Total no. of Pages: 04 Roll no. 2K21/ME/167

VI SEMESTER

B.Tech.

END TERM EXAMINATION May-2024

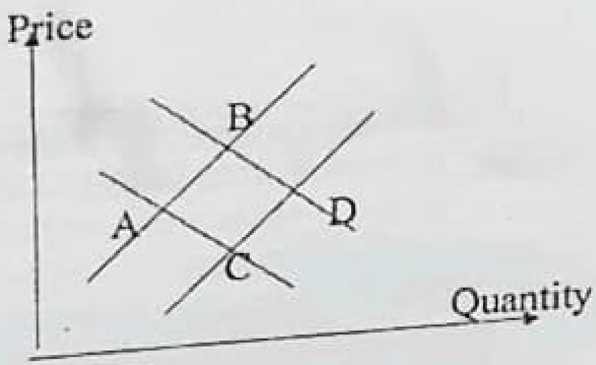
HU302a Engineering Economics

Time: 3:00 Hours Max. Marks: 50

Note : Answer any five questions.
All questions carry equal marks.
Assume suitable missing data, if any.

Q.1 a What do you mean by UN's Sustainable Development Goals (SDGs)? Design a plan to achieve anyone of the SDGs in the university Campus.
[2+3=5][CO#1&6]

b



Equilibrium has moved from A to B and then, B to D. Discuss the forces and probable reasons for it. [5][CO#2&5]

Q.2 a What do you mean by Opportunity Cost? Discuss Opportunity Cost of following:
(i) Two graduate engineers opted to become entrepreneur after graduation.
(ii) They started their enterprise in the outhouse of their building.
(iii) Invested their own money which they earned from online work during their college times. [2+3=5][CO#2&5]

b The accounts of XYZ manufacturing LTD. for the year ended 31st March 2023 show following:

Particular	Rs.
Stock of Material on 01.4.2023	87,200
Materials purchased	369000
Drawing office salaries	40000
General office salaries	15000
Bad debts written off	12000
Salesperson's salary & commission	17000
Depreciation written off of furniture	10000
Rent, tax and insurance of factory	41900
Productive Wages	176400
General expenses	40000
Gas and water (factory)	2680
Travelling expenses	2680
Managers Salary	75000
Depreciation of plants and tools	9,100
Cash discount allowed	4060
Repair of plats and tools	6230
Carries outwards	6030
Direct expenses	10010
Rent, taxes, insurance (office)	2800
Gas, water (office)	560
Stock of material 31.3.2022	87920

Calculate (i) Cost of material consumed (ii) prime cost (ii) Factory Cost (1+2+2)[CO#4]

Q.3 a "Ms. X has just started her start-up and she will achieve the break-even by the end of 2028". What does it mean? What precautions Ms. X should take? Discuss if Ms. X is stationed at Delhi. [2+3=5] (CO#1 & 3)

b The fixed cost for the years, 2024-25 is 8,00,000. Variable Cost per unit is Rs. 40. The estimated sale for the period are valued at Rs. 20,00,000. Each unit sells at Rs. 200.

(i) Find the Beak-even point.

(ii) If Rs. 16, 00,000 will be the likely sales turnover for the next budget period, calculate the estimated contribution and profit.

(iii) If a profit target of Rs. 6,00,000 has been budgeted, compute the turnover required. [2+3=5][CO#1&3]

Q.4 a Differentiate between Gross Domestic Product (GDP) and Gross National Product(GNP). Discuss main components of GDP using the income approach. [2+3=5][CO#1&3]

b Mr. X decides to make semi-annual payments of Rs. 50,000 each into a bank account that pays an annual interest rate of 8% compounded weekly. How much money will Mr. X has accumulated in this bank account at the end of 20 years. [2+3=5][CO#1&4]

Q.5 a Briefly explain five functions of Money in an economy. [5][CO#1&3]

b Two years ago, a machine was purchased at a cost of Rs. 4,00,000 to be useful for ten years. Its salvage value at the end of its life is Rs. 60,000. The annual maintenance cost is Rs. 60,000. The market value of the present machine is Rs. 3,20,000. Now, a new machine to cater to the need of the present machine is available at Rs. 380,000 to be useful for eight years. Its annual maintenance cost is Rs. Rs. 45,000. The salvage value of the new machine is Rs. 40,000. Using an interest rate of 11%, find whether it is worth replacing the present machine with the new machine? [5][CO#5]

Q.6 a What are the differences between International and Domestic trade? Are you against or in favour of opening up of the economy? Give reasons for your answer [2+3=5][CO#2&5]

b The following table shows the output of cocoa and rubber that is produced by two countries 'X' and 'Y'.

Countries	Cocoa (tons)	Rubber (tons)
X	550	2,000
Y	550	750

Suppose the resources are divided equally between the two products

i. Which country has an absolute advantage in production of cocoa?

ii. Calculate the opportunity cost of producing one ton of cocoa and rubber in each country.

iii. Construct the output table after specialisation. [1+2+2=5][CO#1&3]

Q.7 a What do you mean by Fiscal Policies? Describe when Government practice fiscal policies. [2+3=5][CO#1&3]

b The following data is for two mutually exclusive investment alternatives X and Y associated with a small engineering project.

Total no. of Pages: 03 Roll no. 57

SIXTH SEMESTER

B.Tech

END TERM EXAMINATION May-2023

HU-302 Engineering Economics

Time: 03:00 Hours Max. Marks: 50

Note : All questions carry equal marks. Answer any five questions Assume suitable missing data, if any.

1.1 Discuss role of engineering and technology in achieving Sustainable Development Goal 2030. [5][CO#3]

1.2 a. The value of a machine depreciates from Rs. 16560 to Rs. 6245 in 6 years. What is the annual rate of depreciation? [2.5+2.5=5] [CO# 1]

b. A company hardware company purchases computer screen at a cost of Rs. 4500/screen. In case the company makes it, the fixed and variable cost would be Rs. 40,00,00/- and Rs. 2000/ screen respectively Should the manufacturer make or buy the screen, if the annual demand is of 1500 computers?

2.1 Write five salient features of the Indian economy. [5][CO# 1]

2.2 A person deposits Rs. 200 at the end of every month for 5 years in a saving bank account that pays interest @ 4% p.a. compounded monthly. Find the amount in his account at the end of 5 years. [5][CO#2]

3.1 What do you mean by Fiscal Policy? How companies can be encouraged to opt for green technology through using Fiscal Policy. Discuss. [2.5+2.5=5] [CO#1and3]

3.2 A company has to replace a machine in the production line after 11 years at the cost of Rs. 60,00,000/-. It plans to deposit an equal amount at the end of every year for next 11 years at an interest rate of 11 per cent which is compounded annually. Find the equivalent amount that must be deposited at the end of every year for the next 11 years. [5][CO#2]

	A (in Rs)	B (in Rs)
Capital investment	3,500	5,000
Annual Revenue	1,900	2,500
Annual expenses	6,45	1,020
Useful life	4	6
Salvage value	0	0

If the annual interest rate =10% per year, show which alternative is more desirable by using equivalent worth methods [5][CO#4]

45,000. The salvage value of the of the new machine is Rs. 40,000/- Using an interest rate of 11%, find whether it is worth replacing the present machine with new machine?

7.1 Discuss socio-economic factors which need to be considered while deciding foreign location of your company. [5][CO#3]

.2 What amount of money saved today will yield Rs. 40,000 in the third year and Rs. 55,000/- after five years at the 12% rate of interest compounded annually. [5][CO#2]

4.1 What do you mean by Labour Intensive and Capital Intensive production process? Discuss with example. [5][CO#1]

4.2 A machine costs a company Rs. 10,000 and its expected life is 5 years. Alternatively, the machine can be obtained by leasing at the annual rent of Rs. 2500. If the rate of interest is 12% per annum, find which alternative is preferable to the company? [5][CO#2]

5.1 You are CEO of an Oligopolistic company. What are the factors you should consider while deciding price of your product. [5][CO#3]

5.2 Prepare a cost sheet showing the total cost and per tonne cost of paper manufactured by ABC paper mills Ltd. for the month of March 2023. There are 26 working days in the month. Also find the profit earned by the company. The details are as under: [5][CO# 2]

Direct Raw Material	Paper pulp	6000 tons @ Rs. 900/ton
Direct Labour Cost	Skilled workers	280@783.00/day
	Semi Skilled	300@ 712.00/ day
	Unskilled	470@646.00/ day
Direct Expenses	Equipment hire charges	Rs. 12000/ day
	Dyes	Rs. 650 per tonne of raw material input
Overheads	Variable	@ 50% of Direct Wages
	Fixed	Rs. 270000/month
Administrative overheads		12% of factory or work cost
Selling and Distribution overheads		20% of the prime cost
Profit		10% of the total cost

6.1 Discuss Business cycle. How engineers can help to bring the country back to the normal situation? Discuss [2.5+2.5=5] [CO#1and3]

6.2 Two years ago, a machine was purchased at a cost of Rs. 4,00,000 to be useful for ten years. Its salvage value at the end of its life is Rs. 60,000. The annual maintenance cost is Rs. 60,000. The market value of the present machine is Rs. 3,20,000. Now a new machine to cater to the need of the present machine is available at Rs. 3,80,000 to be useful for eight years. Its annual maintenance cost is Rs. [5] [CO#2]