

Bachelor of Mechanical Engineering Examination, 2018(4th Year, 2nd Semester)**Engineering Economics and Costing**

Time: Three Hours

Full Marks: 100

Different parts of the same question should be answered together

1. Answer (a) and any one from (b) and (c) in this block **15 + 10 = 25****(a) Answer any three questions.** **5 x 3**

(i) Cobb-Douglas production function; (ii) price control; (iii) features of monopolistic market, (iv) price discrimination, (v) law of supply and determinants of supply.

(b) What do you understand by 'economies of scale'? Summarise internal economies of scale. **2 + 8****(c) Explain in your own words the conditions under which law of demand does not operate. Define 'utility'. Enumerate assumptions of 'utility'.** **5 + 1 + 4****2. Answer any one from (a) and (b) in this block** **1 x 25 = 25****(a) (i) Explain the significance of ratio analysis.** **5**(i) The following trial balance was taken from the books of Lakshmi Co. on December 31, 2017.
All amounts are in Rupees.

Cash	13,000	
Sundry debtors	10,000	
Bills receivable	8,500	
Opening stock	45,000	
Building	50,000	
Furniture and fittings	10,000	
Investment (Temporary)	5,000	
Plant and Machinery	15,500	
Bills payable		9,000
Sundry creditors		20,000
Lakshmi's capital		78,200
Lakshmi's drawings	1,000	
Sales		100,000
Sales discount	400	
Purchases	30,000	
Freight inward	1,000	
Purchase discount		500
Sales salary expenses	5,000	
Advertising expenses	4,000	
Miscellaneous sales expenses	500	
Office salary expenses	8,000	
Misc. general expenses	1,000	

Interest income		1,000
Interest expenses	800	
	<u>2,08,700</u>	<u>2,08,700</u>

Note: closing stock on December 31, 2017 was Rs.10,000

Prepare a trading account, profit and loss account, and an end of year balance sheet from the above trial balance in report form. Interpret the working capital ratio of your prepared balance sheet. **6 + 6 + 5 + 3**

- (b) (i) Classify various types of financial accounts according to traditional and modern approaches. **5 + 4**
(ii) Explain debtors turnover ratio. What is its significance? **3 + 2**
(iii) Prepare a trial balance of Durga Ltd. and interpret it from the following extracts as on 31-03-18 (all amounts are in '000 rupees): **9 + 2**

Cash in hand	5,000	Cash at bank	2,000
Bills receivable	3,000	Office supplies	3,000
Office equipment	15,000	Bank loan	15,000
Bills payable	1,000	Share capital	10,000
Consulting revenue	9,400	Rent expense	3,000
Salaries	2,500	Wages	1,200
Utilities expense	600		

3. Answer any one from (a) and (b) in this block

1 x 15 + 15

- (a) Solve the problem of acceptance of the following two mutually exclusive projects on the basis of internal rate of return (IRR). IRR should be calculated through trial and error method. Year-end cash flows and salvage values are in crore of rupees. **15**

Project Shiva:

Year	0	1	2	3
Cash Outflow	-220			
Cash Inflow		91	130	105
Salvage Value				10

Project Shakti:

Year	0	1	2	3
Cash Outflow	-198			
Cash Inflow		87	110	84
Salvage Value				18

- (b) (i) Use LIFO method of materials pricing for Satya Narayan Traders based on the following data:
Jan 1 – Opening Balance – 600 units @ Rs. 8, Jan 5 – Item Received – 200 units @ Rs. 8.5, Jan 12 – Item Received – 150 units @ Rs. 8.20.
Issues of materials: Jan 4 – 300 units, Jan 10 – 400 units, Jan 15 – 100 units, Jan 19 – 50 units. **10**

- (ii) Solve the same problem with weighted average method instead of LIFO. Make your critical comments. 4 + 1

- 4. Answer any one from (a) and (b) in this block** 1 x 15 = 15
- (a) Explain functions of commercial banks. 15
- (b) What are the features of a joint stock company? Describe advantages and disadvantages of sole proprietorship organizations. Explain FDI approval procedure through joint ventures. 5 + 5 + 5

- 5. Answer any one from (a) and (b) in this block** 1 x 20 = 20

- (a) For the production of 10,000 units of Surya Company, the following is the budgeted expenses:

	Rs. per unit
Direct materials	30
Direct labour	15
Variable overhead	12.50
Fixed overhead	7.50
Variable expenses (direct)	2.50
Selling expenses (10% fixed)	7.50
Administration expenses (Rs. 25,000 fixed for all levels of production)	2.50
Distribution expenses (20% fixed)	<u>2.50</u>
Total cost of sales per unit	80.00

Develop a flexible budget for 14,000 units of production and compare with that of 10,000 units of production with critical comments.

15 + 5

- (b) Develop a cost sheet from the following particulars in the book of Saraswati Publishers (in '000 rupees):

Raw materials purchased = 1,20,000	Paid freight charges = 10,000
Wages paid to labourers = 35,000	Directly chargeable expenses = 25,000
Factory on cost = 20% of prime cost	General & admin. Expenses = 4% of factory cost
Selling & distribution expenses = 5% of cost of production	
Profit = 10% of sales	

	Opening stock		Closing stock	
Raw materials	15,000		20,000	
Work in progress	17,500		24,000	
Finished goods	20,000		27,500	20