

MODEL TEST PAPER 7

INTERMEDIATE: GROUP – II

PAPER – 4: COST AND MANAGEMENT ACCOUNTING

Answers are to be given only in English except in the case of the candidates who have opted for Hindi medium. If a candidate has not opted for Hindi medium his/her answer in Hindi will not be valued.

Working notes should form part of the answer.

Time Allowed – 3 Hours

Maximum Marks – 100

1. *The question paper comprises two parts, Part I and Part II.*
2. *Part I comprises Case Scenario based Multiple Choice Questions (MCQs) for 30 marks*
3. *Part II comprises questions which require descriptive type answers for 70 marks.*

PART I – Case Scenario based MCQs

Part I is compulsory.

Write the most appropriate answer to each of the following multiple-choice questions by choosing one of the four options given. All questions are compulsory.

Case Scenario I

A truck driver, named Raju, owns a truck which can carry 5 tonne of material at a time. Raju has no other truck and he has listed himself with various carriage services agencies, to offer his services. He gets his work from these agencies and they pay him as per the load and the distance. Raju has one condition that he must be paid for at least 75% of his total capacity. Raju charges freight at ₹ 10 per tonne-km.

He received a work contract, from one of these agencies, where he has to take 4 tonne from Delhi in the morning and drop it off at Chandigarh. After that he will move to Ludhiana, where he again loads 3 tonne and come back to Delhi by evening. This contract is for nearly 3 months.

Raju is excited to accept the order but it is not physically possible for Raju to complete this project alone. He decides to hire a helper cum driver who will assist him in this work contract and will also drive in turns with Raju. Thus, such a long contract will be managed comfortably. This helper will take ₹ 15,000 per month.

The contract will start from 15th June, 2024 and will run till 14th September, 2024. Throughout this time period there are only 2 days holidays, both falling in August (1 for Independence Day and 1 for Raksha Bandhan).

Some information about the Truck and its associated costs:

- Truck was purchased on 1st April, 2021 by taking a loan of ₹ 20,00,000 @ 10% p.a. from Punjab national bank for 5 years. Raju mortgaged jewellery of his wife to get this loan.
- Every year-end he has to pay ₹ 5,27,595 as instalment.
- Scrap value after 10 years is expected to be ₹ 500,000.
- Depreciation is charged on straight-line method.
- Services and maintenance charges each month is ₹ 80,000.
- Truck runs on diesel and its running average is 8kms/ litre.
- Diesel cost per litre:

June	80.30
July	80.50
August	81.25
September	80.90

Yearly interest amount of loan and yearly depreciation is charged to a work contract on the basis of days worked in a year in the contract.

Distance between these places:

- (1) Delhi to Chandigarh = 250 kms
- (2) Chandigarh to Ludhiana = 100 kms
- (3) Ludhiana to Delhi = 150 kms

Answer the following questions (MCQs 1 to 5):

1. What would be the amount of profit Raju would have earned if he had no minimum charges limit of 75% of total capacity on absolute Tonne-km basis? (If the vehicle runs empty then he would only charge for Diesel expenses).
 - A. 3,34,249
 - B. 4,43,249
 - C. 5,96,977
 - D. 4,34,249
2. If payment was made on commercial Tonne-km basis and Raju had no minimum charges limit of 75%, how much he would have lost due to no minimum requirement?
 - A. ₹ 6,37,500
 - B. ₹ 5,93,750
 - C. ₹ 4,92,438
 - D. ₹ 3,91,126

3. What should be the minimum amount charged on basis of absolute Tonne-km if Raju wants to earn ₹ 2,70,000?
 - A. ₹ 4.58
 - B. ₹ 6.13
 - C. ₹ 8.39
 - D. ₹ 3.21
4. Choose the correct amount of depreciation and interest that should be charged to this work contract.
 - A. 56,983 & 22,588
 - B. 36,986 & 22,578
 - C. 63,963 & 12,568
 - D. 63,953 & 12,558
5. What is the profit as per current rate charged by Raju? (Use absolute Tonne-Km).
 - A. 7,34,249
 - B. 9,44,863
 - C. 5,96,977
 - D. 4,34,249

(5 x 2 Marks)

Case Scenario II

eSalt is the biggest producer of sodium hydroxide in India. This main product of the company has a strong reactivity with other organic compounds. It is highly versatile and is alkaline in nature. However, the basic material required for the production of this product is salt along with the electricity.

The manufacturing process involve electrolysis which produces Halogen as co-product. Modern use of Halogen is widespread. However, the common use is in disinfection like for purifying drinking water or swimming pool water. It is also an important ingredient of toothpaste. Thus, the company's management affirmed the simultaneous production of Halogen.

During the previous financial year, the company purchased the base material of ₹ 5,34,000. For the current year, company decided to increase the production by 2 times. Due to increased production, the total conversion cost hiked to 3 times. Last year, the conversion cost accounted to ₹ 8,01,000 up to the point at which two products i.e. sodium hydroxide and Halogen are separated.

The production and sales information for current year is provided as below:

	Sodium hydroxide	Halogen
Production/ Sales(in tonne)	24,030	16,020
Selling price per tonne (₹)	100	150

During the current year, the management of the company pointed the extensive use of Vinyl which can be produced by further processing Halogen. Having selling

price of ₹ 250 per tonne higher than that of the Halogen, it was decided not to sell Halogen and further process it into Vinyl. The incremental processing cost took ₹ 8,01,000 producing 10,012.50 tonnes of Vinyl.

You are required to FIGURE OUT the following for managerial decision (MCQs 6 to 10):

6. For the current year, the amount of base material purchased and the conversion cost up to the point at which two products i.e. Sodium hydroxide and Halogen are separated would be:
 - A. base material ₹ 10,68,000 and conversion cost ₹ 24,03,000
 - B. base material ₹ 10,68,000 and conversion cost ₹ 16,02,000
 - C. base material ₹ 16,02,000 and conversion cost ₹ 24,03,000
 - D. base material ₹ 24,03,000 and conversion cost ₹ 16,02,000
7. Joint cost to be apportioned between Sodium hydroxide and Halogen as per the physical unit method would be:
 - A. Sodium hydroxide ₹ 24,03,000 and Halogen ₹ 10,68,000
 - B. Sodium hydroxide ₹ 10,68,000 and Halogen ₹ 16,02,000
 - C. Sodium hydroxide ₹ 16,02,000 and Halogen ₹ 24,03,000
 - D. Sodium hydroxide ₹ 24,03,000 and Halogen ₹ 16,02,000
8. Joint cost to be apportioned between Sodium hydroxide and Halogen as per the sales value at split-off point method would be:
 - A. Sodium hydroxide ₹ 20,02,500 and Halogen ₹ 20,02,500
 - B. Sodium hydroxide ₹ 16,02,000 and Halogen ₹ 24,03,000
 - C. Sodium hydroxide ₹ 24,03,000 and Halogen ₹ 16,02,000
 - D. Sodium hydroxide ₹ 10,68,000 and Halogen ₹ 20,02,500
9. Joint cost to be apportioned between Sodium hydroxide and Halogen as per the estimated net realisable value method would be:
 - A. Sodium hydroxide ₹ 23,44,390 and Halogen ₹ 16,60,610
 - B. Sodium hydroxide ₹ 17,16,429 and Halogen ₹ 22,88,571
 - C. Sodium hydroxide ₹ 22,88,571 and Halogen ₹ 17,16,429
 - D. Sodium hydroxide ₹ 16,60,610 and Halogen ₹ 23,44,390
10. Considering that the decision relating to further processing Halogen is not approved, suggest whether this would be in favour of the management by calculating incremental revenue /loss from further processing Halogen into Vinyl.
 - A. Incremental loss would be ₹ 16,02,000, thus the decision of not further processing Halogen is correct.
 - B. Incremental loss would be ₹ 8,01,000, thus the decision of not further processing Halogen is correct.

- C. Incremental revenue would be ₹ 8,01,000, thus the decision relating to further processing Halogen needs to be approved.
- D. Incremental revenue would be ₹ 16,02,000, thus the decision relating to further processing Halogen needs to be approved. **(5 x 2 Marks)**
11. Mr. Ben is paid higher wages than Mr. Akon. Though their normal wage rate is same, Mr. Ben gets higher payment as under Halsey system than that to Mr. Akon as under Rowan System.

The total time allowed to make the same product is 75 hours, however, Mr. Ben takes 60 hours while Mr. Akon takes 45 hours.

The production of the product also involve other costs that are not traced directly to the product like salary to quality assurance manager, factory rent, supplies, salary to production supervisor, electricity consumed, etc. which comes to ₹ 2,26,800 leading to factory overhead rate being ₹ 120 per man-hour actually worked.

The total factory cost for the product produced by Mr. Akon comes to ₹ 1,25,640 and by Mr. Ben comes to ₹ 1,29,600.

From the information given above, COMPUTE the normal wage rate along with the cost of material.

- A. Normal wage rate- ₹ 63 per hour and cost of material- ₹ 1,20,240
- B. Normal wage rate- ₹ 67.5 per hour and cost of material- ₹ 1,22,400
- C. Normal wage rate- ₹ 480 per hour and cost of material- ₹ 90,000
- D. Normal wage rate- ₹ 450 per hour and cost of material- ₹ 87,840

(2 Marks)

12. WHICH of the following is the correct journal entry as would appear in the cost books when there is under recovery of overheads?

- A. Cost of Sales A/c..... Dr. xxx
To Administrative Overhead Control A/c xxx
- B. Production Overhead Control A/c.....Dr. xxx
To Work-in-Process Ledger Control A/c xxx
- C. Costing Profit & Loss A/c.....Dr. xxx
To Administrative Overhead Control A/c xxx
- D. Work-in-Process Ledger Control A/c.....Dr. xxx
To Production Overhead Control A/c xxx

(2 Marks)

13. Due to sudden rise in demand of the product, the sales of Arrow Ltd. for current year enhanced to 3 times the average of last 4 years. The Break even point and the variable cost of the company for the current year is ₹ 1,17,00,000 and 93,60,000 respectively.

The sales data relating to past years is given below:

Year	Sales (₹)
Year 1 (latest)	62,00,000
Year 2	50,00,000
Year 3	52,00,000
Year 4	44,00,000
Year 5	66,00,000

CALCULATE the fixed cost to the company for the current year.

- A. ₹ 64,35,000
- B. ₹ 48,12,453
- C. ₹ 65,34,340
- D. ₹ 46,80,000

(2 Marks)

14. Due to technical and economical reasons, F8 Ltd. manufactures in batch. The latest contract requires the company to supply 9,000 bushings per month to G4 Ltd. The company has estimated that each set up for manufacturing the bushings will cost ₹ 16,002.25 and the inventory holding cost per bushing per annum will come to ₹ 60.

HOW many runs the company need to make throughout the year to complete the demand?

- A. 5 runs
- B. 10 runs
- C. 15 runs
- D. 20 runs

(2 Marks)

15. The Budgeted fixed overhead for the month of August was ₹ 75,00,000 with the units of production estimated at 15,000. However, the actual units produced is 15,600 with no Fixed overhead cost variance.

CALCULATE the actual fixed overhead incurred.

- A. ₹ 75,00,000
- B. ₹ 72,11,538
- C. ₹ 78,00,000
- D. ₹ 79,00,000

(2 Marks)

PART-II – Descriptive Questions (70 Marks)

Question No. 1 is compulsory.

Attempt any **four** questions out of the remaining **five** questions.

1. (a) Shanu Ltd has calculated a predetermined overhead rate of ₹ 22 per machine hour for its Quality Check (QC) department. This rate has been calculated for the budgeted level of activity and is considered as appropriate for absorbing overheads. The following overhead expenditures at various activity levels had been estimated.

Total overheads	Number of machine hours
₹ 3,38,875	14,500
₹ 3,47,625	15,500
₹ 3,56,375	16,500

You are required to:

- CALCULATE the variable overhead absorption rate per machine hour.
- CALCULATE the estimated total fixed overheads.
- CALCULATE the budgeted level of activity in machine hours.
- CALCULATE the amount of under/over absorption of overheads if the actual machine hours were 14,970 and actual overheads were ₹ 3,22,000.
- STATE the arguments for and against using departmental absorption rates as opposed to a single or blanket factory wide rate.

(5 Marks)

- (b) Following standards have been set for manufacturing a product 'XYZ':

Direct Material:	(₹)
4 units of X @ ₹ 8 per unit	32.00
6 units of Y @ ₹ 6 per unit	36.00
30 units of Z @ ₹ 2 per unit	<u>60.00</u>
	128.00
Direct Labour:	
6 hrs @ ₹ 16 per hour	<u>96.00</u>
Total standard prime cost	<u>224.00</u>

The company actually manufactured and sold 12,000 units of the product 'XYZ' during the year.

Direct material costs were as follows:

50,000 units of X at ₹ 8.80 per unit

72,000 units of Y at ₹ 5.60 per unit

354,000 units of Z at ₹ 2.40 per unit

The company worked 70,000 direct labour hours during the year. For 10,000 of these hours, the company paid at ₹ 24 per hour while for the remaining, the wages were paid at standard rate.

You are required to CALCULATE the following:

- (i) Material Price Variance
- (ii) Material Usage Variance
- (iii) Labour Rate Variance
- (iv) Labour Efficiency Variance **(5 Marks)**

- (c) Shivi is working by employing 10 skilled workers. It is considering the introduction of some incentive scheme – either Halsey scheme (with 50% bonus) or Rowan scheme of wage payment for increasing the labour productivity to cope with the increased demand for the product by 25%. She feels that, if the proposed incentive scheme could bring about an average 20% increase over the present earnings of the workers, it would act as sufficient incentive for them to produce more and she has accordingly given this assurance to the workers.

As a result of this assurance, the increase in productivity has been observed as revealed by the following figures for the current month:

Hourly rate of wages (guaranteed)	₹ 2.00
Average time for producing 1 piece by one worker at the previous performance (this may be taken as time allowed)	2 hours
Number of working days in the month	25
Number of working hours per day for each worker	8
Actual production during the month	1,250 units

Required:

- (1) CALCULATE effective rate of earnings per hour under Halsey scheme and Rowan scheme.
- (2) CALCULATE the savings of Navya in terms of direct labour cost per piece under the above schemes.
- (3) ADVISE Navya about the selection of the scheme to fulfill her assurance **(4 Marks)**

2. (a) XYZ Constructions is a leading engineering and construction company providing a range of infrastructure and industrial services. Recently, they have been asked to quote for residential building construction (RBC) and industrial plant construction (IPC) projects. However, they are winning fewer RBC contracts than expected.

XYZ Constructions has a policy to price all jobs at budgeted total cost plus 50%. Overheads are currently absorbed on a labour-hour basis. The company believes that switching to activity-based costing (ABC)

to absorb overheads would reduce the costs associated with RBC and make them more competitive.

You are provided with the following data:

Overhead category	Annual Overhead (₹ Lakhs)	Activity driver	Total number of activities per year
Supervisors	₹120	Site visits	600
Project Planners	₹ 80	Planning documents	300
Property related	₹400	Labour hours	50,000
Total	₹600		

For a typical **RBC**: Material cost: ₹ 5 lakhs, Labour hours: 1,200 hours, Site visits: 2 visits, Planning documents: 2 documents

For a typical **IPC**: Material cost: ₹ 12 lakhs, Labour hours: 2,500 hours, Site visits: 10 visits, Planning documents: 8 documents

Labour is paid at ₹ 100 per hour.

Required:

- (a) CALCULATE the cost and quoted price of an RBC and an IPC using labour hours to absorb the overheads.
 - (b) CALCULATE the cost and quoted price of an RBC and an IPC using ABC to absorb the overheads.
 - (c) Assuming that the cost of an RBC falls by nearly 7% and the price of an IPC rises by about 2% as a result of the change to ABC, SUGGEST possible pricing strategies for the two services offered by XYZ Constructions. Additionally, suggest two reasons other than high prices for the current poor sales of RBC. **(10 Marks)**
- (b) "Calculation of variances in standard costing is not an end in itself, but a means to an end." DISCUSS. **(4 Marks)**
3. (a) The following are the details in respect of Process A and Process B of a processing factory:

	Process A (₹)	Process B (₹)
Materials	40,000	--
Labour	40,000	56,000
Overheads	16,000	40,000

The output of Process A is transferred to Process B at a price calculated to give a profit of 20% on the transfer price and the output of Process B is charged to finished stock at a profit of 25% on the transfer price. The finished stock department realized ₹ 4,00,000 for the finished goods received from Process B.

You are asked to SHOW process accounts and total profit, assuming that there was no opening or closing work-in-progress. **(6 Marks)**

- (b) From the following data CALCULATE (i) Administration cost, (ii) Selling cost and (iii) Distribution cost:

		Amount (₹)
(i)	Rent paid for factory building	96,000
(ii)	Salary paid to office staffs	8,20,000
(iii)	Fees paid to auditors	92,000
(iv)	Salary paid to sales manager	8,00,000
(v)	Vehicle hire charges paid for directors attending general meeting	10,200
(vi)	Wages paid to workers engaged in storing goods at sales depot	7,200
(vii)	Travelling allowance paid to sales staffs	9,600
(viii)	Cost paid for secondary packing	8,200
(ix)	Electricity bill paid for sales office	1,800
(x)	Depreciation on goods delivery vehicles	13,000
(xi)	Bonus paid to sales staffs for achieving targets	96,000
(xii)	Fees paid to independent directors	1,02,000

(6 Marks)

- (c) STI is majorly providing education loan in its loan department. For the month of August, salary paid to the education loan processors is ₹ 21,60,000. W.r.t. overhead cost, 30% is applicable to the processing of education loan out of the total overhead cost of loan department.

The total overhead cost for the month of August is ₹ 16,40,000 which includes payment of ₹ 11,000 w.r.t. legal advice relating to one of the education loan processing.

The education loan applications processed during this month are 500. You are required to COMPUTE the cost of processing per education loan application.

(2 Marks)

4. (a) Following information is available from the purchase books of a company:

Cost of placing a purchase order	₹ 10,000
Number of units to be purchased during the year	12,50,000
Purchase price per unit	₹ 125
Annual cost of storage per unit	₹ 62.50

Details of lead time:

Maximum	20 days
Minimum	10 days

Average	15 days
Emergency	3 days

Rate of consumption:

Average	1,500 units per day
Maximum	2,000 units per day

From the details given above, you are required to CALCULATE:

- (i) Re-ordering level
 - (ii) Maximum level
 - (iii) Minimum level
 - (iv) Danger level (6 Marks)
- (b) Idle time is the time during which no production is carried-out because the worker remains idle but are paid. It can be normal or abnormal. LIST OUT some of the causes/examples of normal and abnormal idle time. (4 Marks)
- (c) Following information is available as per the cost accounts of a company for the year ended 31st March:

Particulars	Amount (₹)
Profit	7,77,150
Factory expenses under-charged	2,35,500
Administrative expenses under-charged	1,17,750
Selling & distribution expenses under-charged	31,400
Income from interest and dividends (not adjusted in cost statement)	2,35,500

You are required to PREPARE a reconciliation statement to ascertain Profit as per Financial Accounts. (4 Marks)

5. (a) A Korean beverage company plans to set up a subsidiary in India to manufacture fruit juice. Based on projected annual sales of 40,000 bottles, cost analysis has provided the following estimates for the Indian subsidiary:

	Total Annual Costs (₹)	Percentage of Total Annual Cost which is Variable
Material	3,15,000	100%
Labour	1,40,000	75%
Factory Overheads	1,35,000	50%
Administrative Overheads	50,000	35%

The fruit juice produced in India will be sold through manufacturer's representatives, who will earn a commission of 10% of the sales price.

Expenses from the Korean office will not be allocated to the Indian subsidiary.

Required

- (i) COMPUTE the sale price per bottle to enable the management to realise an estimated 10% profit on sale proceeds in India.
 - (ii) CALCULATE the break-even point in Rupee sales and also in number of bottles for the Indian subsidiary on the assumption that the sale price is ₹ 19 per bottle. **(8 Marks)**
- (b) C Ltd. manufactures two products using two types of materials and one grade of labour. Shown below is an extract from the company's working papers for the next month's budget:

	Product-A	Product-B
Budgeted sales (in units)	2,400	3,600
Budgeted material consumption per unit (in kg):		
Material-X	5	3
Material-Y	4	6
Standard labour hours allowed per unit of product	3	5

Material-X and Material-Y cost ₹ 4 and ₹ 6 per kg and labours are paid ₹ 25 per hour. Overtime premium is 50% and is paid, if a worker works for more than 40 hours a week. There are 180 direct workers.

The target productivity ratio (or efficiency ratio) for the productive hours worked by the direct workers in actually manufacturing the products is 80%. In addition, the non-productive down-time is budgeted at 20% of the hours worked.

There are four 5-days weeks in the budgeted period and it is anticipated that sales and production will occur evenly throughout the whole period.

It is anticipated that stock at the beginning of the period will be:

Product-A	400 units
Product-B	200 units
Material-X	1,000 kg.
Material-Y	500 kg.

The anticipated closing stocks for budget period are as below:

Product-A	4 days sales
Product-B	5 days sales
Material-X	10 days consumption
Material-Y	6 days consumption

Required:

CALCULATE the Material Purchase Budget and the Wages Budget for the direct workers, showing the quantities and values, for the next month.

(6 Marks)

6. (a) As a consultant hired by a manufacturing company, HOW would you go about assessing the critical factors for designing and implementing a cost accounting system? **(5 Marks)**
- (b) As a consultant, a client has approached you to set up a budgetary control system in their organization. WHAT sequential steps would you follow to design, implement, and monitor the system? **(5 Marks)**
- (c) You are managing the inventory for a manufacturing company and notice that certain items in the store are not being utilized frequently, leading to increased holding costs. HOW would you identify slow-moving and non-moving items, and WHAT strategies would you implement to minimize such stocks effectively? **(4 Marks)**

OR

- (d) DISCUSS in brief three main methods of allocating support departments costs to operating departments. **(4 Marks)**