return with 20% cost of capital

Year		Cash flow ₦	Df@20%	Present Value ₦
0	Cash outlay	(228,000)	1.0000 (1/4)	(228,000)
1		114,000	0.8333 (1/4)	95,000
2		121,000	0.6944 (1/4)	84,028

3	29,000	0.5787 (1/4)	16,782
4	14,000	0.4823 (1/4)	6,752
5	24,000	0.4019 (1/4)	<u>9,645</u>
		NPV	<u>(15,793)</u> <sup>1/2</sup>

## Project B

### Computation of Net Present Value

Year	Cash flow ₦	Df@20%	Present Value ₦
0	Cash outlay (285,000)	1.0000 (1/4)	(285,000)
1	57,000	0.8333 (1/4)	47,500
2	85,000	0.6944 (1/4)	59,028
3	94,000	0.5787 (1/4)	54,398
4	140,000	0.4823 (1/4)	67,515
5	60,000	0.4019 (1/4)	<u>24,113</u>
		NPV	<u>(32,446)</u> <sup>1/2</sup>

$$\text{IRR} = \text{LR} + \left\{ \frac{\text{NPV (LR)}}{\text{NPV (LR)} \pm \text{NPV (HR)}} \right\} (\text{HR} - \text{LR})^{1/2}$$

## Project A

Project A: LR = 15%

NPV (LR) = #1,628

HR = 20%

NPV (HR) = #15,793

$$\text{IRR} = 15\% + \left\{ \frac{1,628}{1,628 + 15,793} \right\} (20 - 15)$$

$$\text{IRR} = 15\% + \left\{ \frac{1,628}{17,421} \right\} (5)$$

$$\text{IRR} = 15\% + 0.467$$

$$\text{IRR} = \underline{15.47\%}^{1/2}$$

## **Project B**

Project B: LR = 15%

NPV (LR) = #517

HR = 20%

NPV (HR) = #32,446

$$\text{IRR} = 15\% + \left\{ \frac{517}{517 + 32,446} \right\} (20 - 15)$$

$$\text{IRR} = 15\% + \left\{ \frac{517}{32,963} \right\} (5)$$

$$\text{IRR} = 15\% + 0.0156$$

$$\text{IRR} = \underline{15.02\%}^{1/2}$$

Decision:

Project A should be accepted because it has a higher IRR of 15.46% compared to project B with 15.02%  $1^{1/2}$ marks

(24 ticks x  $\frac{1}{4}$  Mark = 6 Marks)  
(7 ticks x  $\frac{1}{2}$  Mark =  $3^{1/2}$  Marks)  
(2 ticks x  $1^{1/2}$  Marks = 3 Marks)  
(Total  $12^{1/2}$  Marks)

## **QUESTION 6**

a (i). Overhead Apportionment

This involves sharing out of a common cost in an equitable way or proportion between the production and service department according to benefits received.  $(1^{1/2}$  Marks)

(ii). Overhead Allocation

This is the process by which whole cost items are charged to a cost unit or cost centre. It is the direct charging of an overhead cost item to a specific cost centre where it was incurred.  $(1^{1/2}$  Marks)

b.

AST NIGERIA LIMITED

Apportionment of Overheads

		Prod. Dept	Prod. Dept	Prod. Dept	Serv. Dept	Serv. Dept
		A	B	C	X	Y
		₦'000	₦'000	₦'000	₦'000	₦'000
Overhead Cost		1,200 <sup>1/4</sup>	800 <sup>1/4</sup>	650 <sup>1/4</sup>	240 <sup>1/4</sup>	150 <sup>1/4</sup>
Reapportion	X(3:3:2:2)	72 <sup>1/4</sup>	72 <sup>1/4</sup>	48 <sup>1/4</sup>	(240) <sup>1/4</sup>	48 <sup>1/4</sup>
Reapportion	Y(5:1:3:1)	99 <sup>1/4</sup>	19.8 <sup>1/4</sup>	59.4 <sup>1/4</sup>	19.8 <sup>1/4</sup>	(198) <sup>1/4</sup>
Reapportion	X(3:3:2:2)	5.94 <sup>1/4</sup>	5.94 <sup>1/4</sup>	3.96 <sup>1/4</sup>	(19.8) <sup>1/4</sup>	3.96 <sup>1/4</sup>
Reapportion	Y(5:1:3:1)	1.98 <sup>1/4</sup>	0.396 <sup>1/4</sup>	1.188 <sup>1/4</sup>	0.396 <sup>1/4</sup>	(3.96) <sup>1/4</sup>
Reapportion	X(3:3:2:2)	0.1188 <sup>1/4</sup>	0.1188 <sup>1/4</sup>	0.0792 <sup>1/4</sup>	(0.396) <sup>1/4</sup>	0.0792 <sup>1/4</sup>
Reapportion	Y(5:1:3:1)	0.0396 <sup>1/4</sup>	0.00792 <sup>1/4</sup>	0.02376 <sup>1/4</sup>	0.00792 <sup>1/4</sup>	(0.0792) <sup>1/4</sup>
Total		1,379.08 <sup>1/4</sup>	898.26 <sup>1/4</sup>	762.65 <sup>1/4</sup>	-	-

(2 points x 1<sup>1/2</sup> Mark =3 Marks)  
 (38 ticks x 1/4 Mark = 9<sup>1/2</sup> Marks)  
 (Total 12<sup>1/2</sup> Marks)