KIIT Deemed to be University
Online End Semester Examination(Autumn Semester-2020)

Subject Name & Code: Engineering Econonomics HS 2002
Applicable to Courses: B.Tech 5th Semester

Full Marks=50   **Time:2 Hours**

SECTION-A(Answer All Questions. Each question carries 2 Marks)

Time:30 Minutes   **(7×2=14 Marks)**

Question No	Question Type (MCQ)	Question	CO Mapping	Answer Key (For MCQ Questions only)
Q.No:1		1.Suppose goods X and Y are substitutes. Which of the following is TRUE? a) An increase in the price of X will result in a decrease in the equilibrium price of Y. b) An decrease in the price of X will result in an increase in the equilibrium quantity of Y. c) An increase in the price of X will result in an increase in the equilibrium quantity of Y. d) More than one of the above is true.	CO1	(c)
		2.Which of the following statements about inferior goods is/are FALSE? I. Inferior goods are those that we will never buy, no matter how cheap they are. II. Inferior goods are those that we buy more of, if we become poorer. III. Inferior goods are those that we	CO1	(b)

		buy more of, if we become richer. a) I only b) III only. c) I and III only. d) I, II, and III.		
		3.A good with a vertical demand curve has a demand with a) infinite elasticity. b) unit elasticity. c) zero elasticity. d) varying elasticity	CO1	(c)
		4. To say that turnips are inferior goods means that the income elasticity a) is definitely greater than 1. b) is negative. c) is positive but could be greater than or less then (or equal to) 1. d) is definitely between 0 and 1.	CO1	(b)
Q.No:2		1. If a rightward shift of the supply curve leads to a 6 percent decrease in the price and a 5 percent increase in the quantity demanded, the price elasticity of demand is a) 0.83 b) 0.30 c) 0.60 d) 1.20	CO2	(a)
		2. A 10 percent increase in the quantity of spinach demanded results from a 20 percent decline in its price. The price elasticity of demand for spinach is a) 0.5 b) 20.0 c) 2.0 d) 10.0.	CO2	(a)
		3. A 20 percent increase in the quantity of pizza demanded results from a 10 percent decline in its price. The price elasticity of demand for pizza is a) 2.0 b) 10.0 c) 0.5 d) 20.0.	CO2	(a)
		4.Suppose a rise in the price of peaches from $5.50 to $6.50 per bushel decreases the quantity demanded from 12,500 to 11,500 bushels. The price elasticity of demand is(by mid-point method) a) 0.5 b) 1000 c) 2.0 d) 1.0.	CO2	(a)
Q.No:3		1.Given an investment of Rs 10000 for a period of one year, it is better to invest in a scheme that pays:	CO3	(d)

		a) 12% interest compounded annually. b) 12% interest compounded monthly. c) 12% interest compounded weekly. d) 12% interest rate weekly.		
		2.If the interest rate on a loan is 1% per month, the effective annual rate of interest is: a) 12% b) 12.36% c) 12.68% d) 12.84%	CO3	(c)
		3.The difference between effective annual rate of interest with monthly and quarterly compounding when nominal rate of interest is 10% is: a) 0.10% b) 0.14% c) 0.21% d) 0.09%	CO3	(d)
		4. If $400 is invested for 5 years at 6% per annum compounded weekly, what is the mature amount? a) 632.36 b) 539.31 c) 523.34 d) 554.23	CO3	(b)
Q.No:4		1. With respect to production, the short run is best defined as a time period a. lasting about six months. b. lasting about two years. c. in which all inputs are fixed. d. in which at least one input is fixed.	CO2	(d)
		2. In the long run, all factors of production are a. variable. b. fixed. c. materials. d. rented.	CO2	(a)
		3. If the average productivity of labor equals the marginal productivity of labor, then a. the average productivity of labor	CO2	(a)

		is at a maximum. b. the marginal productivity of labor is at a maximum. c. Both A and B above. d. Neither A nor B above.		
		4. Marginal costs is the change in total cost resulting from unit change in…….. a. output b. input c. both(a) and (b) d. None of these	CO2	(a)
Q.No:5		1. A firm will shut down in the short run if: a. fixed costs exceed revenues. b. total costs exceed revenues. c. it is suffering a loss. d. variable costs exceed revenues.	CO3	(d)
		2. Which of the following is not a valid option for a perfectly competitive firm? a. Increasing its output. b. Decreasing its output. c. Increasing its price. d. Increasing its resources.	CO3	(c)
		3. A firm that is producing at the lowest possible average cost is always: a. Earning an economic profit. b. Productively efficient. c. Dominating the other firms in the market. d. Not producing enough output.	CO3	(b)
		4. Perfect competition is an industry with a. a few firms producing identical goods. b. many firms producing goods that differ somewhat. c. a few firms producing goods that differ somewhat in quality. d. many firms producing identical goods.	CO3	(d)
Q.No:6		1. Given the Purchase value(P)=Rs	CO2	(c)

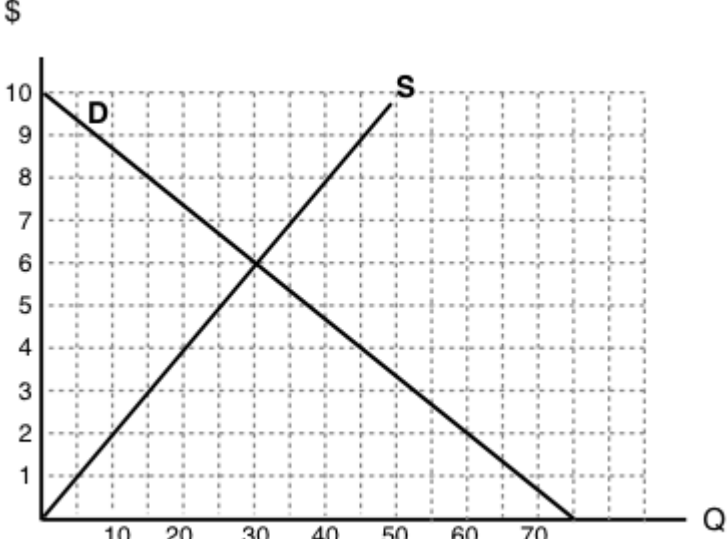|				
		20000 and salvage value(S)=Rs 500, what is the Dt and Bt combination for the 1st year by Straight Line Method of Depreciation? a) 3000, 11500 b) 3900 , 8300 c) 3900,16100 d) 3200 , 15200		
		2. Given the Purchase value(P)=Rs 20000 and salvage value(S)=Rs 500, what is the Dt and Bt combination for the 2nd year by Straight Line Method of Depreciation? a) 3900, 12200 b) 3900 , 8300 c) 3900,16100 d) 3200 , 15200	CO2	(a)
		3. Given the Purchase value(P)=Rs 20000 and salvage value(S)=Rs 500, what is the Dt and Bt combination for the 3rd year by Straight Line Method of Depreciation? a) 3000, 8000 b) 3900 , 8300 c) 3500,8200 d) 3200 , 8100	CO2	(b)
		4. Given the Purchase value(P)=Rs 20000 and salvage value(S)=Rs 500, what is the Dt and Bt combination for the 4th year by Straight Line Method of Depreciation? a) 3800, 6500 b) 3900 , 8300 c) 3900,4400 d) 3200 , 4400	CO2	(c)
Q.No:7		1.Social costs are those costs a) not borne by the firms b) incurred by the society c) health hazards d) all of these	CO3	(d)
		2. Above the equilibrium price a) S < D b) S > D c) S = D d) none	CO3	(b)
		3. Under perfect competition, the demand curve is a) Upward sloping b) horizontal c) downward sloping d) vertical	CO3	(b)
		4.When the decrease in the price of one good causes the demand for another good to decrease, the goods are:	CO3	(c)

		a. Normal		
		b. Inferior		
		c. Substitutes		
		d. Complements		

SECTION-B(Answer Any Three Questions. Each Question carries 12 Marks)

Time: 1 Hour and 30 Minutes   **(3×12=36 Marks)**

Ques tion No	Question	CO Mapping (Each question should be from the same CO(s))
Q.N o:8	**Q.No:8-1st question** 1. Answer the following questions referring to the supply and demand curve diagram below. a. What is the equilibrium price here in the diagram? b. At the price $8, what is the market situation(shortage or surplus) and by how many units? 2. Mr. X takes a loan of Rs 50,000 from HDFC Bank. The rate of interest is 10% per annum. The first installment will be paid at the end of year 1. Determine the amount of equal annual installments if Mr. X wishes to repay the amount in five installments. What is the future worth of this amount? 3. Explain any two quantitative methods adopted by the central bank to control inflation.	(4+4+4) CO4, CO5 and CO6

Q.No:8 -2nd question

1. The table below gives the demand schedule for snow peas. Answer the questions that follows.

Price (dollars per bushel)	Quantity demanded (bushels)
8	2000
7	4,000
6	6000
5	8000
4	10000
3	12000

a .What is the price elasticity of demand between $6.00 and $7.00 per bushel?
b. If the price of snow peas falls from $4.00 to $3.00 a bushel, what will be the effect on total revenue? What does this show about its elasticity?

2. Compute the future value of following given cash flows assuming an interest rate of 10% compounded annually.

Years	0	1	2	3	4	5	6	7	8	9	10
Cash flows in $	-	-	200	-	200	-	200	-	200	-	200

3. Explain the stage in the Short run production function in which the Total product of the producer gets optimized with adequate diagram.

Q.No:8-3rd question

1. a) Demand and supply in a market are described by the equations:
$Qd = 66-3P$ and $Qs = -4+2P$.
Find the equilibrium price and quantity.

b)   What is the equilibrium P and Q if a per unit tax of t=5 per unit is imposed?

2. You want to buy an ordinary annuity that will pay you 4000 a year for the next 20 years. You expect annual interest rates will be 8% over that time period. What should be the maximum price you would be willing to pay for this scheme now? What is the total future worth of this scheme?

3. Explain the concept of 'Margin of Safety' of a producer with adequate diagram.

Q.No:9	**Q.No:9- 1st question**	(4+4+4) CO4, CO5 and CO6
	1. Suppose the GDP at market price of a country in a particular year was Rs 1,100 crores. Net Factor Income from Abroad was Rs 100 crores. The value of Indirect taxes – Subsidies was Rs 150 crores and National Income was Rs 850 crores. Calculate the aggregate value of depreciation. 2. You now have $8,000 in a bank account in which you made one single deposit at 10% per annum exactly 40 years ago. How much was your investment. If would have generated this same value with annual deposit, what should be your investment? 3. Explain how the banking system of an economy can facilitate stabilization of the economy.	

Q.No:9-2nd question

1. Suppose the market demand for milk is Qd=40−4P, where Qd is millions of gallons demanded and P is the price per gallon. Suppose the market supply for milk is Qs= −40/3+20/3P

a. What is the equilibrium price?

b. Suppose a tax of $1 per gallon of milk is imposed in this market. What is the new price paid by consumers?

2. You borrow $80,000 to be repaid in equal yearly installments for 15 years at 9% per annum. What is your instalment amount? What is the future worth of this amount?

3. Given the purchase value of an asset as $20000 with a salvage value of $800 at the end of the 5th year, find the Depreciation(Dt) and the book value(Bt) at the end of the various years by Declining Balance method at a constant percentage of depreciation of 10%.

Q.No:9-3rd question

1. Suppose the demand and supply equations of a commodity X in a perfectly competitive market are given by :
Qd = 1700 – 2P
Qs = 1300 + 3P
Calculate the value of equilibrium price and equilibrium quantity of the commodity X.

2. . What is the total value of the following set of cash flows today at 8.5% rate of interest per annum ?

Year	0	1	2	3	4
Cash flows(in $)	- 1000	200	400	600	800

3. Explain the concept of 'Cost Push Inflation' with adequate diagram.

<table>
<tr><td>Q.N
o:10</td><td>Q.No:10-1st question</td><td>(4+4+4)
CO4, CO5 and
CO6</td></tr>
</table>

Q.No:10-1st question

1. . If the Purchase value of an asset is $10000 with a salvage value of $400 at the end of the 6th year, compute the Depreciation(Dt) and Book value(Bt) for the various years by Sum of the Years Digit method.
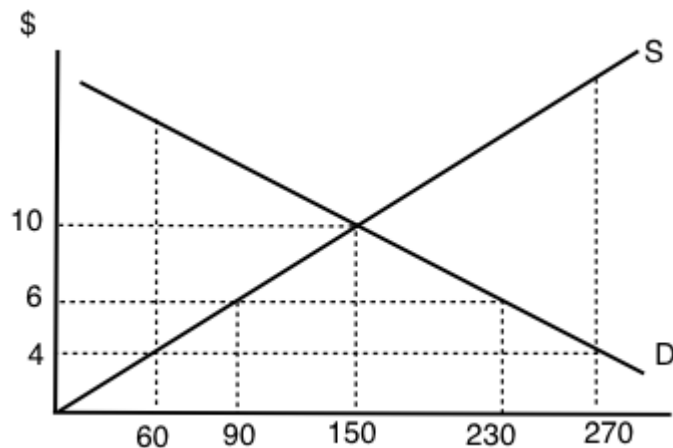
2. a) Complete the following schedule.
b) Where is the Profit maximum for this producer. Explain.

Output	Price per unit	Total Revenue	TFC	TVC	TC	AC	MC
0	100			100			
1	90			130			
2	80			158			
3	70			183			
4	60			208			
5	50			253			
6	40			308			
7	30			368			
8	20			468			

3. Explain the 'Break Even point' of a producer with diagram.

Q.No:10-2nd question

1. Consider the supply and demand curve diagram below.

a. What is the equilibrium price and quantity?

b. If the price of this good is $6, then what is the market situation(shortage/surplus) and by how much units?

2.

From the following information about a firm, find the firms equilibrium output of the firm in terms of Marginal Cost(MC) and Marginal Revenue(MR). Show the MC and MR curves with diagrams.

Output (units)	Total revenue(Rs)	Total cost(Rs)
1	7	8
2	14	15
3	21	21
4	28	28
5	35	36

3. Explain where should a perfectly competitive firm 'shut down', with adequate diagram.

Q.No:10-3rd question

Q1. Producer A has a fixed cost of $40000 per year and a variable cost of $60 per unit. Producer B has a variable cost per unit of $10. If the total costs of the two producer break even at a production rate of 2000 units per year, what is the fixed cost of machine B?

Q2. If a person invests Rs 50000 at the end of the first year and thereafter increases his investment by Rs 5000 each year, what is the maturity amount he will receive at the end of the 15th year at 8% rate of interest?

Q3. Compare and contrast the features of a 'Perfectly competitive' and a 'Monopoly' market(explain minimum 4 points)

Q.N o: 11	**Q.No:11 1st question** **Q1.** The fixed costs at Company X are $1 million annually. The main product has revenue of $8.90 per unit and $4.50 variable cost. (a) Determine the break-even quantity per year, and (b) Annual profit if 250000 units are sold. Q2. Explain the concept of 'Demand Pull inflation' with diagram. Q3. The following table shows the total revenue and total cost schedules of a competitive firm. Calculate (a)the profit at each output level and (b) determine the market price of the goods.	**(4+4+4) CO4, CO5 and CO6**

Quantity sold in units	0	1	2	3	4	5	6	7
TR(in Rs)	0	5	10	15	20	25	30	35
TC(in Rs)	5	7	10	12	15	23	33	40

Profit(Rs)	?	?	?	?	?	?	?	?
Price per unit (in Rs)	?	?	?	?	?	?	?	?

Q.No:11 2nd question	**(4+4+4) CO4, CO5 and CO6**
Q1. A Monopolist has the cost function TC= 200Y +15Y^2 and faces the demand function given by p=1200 -10Y (where Y =output and p=price per unit) , find (a) the profit maximizing output and price? (b) What is its maximal profit? Q2. Explain the role of government in stabilizing the economy of any country. Q3. Given the initial cost on a project is $ 20000 with Returns of $12000 each year for two years of its operation before winding up, find the Internal Rate of return by Trial and Error method.	

Q.No:11 3rd question	**(4+4+4) CO4, CO5 and CO6**
Q1. Given the following details, find the Net presents value of the project and suggest if it can be considered on NPV criteria at 10% per annum. 	Initial cost($)	Return (in $)Year 1	Return (in $)Year 2	Return (in $)Year 3	Return (in $) Year 4	Salvage value($)	 |---|---|---|---|---|---|
3000	1000	1200	800	800	20 | Q2. Write short notes on: a) Concept of Short run and long run production function with example. b) Shapes of average fixed cost, average variable cost and average cost with diagrams. Q3. Find the future worth of the following cash flows over the years at 8% per annum. | Year	0	1	2	3 | |---|---|---|---|---|
Cash flows	-100000	60000	10000	60000		