

COST & MANAGEMENT ACCOUNTING

Total Marks – 60 marks

Time allowed – 2 hour

SECTION A

(5 X 2 = 10 marks)

A meeting of the heads of departments of the Arnav Ltd. has been called to review the operating performance of the company in the last financial year. The head of the production department appraised that during the last year the company could operate at 70% capacity level but in the coming financial year 95% capacity level can be achieved if an additional amount of ₹100 Crore on capex and working capital is incurred.

The head of the finance department has presented that during the last financial year the company had a P/V ratio of 40%, margin of safety and the break-even were ₹50 crore and ₹200 crore respectively.

To the reply to the proposal of increasing the production capacity level to 95%, the head of the finance department has informed that this could be achieved if the selling price and variable cost are reduced by 8% and 5% of sales respectively. Fixed cost will also increase by ₹20 crore due to increased depreciation on additional assets. The additional capital will be arranged at a cost of 15% p.a. from a bank.

In the coming financial year, it has been aimed to achieve an additional profit of ₹10 crore over and above the last year's profit after adjusting the interest cost on the additional capital.

The following points is required to be calculated on urgent basis to put the same in the meeting. You being an assistant to the head of finance, has been asked the followings

1. What will be the revised sales for the coming financial year?

- a. ₹322.22 Crore b. ₹311.11 Crore c. ₹300.00 Crore d. ₹324.24 Crore

2. What will be the revised break-even point for the coming financial year?

- a. ₹222.22 Crore b. ₹252.22 Crore c. ₹244.44 Crore d. ₹255.56 Crore

3. What will be the revised margin of safety for the coming financial year

- a. ₹100 Crore b. ₹58.89 Crore c. ₹55.56 Crore d. ₹66.66 Crore

4. The profit of the last year and for the coming year are:

- a. ₹50 Crore & ₹95 Crore respectively b. ₹20 Crore & ₹65 Crore respectively
c. ₹20 Crore & ₹30 Crore respectively d. ₹45 Crore & ₹66.66 Crore respectively

5. The total cost of the last year and for the coming year are

- a. ₹230 Crore & ₹292.22 b. ₹230 Crore & ₹275 Crore
c. ₹220 Crore & ₹282.22 Crore d. ₹220 Crore & ₹292.22 Crore

SECTION B

(5 X 2 = 10 marks)

K Ltd. is a manufacturer of a single product A. 8,000 units of the product A has been produced in the month of March 2024. At the beginning of the year a total 1,20,000 units of the product-A has been planned for production. The cost department has provided the following estimates of overheads:

Fixed	₹ 12,00,000	Variable	₹ 6,00,000
SemiVariable	₹ 1,80,000		

Semi-variable charges are considered to include 60 per cent expenses of fixed nature and 40 per cent of variable nature.

The records of the production department shows that the company could have operated for 20 days but there was a festival holiday during the month.

The actual cost data for the month of March 2024 are as follows:

Fixed	₹ 1,19,000	Variable	₹ 48,000
Semi-Variable	₹ 19,200		

The cost department of the company is now preparing a cost variance report for managerial information and action. You being an accounts officer of the company are asked to calculate the following information for preparation of the variance report:

6. What is the amount of variable overhead cost variance for the month of March 2024:

- a. ₹ 10,200 (A) b. ₹ 10,400 (A) c. ₹ 10,800 (A) d. ₹ 10,880 (A)

7. What is the amount of fixed overhead volume variance for the month of March 2024:

- (a) ₹ 9,000 (F) (b) ₹ 9,000 (A) (c) ₹ 21,800 (A) (d) ₹ 11,000 (A)

8. What is the amount of fixed overhead expenditure variance for the month of March 2024:

- (a) ₹ 21,520 (A) (b) ₹ 21,500 (A) (c) ₹ 21,400 (A) (d) ₹ 21,480 (A)

9. What is the amount of fixed overhead calendar variance for the month of March 2024?

- (a) ₹ 5,400 (A) (b) ₹ 5,450 (A) (c) ₹ 5,480 (A) (d) ₹ 5,420 (A)

10. What is the amount of fixed overhead cost variance for the month of March 2024:

- (a) ₹ 43,320 (A) (b) ₹ 43,300 (A) (c) ₹ 43,200 (A) (d) ₹ 43,380 (A)

SECTION C

(5 X 2 = 10 marks)

Hilfy textiles Ltd. has been a major player in the textile industry, producing high- quality polyester mix cotton fabric. The production process is complex and involves multiple stages, including spinning, weaving, quality control, and packaging. The company has been facing challenges in controlling costs and maintaining profitability, mainly due to fluctuating material costs and labor inefficiencies.

To address these challenges, the company's management has decided to implement a standard costing system to better manage costs, set benchmarks, and identify variances. The goal is to gain better control over production costs, improve budgeting accuracy, and enhance decision-making.

Hilfy textiles Ltd. had prepared the following estimation for the month of April:

	Quantity/Time	Rate (₹)	Amount (₹)
Cotton	8,000 m	50.00	4,00,000
Polyester	6,000 m	40.00	2,40,000
Skilled labour	1,000 hours	37.50	37,500
Unskilled labour	800 hours	22.00	17,600

Normal loss was expected to be 10% of total input materials and an idle labour time of 5% of expected labour hours was also estimated.

At the end of the month the following information has been collected from the cost accounting department:

The company has produced 14,800 m finished product by using the followings:

	Quantity/Time	Rate (₹)	Amount (₹)
Cotton	9,000 m	48.00	4,32,000
Polyester	6,500 m	37.00	2,40,500
Skilled labour	1,200 hours	35.50	42,600
Unskilled labour	860 hours	23.00	19,780

On the basis of analysis of standard costing system, company's management wants to take actions like supplier negotiation, process optimisation, employee training, etc.

Being the cost manager of the company, you are required to answer the following five requirements of the management:

11. Compute Material mix variance and Material Yield Variance

- (a) ` 1430 (A) & 43,200 (F) (b) ` 1430 (F) & 43,200 (F)
 (c) ` 24,000 (A) & 37,500 (F) (d) ` 19,300 (A) & 37,500 (F)

12. Compute Material Price Variance for supplier negotiation

- (a) ` 18,000 (A) (b) ` 43,200 (F) (c) ` 37,500 (A) (d) ` 37,500 (F)

13. Compute Material Cost Variance

(a) ` 32,500 (F)

(b) ` 24,500 (A)

(c) ` 79,270 (F)

(d) ` 79,270 (A)

14. Compute Labour Efficiency Variance and Labour Yield Variance

(a) ` 940 (A) & 1,140 (A)

(b) ` 2,424 (A) & 1,556 (A)

(c) ` 2,424 (A) & 1,556 (A)

(d) ` 940 (A) & 1,140 (F)

15. Compute Labour Cost Variance

(a) ` 884 (A)

(b) ` 1,556 (F)

(c) ` 884 (F)

(d) ` 1,556 (A)

SECTION D

Question No 1

A Ltd. manufacture and sales its product R-9. The following figures have been collected from costrecords of last year for the product R-9:

Elements of Cost	Variable Cost portion	Fixed Cost
Direct Material	30% of Cost of Goods Sold	—
Direct Labour	15% of Cost of Goods Sold	—
Factory Overhead	10% of Cost of Goods Sold	` 2,30,000
Administration Overhead	2% of Cost of Goods Sold	` 71,000
Selling & Distribution Overhead	4% of Cost of Sales	` 68,000

Last Year 5,000 units were sold at ` 185 per unit. From the given DETERMINE the followings:

- (i) Break-even Sales (in rupees)
- (ii) Profit earned during last year
- (iii) Margin of safety (in %)
- (iv) Profit if the sales were 10% less than the actual sales.

(Assume that Administration Overhead is related with production activity)

(6 marks)

Question No 2

Company manufacture and sell 3 types of mobile handset. It also manufactures wireless charger for mobile. The company has worked out following estimates for next year.

	Annual Demand (in units)	Selling Price (` per unit)	Material cost (` per unit)	Labour cost (` per unit)
X5	5,000	8,000	2,000	1,000
X6	4,000	9,000	2,500	1,500
X7	3,000	12,000	3,000	2,000
Wireless Charger	15,000	1,500	300	200

To encourage the sale of wireless charger a discount of 10% in its price is being offered if it were to be purchased along with mobile. It is expected that customer buying mobile will also buy the wireless charger. The company factory has an effective capacity of 35,000 labour hours. The labour is paid @ ` 500 per hour. Overtime of labour has to be paid at double the normal rate. Other variable cost work out to be 50% of direct labour cost and fixed cost is ` 1,00,00,000. There will be no inventory at the end of the year. PREPARE statement of profitability.

(5 marks)

Question No 3

JVG Ltd. produces a product and operates a standard costing system and value material and finished goods inventories at standard cost. The information related with the product is as follows:

Particulars	Cost per unit (₹)
Direct materials (30 kg at ₹350 per kg)	10,500
Direct labour (5 hours at ₹80 per hour)	400

The actual information for the month just ended is as follows:

- The budgeted and actual production for the month of September 2019 is 1,000 units.
- Direct materials –5,000 kg at the beginning of the month. The closing balance of direct materials for the month was 10,000 kg. Purchases during the month were made at ₹365 per kg. The actual utilization of direct materials was 7,200 kg more than the budgeted quantity.
- Direct labour – 5,300 hours were utilised at a cost of ₹4,34,600.

Calculate (i) Direct material price and usage variances (ii) Direct labour rate and efficiency variances. **(4 marks)**

Question No 4

The standard cost of a chemical mixture is as follows : 60% of Material A @ ₹50 per kg, 40% Material B @ ₹60 per kg .

A standard loss of 25% on output is expected in production.

The cost records for a period has shown the following usage. 540 kg of Material A @ ₹60 per kg 260 kg of Material B @ ₹50 per kg

The quantity processed was 680 kilograms of good product. From the above given information

Calculate material yield and mix variances **(5 marks)**

Question No 5

Moon Ltd. produces products 'X', 'Y' and 'Z' and has decided to analyse it's production mix in respect of these three products - 'X', 'Y' and 'Z'.

You have the following information :

	X	Y	Z
Direct Materials ₹ (per unit)	160	120	80
Variable Overheads ₹ (per unit)	8	20	12

Direct labour :

Departments:	Rate per Hour (₹)	Hours per unit X	Hours per unit Y	Hours per unit Z
Department-A	4	6	10	5
Department-B	8	6	15	11

From the current budget, further details are as below :

	X	Y	Z
Annual Production at present (in units)	10,000	12,000	20,000
Estimated Selling Price per unit (₹)	312	400	240
Sales departments estimate of possible sales in the coming year (in units)	12,000	16,000	24,000

There is a constraint on supply of labour in Department -A and its manpower cannot be increased beyond its present level.

Required:

- (i) Identify the best possible product mix of Moon Ltd.
- (ii) Calculate the total contribution from the best possible product mix. **(6 marks)**

Question No 6

A gang of workers normally consists of 30 skilled workers, 15 semi-skilled workers and 10 unskilled workers. They are paid at standard rate per hour as under:

Skilled ₹ 70

Semi-skilled ₹ 65

Unskilled ₹ 50

In a normal working week of 40 hours, the gang is expected to produce 2,000 units of output. During the week ended 31st March, 2019, the gang consisted of 40 skilled, 10 semi-skilled and 5 unskilled workers. The actual wages paid were at the rate of ₹ 75, ₹ 60 and ₹ 52 per hour respectively. Four hours were lost due to machine breakdown and 1,600 units were produced.

Calculate the following variances showing clearly adverse (A) or favourable (F)

- | | |
|----------------------------------|--------------------------------|
| (i) Labour Cost Variance | (ii) Labour Rate Variance |
| (iii) Labour Efficiency Variance | (iv) Labour Idle Time Variance |

(4 marks)