



## SECTION 1

*All questions are compulsory.*

*Total marks for section 1 is 50 marks.*

*Recommended time for the section is 90 minutes.*

### Question 01

**1(a):** You are required to choose the most appropriate answer.

(Total 20 marks)

1.1. Identify the promotional offer which gives the best benefit to the customer:

- A. Buy 1 and get 50% off on the 2<sup>nd</sup>
- B. Buy 2 and get the 3<sup>rd</sup> free
- C. Buy 3 and get 2 more free
- D. Buy 4 and get 35% off on all

**(2 marks)**

1.2. For a project where an initial cash outflow is followed by a series of subsequent cash inflows, identify which of the following statements is true when the applicable discount rate falls:

- A. Net Present Value (NPV) increases
- B. IRR increases
- C. Payback period shortens
- D. Accounting rate of return increases

**(2 marks)**

1.3. A financial institution offers to pay Rs. 100,000 at the end of each year for 10 years commencing from 31/12/2025 provided an agreed amount is deposited on 1/1/2015. If 12% return on the investment is expected, the maximum amount one would be prepared to invest rounded upwards to the nearest Rs. thousand is:

- A. Rs. 1,000,000
- B. Rs. 620,000
- C. Rs. 322,000
- D. Rs. 182,000

**(2 marks)**

1.4. A company is bidding for a contract of which the profit is estimated to be Rs. 50 million, Rs. 90 million and Rs. 120 million with the probabilities of  $\frac{1}{2}$ ,  $\frac{1}{3}$  and  $\frac{1}{6}$  respectively. The expected value of the contracts is

- A. Rs. 75 million
- B. Rs. 120 million
- C. Rs. 200 million
- D. Rs. 260 million

**(2 marks)**

1.5. Given below are the information for four data sets A, B, C and D.

Data set	A	B	C	D
Mean	150	175	200	250
Standard deviation	25	20	25	30

The set of data which is most volatile is:

- A. A
- B. B
- C. C
- D. D

**(2 marks)**

1.6. From the following assumptions the incorrect assumption with regard to the EOQ model is:

- A. Demand is constant
- B. Lead time is zero
- C. Sufficient resources are available to accommodate EOQ
- D. Replenishment is instantaneous

**(2 marks)**

1.7. When comparing the profits reported under absorption costing (AC) and marginal costing (MC) during a period when inventory level increased:

- A. AC profits will be higher and closing inventory value will be lower than those under MC
- B. Both AC profits and closing inventory value will be higher than those under MC
- C. MC profits will be higher and closing inventory value will be lower than those under AC
- D. Both MC profits and closing inventory value will be higher than those under AC

**(2 marks)**

1.8. From the following, the one that would **NOT** explain a favourable direct material usage variance is:

- A. Using a higher quality of materials than that specified in the standard
- B. A reduction in material wastage rates
- C. An increase in suppliers' quality control checks
- D. Achieving a lower output volume than budgeted

**(2 marks)**

1.9. A simple random sample of 100 invoices showed a mean value of Rs. 600 and a standard deviation of Rs. 100. The 95% upper confidence limit of the population mean is therefore approximately

- A. Rs. 500
- B. Rs. 580
- C. Rs. 620
- D. Rs. 700

**(2 marks)**

1.10. A research firm contacts a random sample of 100 Advanced Level students and finds that a sample proportion of 20% prefer the professional course offered by its client organization to all other similar courses. The 95% ( $Z=2$ ) confidence interval for the proportion of all advanced level students who prefer the course offered by the client organization is:

- A. 12% to 28%
- B. 16% to 24%
- C. 18% to 22%
- D. 19% to 21%

**(2 marks)**

**1(b):** You are required to write short answers to all questions with attention given to action verbs.

(Total 30 marks)

- 1.11. A company is planning to buy a machine with a total capacity of 1,800,000 units. Based on the sales forecasts 100,000 units will be produced in the first year and every year thereafter production will be increased by 25,000 units.

**Required:**

**Calculate** the number of years it will take to utilise the full capacity of the machine.

(3 marks)

- 1.12. An investment of Rs. 7.2 million is proposed to be invested in a long term project expected to generate net positive cash flows over the next 25 years. The net cash flow in the first year will be Rs. 100,000 and will increase every year by 20% of the preceding year's cash flow.

**Required:**

**Calculate** the pay-back period of the project to the nearest whole year.

(3 marks)

- 1.13. A financial institution has offered an investment scheme where an amount invested now would be doubled after 5 years.

**Required:**

**Calculate** the percentage Annual Effective Rate (AER) of this investment to two decimal places.

(3 marks)

- 1.14. In 2008, a price index based on 1994 = 100 stood at 129. In that year it was rebased at 2008 = 100. By 2010 the new index stood at 110. For a continuous estimate of price changes since 1994,

**Required:**

**Calculate** the 2010 price index considering 1994 as the base year.

(3 marks)

- 1.15. The normal output of a factory is 1,000 units per month. Fixed costs every month is assumed to be equal. In the month of January 1,210 units were produced at a total cost of Rs. 3,394,000 while in February 990 units were produced at a total cost of Rs. 3,086,000. In March production was 1,040 units, sales volume was 1,200 units and profit using marginal costing was Rs. 8,160,000.

**Required:**

**Calculate** the profit under absorption costing method.

**(3 marks)**

- 1.16. Chart Automobiles (CA) sells three products P, Q and R having C/S ratios of 15%, 10% and 25% respectively. P and Q generate revenues of Rs. 10 million and Rs. 20 million respectively. The total fixed cost of CA is Rs. 5.5 million and expects to earn a profit of Rs. 1 million.

**Required:**

**Calculate** the revenue that needs to be generated by product R to earn the expected profit.

**(3 marks)**

- 1.17. A company uses a regression equation to forecast its quarterly trend sales volume which is adjusted by a seasonal index.

The equation is:  $TV = 4,000 + 80N$  where TV is the trend volume and N is the quarter number. The seasonal index values for quarters 1, 2, 3 and 4 are 105%, 80%, 95% and 120% respectively.

**Required:**

**Calculate** the forecast increase or decrease in sales volume from 3<sup>rd</sup> quarter to 4<sup>th</sup> quarter in the second year.

**(3 marks)**

- 1.18. The length of telephone calls at a call centre is normally distributed with a mean of 10 minutes and a variance of 25.

**Required:**

**Calculate** the percentage of calls that exceeds 20 minutes.

**(3 marks)**

- 1.19. Activity based costing enables better allocation of overheads based on resource consumption by the products.

**Required:**

**State** the four (04) main steps involved in Activity Based Costing.

**(3 marks)**

- 1.20. The following estimates have been made for the next month in relation to a product with the possible margin of error (plus or minus) as given.

<b>Item</b>	<b>Rs.</b>	<b>Margin of error (+/-)</b>
Selling price per unit	80	10%
Variable cost per unit	50	20%
Fixed cost for the month	3,000,000	10%

**Required:**

**Calculate** the maximum error in the breakeven sales volume.

**(3 marks)**

## SECTION 2

Three out of the four questions should be answered.

Total marks for Section 2 is 30 marks.

Recommended time for the section is 54 minutes.

### Question 02

Sugath Tea Packaging (STP) packets and sells tea. The results of the quarter just ended are as follows.

<b>STP Tea</b>		
<b>Performance for the last quarter</b>		
	<b>Rs. '000</b>	<b>Rs. '000</b>
Sales (20,000 pkts)		1,800
Cost of Goods Sold		
Fixed production wages	60	
Piece work labour	270	
	330	
Materials	1,200	
		1,530
Gross Profit		270
Distributor commission (Rs. 15 per pkt)	300	
Fixed admin cost	90	
		390
		(120)

The following information is available for the next quarter.

1. Fixed production wages and fixed admin cost will not change
2. Piecework rate will increase to Rs. 15 per unit
3. The demand would increase / decrease by 1,000 units per quarter for each Rs. 3 decrease / increase in the selling price.

#### Required:

1. **Calculate** the marginal cost of one unit and identify the total cost function for the next quarter. **(2 marks)**
2. **Identify** the demand function and thereby total revenue and marginal revenue functions for the next quarter. **(5 marks)**
3. **Calculate** the optimum output and the selling price per unit, and total profit at the optimum level of output for the next quarter. **(3 marks)**

**(Total 10 marks)**

### Question 03

The following data relate to the process-2 of a three stage production process for the month of January;

Material input from process-1	5,000 units @ Rs. 194 per unit
Material added	Rs. 217,500
Direct labour	Rs. 400,000
Overheads	Rs. 308,100

Losses are identified upon completion of the process and during the month of January, 800 units were scrapped. 10% of the number of units introduced during the month is considered as normal. Scrap value of any loss is Rs. 50 per unit.

There were 600 units in opening work in process completed as follows;

Material from process – 1	100%	Rs. 75,000
Added material	60%	Rs. 25,000
Labour	30%	Rs. 50,000
Overhead	30%	Rs. 14,400
Total		Rs. 164,400

There were 1,000 units in closing work in process completed as follows;

Material from process – 1	100%
Added material	75%
Labour	40%
Overhead	20%

The company uses weighted average pricing method.

#### Required:

1. **Prepare** a statement reconciling input and output of process -2 in terms of number of units.  
**(2 marks)**
2. **Calculate** the number of equivalent units produced during January and cost per equivalent unit by element of cost and in total, identifying the normal loss separately.  
**(6 marks)**
3. **Calculate** the cost of production transferred to process-3 and value of closing work in process for the purpose of inclusion in process-3 account.  
**(2 marks)**

**(Total 10 marks)**

### Question 04

4.1. Following information relates to Material 'X' used by a manufacturing company

Maximum consumption per week	9,000 units
Minimum consumption per week	3,000 units
Re-order quantity	36,000 units
Lead time	4 – 6 weeks

**Required:**

**Calculate** for material X;

1. Re-order level **(1 mark)**
2. Maximum level **(1 mark)**
3. Minimum level **(1 mark)**
4. Average level **(1 mark)**

4.2. Following information relates to Material 'Y' used by a manufacturing company.

Price of 'Y'	Rs. 25 per unit
Consumption	8,000 units per annum
Cost of placing one order	Rs. 100
Rate of interest	10% per annum

**Required:**

1. **Calculate** the Economic Order Quantity (EOQ) for Y. **(2 marks)**
  2. **Calculate** Total Holding Cost and Total Ordering Cost per annum for material Y. **(2 marks)**
  3. **Explain** two (02) practical issues which may be encountered in using EOQ model. **(2 marks)**
- (Total 10 marks)**

### Question 05

The details below relate to actual output costs and variances for the month of January of a company which produces a single product called ALPHA. There were no opening and closing work in progress. A standard marginal costing system is operated.

Actual production of ALPHA	9,000 units
<b>Actual costs incurred for the month:</b>	<b>Rs. '000</b>
Direct material purchased and consumed (1,000kg)	300
Direct Labour for 5,000 hours	390
Variable production overhead	122
<b>Variances:</b>	<b>Rs. '000</b>
Direct material price	30 favourable
Direct material usage	33 adverse
Direct labour rate	10 favourable
Direct labour efficiency	32 favourable
Variable production overhead expenditure	22 adverse
Variable production overhead efficiency	8 favourable

Variable production overhead changes with labour hours used.

#### Required:

1. **Calculate** the standard costs, per unit of ALPHA, of the cost elements direct material, direct labour and variable production overhead showing cost per unit of each element and consumption of each of such element by one unit of ALPHA.  

**(6 ½ marks)**
2. **State** the three (03) broad categories standards are normally classified into and discuss which of the three is preferred.  

**(3 ½ marks)**

**(Total 10 marks)**

## SECTION 3

*Compulsory question.*

*Total marks for Section 3 is 20 marks.*

*Recommended time for the section is 36 minutes.*

### Question 06

A bank has outsourced its housing loan processing function to Application Processing Services Limited (APSL). APSL charges a fee of 0.5% of the loan amount it processes.

In 2015, average amount of a loan was budgeted to be Rs. 2,000,000. Following cost estimates per loan application had been used by APSL in preparing budgets for 2015.

Number of loan applications per month	90
Professional manpower requirement	6 hours at a rate of Rs. 400 per hour
Document filing expenses	Rs.1,000
Credit worthiness assessment	Rs.1,200
Courier and mailing expenses	Rs.500

Office maintenance cost had been estimated to be RS. 310,000 per month which has to be incurred by APSL irrespective of the number of loan applications processed.

Actual data for March 2015 were as follows.

Number of loan applications per month	120
Average loan amount	Rs. 2,240,000
Professional manpower per application	7.2 hours at a rate of RS. 420 per hour
Document filing expenses	Rs. 1,000 per application
Credit worthiness assessment	Rs. 1,250 per application
Courier and mailing expenses	Rs. 540 per application
Office maintenance	Rs. 335,000 per month

### Required:

1. **Prepare** for APSL the original budget (sometimes referred to as the fixed budget) for March 2015 based on the original estimates.  
**(4 marks)**
2. **Prepare** for APSL a flexible budget and a budgetary control statement for March 2015, identifying sales volume and flexible budget variances.  
**(12 marks)**
3. **Compute** professional manpower price and efficiency variances for March 2015.  
**(4 marks)**

**(Total 20 marks)**