Sample Question Format

(For all courses having end semester Full Mark=50)

KIIT Deemed to be University

Online End Semester Examination(Autumn Semester-2020)

Subject Name & Code: **Engineering Economics & HS2002**

Applicable to Courses: 3rd Sem BTech

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/ SAT)	Question	CO Mapping	Answer Key (For MCQ Questions only)
Q.No: 1	MCQ	1. Four central problems of an economy are what to produce, ----------, for whom to produce and Economic growth problems. (a) Who will to produce (b) How to produce (c) When to produce (d) Where to produce	CO1	(b)

	MCQ	2. ---------- goods are the goods whose demand is negatively related to income. (a) Complement (c) Normal (b) Substitute (d) Inferior	CO1	(d)
	MCQ	3. Which of the following pairs is a substitute? (a) Mobile phone and charger (b)Wool and cotton (c) Salt and pepper (d) Tea and sugar	CO1	(b)
	MCQ	4. Movement along the demand curve arises because of change in the ----------. (a) Consumer's income (c) Taste and preference of the consumer (b) Prices of related goods (d) Price of the good itself	CO1	(d)
Q.No: 2	MCQ	5. If with the increase in the price of a good from ₹ 30 to ₹ 50, quantity demand for that good decreases from 1000 units to 800 units, then price elasticity of demand will be ----------. (a) 0.8 (c) **0.3** (b) 0.06 (d) 0.5	CO2	(c)
	MCQ	6. Demand function for a commodity is given as Q = 3000 + 25Y (Q = Quantity demand for the commodity, Y = Income of the consumer per month). If a consumer's monthly income is ₹ 42,000 per month, then income elasticity of demand is ----------. (a) 0.5 (c) 0.7 (b) 0.9 (d) 0.4	CO2	(b)
	MCQ	7. If demand for coffee increases form 5000 units to 6000 units due to a rise in the price of tea from ₹ 300 to ₹ 350 per 250 grams pack, then cross elasticity of demand between tea and coffee will be -------.	CO2	(c)

		(a) 4.5 (c) 1.2 (b) 1.5 (d) 3.2		
	MCQ	8. Demand function for a commodity X is $Q_X = 10,000 – 5P_X$ (Q_X = Quantity demand for the commodity X, P_X = Price of the commodity X). If price of the commodity is ₹ 200 per unit, then elasticity of demand is ----------. (a) 0.1 (c) 2 (b) 0.13 (d) 2	CO2	(a)
Q.No: 3	MCQ	9. A company takes a loan of ₹ 60,00,000 at 9% interest rate compounded annually. The installment amount is ---------- as the number of installment s 20. (a) ₹ 5,26,275 (c) ₹ 6,57,150 (b) ₹ 4,30,000 (d) ₹ 5,20,160	CO1, CO2	(c)
	MCQ	10. A person invests an equal sum of ₹ 20,000 at the end of every year for 15 years. If the interest rate is 8% compounded annually, then the maturity value of his account is----------. (a) ₹ 5,43,042.2 (c) ₹ 4,23,050.3 (b) ₹ 7,35,060.7 (d) ₹ 6,20,040.5	CO1, CO2	(a)
	MCQ	11. ---------- is the future value of ₹ 3,00,000 after 10 years at11% interest rate compounded annually if the compounding is monthly. (a) ₹ 7,52,432.5 (c) ₹ 9,45,856.8 (b) ₹ 8,96,672.6 (d) ₹ 6,23,678.9	CO1, CO2	(b)
	MCQ	12. If a credit plan charges 25% interest rate compounded annually, then the effective interest rate is---------- as the compounding is quarterly. (a) ₹ 25.23% (c) ₹26.45% (b)₹ 24.62% (d) ₹ 27.44%	CO1, CO2	(d)
Q.No: 4	MCQ	13. When plotting marginal and average product curves, the ---------- product	CO1, CO2	(d)

		curves always crosses the ---------- product curve at its ---------- point. (a) average, marginal, minimum (b) marginal, average, minimum (c) average, marginal, maximum (d) marginal, average, maximum		
	MCQ	14. Which of the following statements on the relationship between total product (TP), average product (AP), and marginal product (MP) is incorrect? (a) TP reaches a maximum when the MP becomes zero. (b) AP reaches a maximum, before TP reaches a maximum. (c) AP continues to rise, so long as TP is rising (d) MP cuts AP at the maximum point of AP.	CO1, CO2	(c)
	MCQ	15. When output increases in higher proportions than the increases in inputs, the returns to scale are ----------. (a) decreasing (c) negative (b) increasing (d) constant	CO1, CO2	(b)
	MCQ	16. In the short-run, product curves have all the following characteristics, except ---------- (a) total product is at its maximum when marginal product equals zero. (b) total product begins to decrease when average product begin to decrease. (c) average product is at its maximum when average product equals marginal product (d) when the average product equals the marginal product and both are positive, then total product must be rising.	CO1, CO2	(b)
Q.No: 5	MCQ	17. In the short-run, a firm which produces 200 units of output has an average total cost of ₹ 500 and average variable cost	CO1, CO2, CO_3	(a)

		of ₹ 300. The firm's total fixed cost is----------. (a) ₹ 40,000 (c) ₹ 4,000 (b) ₹ 30,000 (d) ₹ 50,000		
	MCQ	18. A firm has total cost of production of ₹ 200,000 by producing 500 units of output in the short-run. If average fixed cost is ₹ 100, then average variable cost is----------. (a) ₹ 500 (c) ₹ 300 (b) ₹ 400 (d) ₹ 600	CO1, CO2, CO_3	(c)
	MCQ	19. If a firm produces 1000 units of output having average fixed cost of ₹ 600 and average variable cost of ₹ 400 in the short-run, then firm's total cost of production is ----------. (a) ₹ 10,00,000 (c) ₹ 12,00,000 (b) ₹ 15,00,000 (d) ₹ 20,00,000	CO1, CO2, CO_3	(a)
	MCQ	20. A firm has average cost of ₹ 50,000. If the total fixed cost and total variable cost of the firm are ₹ 60,00,000 and ₹ 40,00,000 respectively in the short-run, then the firm produces ---------- units of output. (a) 200 (c) 300 (b) 400 (d) 600	CO1, CO2, CO_3	(a)
Q.No: 6	MCQ	21. A firm has a cost function of $C = 10 + 30Q - 2Q^2$ in the short-run under perfectly competitive market. If price of the product prevailing in the market is ₹ 10, then firm will maximize its profit with --------- units of output. (a) 5 (c) 8 (b) 6 (d) 10	CO1, CO2, CO_3	(a)
	MCQ	22. If a firm under perfectly competitive market has a revenue function of TR = 5Q and cost function of $TC = 50 + 15Q - 5Q^2$, then at ---------- level of output		(b)

		firm will maximize its profit. (a) 2 (c) 4 (b) 1 (d) 6		
	MCQ	23. A firm has a cost function of C = 10 + 30Q – $2Q^2$ in the short-run under perfectly competitive market. If price of the product prevailing in the market is ₹ 10, then firm will maximize its profit with --------- units of output. (c) 5 (c) 8 (d) 6 (d) 10	CO1, CO2, CO_3	(a)
	MCQ	24. A monopolist has a demand function of P = 20 – 5Q and cost function of TC = 500 + 160Q – $40Q^2$ in the short-run. At --------- level of output the monopolist will earn maximum profit? (a) 2 (c) 6 (b) 4 (d) 8	CO4	(a)
Q.No: 7	MCQ	25. ---------- - Depreciation is NDP. (a) GNP (c) GDP (b) NNP (d) GNP_{FC}	CO1, CO2, CO_3	(c)
	MCQ	26. GDP_{MP} + NFIA is ----------. (a) GNP_{FC} (c) NDP_{MP} (b) NNP_{MP} (d) GNP_{MP}	CO1, CO2, CO_3	(d)
	MCQ	27. GNP_{FC} + ---------- = GNP_{MP} (a) Depreciation (c)NFIA (b) Net indirect taxes (d) Subsidy	CO1, CO2, CO_3	(b)
	MCQ	28. NNP_{FC} + ---------- = GNP_{FC} (a) Depreciation (c)NFIA (b) Net indirect taxes (d) Subsidy	CO1, CO2, CO_3	(a)

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

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

<table>
<tr><th>Question No</th><th>Question</th><th>CO Mapping (Each question should be from the same CO(s))</th></tr>
<tr><td>Q.No:8</td><td>From the following information forecast sales for the year 2021 and 2024
<table>
<tr><td>Year</td><td>2015</td><td>2016</td><td>2017</td><td>2018</td><td>2019</td><td>2020</td></tr>
<tr><td>Sales(in 000)</td><td>25</td><td>32</td><td>47</td><td>53</td><td>70</td><td>85</td></tr>
</table>
Explain consumer’s equilibrium with suitable diagrams.

A firm is facing the following demand function:
Q = 2,00,000 – 500P(Where Q is the quantity and P is the price of the commodity per unit)
Find out:
(i) MR function
(ii) AR function
(iii) Price and quantity at which TR will be maximum.
(iv) Price and quantity at which MR is zero.</td><td>CO2, CO3</td></tr>
<tr><td>Q.No:9</td><td>From the following short-run production function find out optimal input combination if wage rate of the labour is ₹ 50 and price of capital is ₹ 60.
$Q = 200\ L^{0.5}\ K^{0.5}$(Where Q is the units of output produced, L is labour)
If the company is producing 1500 units of output, find out minimum cost.

A company has following sales and profit in 2010 and 2011.
<table>
<tr><td>Year</td><td>Sales(in ₹)</td><td>Profit(in ₹)</td></tr>
<tr><td>2010</td><td>2,50,000</td><td>50,000</td></tr>
<tr><td>2011</td><td>2,90,000</td><td>70,000</td></tr>
</table>
Find out:</td><td>CO_2, CO_3, CO_4</td></tr>
</table>

(i) P/V ratio
(ii) Fixed cost
(iii) Variable cost in 2010 and 2011
(iv) BES(Break Even Saes)
(v) Margin of safety in 2010 and 2011
(vi) Sales required to have a target profit of ₹ 30,000

If an equipment has been purchased at ₹ 4,00,000 having estimated salvage value of ₹ 80,000 at the end of its service life of 10 years find out the depreciation amount and book value for various years using sum-of-the year digit method of depreciation.

Q.No:10

From the following information find out which alternative will be selected on the basis of annual worth method if i = 20% compounded annually.

Particulars	Alternative A	Alternative B	Alternative C	Alternative D
Initial Cost(in ₹)	2,00,000	3,00,000	4,50,000	5,00,000
Life(in years)	15	15	15	15
Annual equal income(in ₹)	40,000	55,000	60,000	72,000
Salvage value(in ₹)	2000	6,000	9,000	10,000

CO_4, CO_5, CO_6

Consider the following table which summarizes data for two alternatives.

Particulars	First cost	Annual return	Life
Alternative 1	₹ 5,00,000	₹ 1,50,000	10 years
Alternative 2	₹ 8,00,000	₹ 2,50,000	10 years

Find the best alternative based on the rate of return method of comparison.

A government is planning a hydroelectric project for a river basin. Besides the production of electric power, this project will provide flood control, irrigation and recreation benefits. The estimated benefits and costs expected form the three alternatives under consideration are listed in the following table:

Particulars	A	B	c
Initial cost(in ₹)	10,00,00,000	15,00,00,000	25,00,00,000
Annual equivalent benefits and cost (i) Operating and maintena			

		nce cost	20,00,000	30,00,000	40,00,000
	(ii)	Power sales/year	1,00,00,000	1,50,00,000	1,90,00,000
	(iii)	Flood control savings	30,00,000	40,00,000	50,00,000
	(iv)	Irrigation benefits	40,00,000	55,00,000	60,00,000
	(v)	Recreation benefits	15,00,000	35,00,000	30,00,000
	If the interest rate is 10% and the life of the projects is estimated to be 40 years, by comparing thee BC ratios, determine which project should be selected.				
Q.No:11	What is inflation? Explain the causes of inflation.				CO_4, CO_5, CO_6
	Explain the functions of commercial banks.				
	Explain the functions of Reserve Bank of India(RBI).				