



KALINGA INSTITUTE OF INDUSTRIAL TECHNOLOGY
DEEMED TO BE UNIVERSITY, BHUBANESWAR – 24
(Decld. U/S 3 of UGC Act, 1956)
OFFICE OF THE CONTROLLER OF EXAMINATIONS

Sample Question Format

KIIT Deemed to be University
Online Mid Semester Examination(Autumn Semester-2021)

Subject Name & Code: HS 2002

Applicable to Courses: B.Tech

Full Marks=20

Time:1 Hour

SECTION-A(Answer All Questions. All questions carry 2 Marks)

Time:20 Minutes

(5×2=10 Marks)

<u>Question No</u>	<u>Question Type(MCQ/SAT)</u>	<u>Question</u>	<u>CO Mapping</u>	<u>KEY</u>																		
<u>Q.No:1 (a)</u>	<u>MCQ</u>	Law of supply includes A. Goods market only for a specified time B. Goods and Service market both for a specified time C. Goods market only for a specified time and price D. Goods and Service market both for a specified time and price	CO1	d																		
	<u>MCQ</u>	Rise and fall in demand is A. Shift in demand B. Movement in demand C. Both shift and movement in demand (situation specific) D. Neither shift nor movement	CO1	a																		
	<u>MCQ</u>	If supply of fish increases in the market, then the income of fish mongers A. Increases B. Decreases C. Remains constant D. Depends on other factors	CO1	d																		
	<u>MCQ</u>	If demand of fish increases in the market, then the income of fish mongers A. Increases B. Decreases C. Remains constant D. Depends on other factors	CO1	d																		
<u>Q.No:1 (b)</u>	<u>MCQ</u>	Following are the demand and supply data of a product obtained from a recent market research in the USA. <table><tr><td>Price(\$)</td><td>Demand (000)</td><td>Supply (000)</td></tr><tr><td>400</td><td>200</td><td>440</td></tr><tr><td>360</td><td>240</td><td>400</td></tr><tr><td>320</td><td>280</td><td>360</td></tr><tr><td>280</td><td>320</td><td>320</td></tr><tr><td>240</td><td>360</td><td>280</td></tr></table>	Price(\$)	Demand (000)	Supply (000)	400	200	440	360	240	400	320	280	360	280	320	320	240	360	280	CO2	a
Price(\$)	Demand (000)	Supply (000)																				
400	200	440																				
360	240	400																				
320	280	360																				
280	320	320																				
240	360	280																				

		200	400	240																
		<p>The equilibrium price of the product is</p> <p>(a)\$280</p> <p>(b)\$240</p> <p>(c) \$200</p> <p>(d) None of these</p>																		
	<u>MCQ</u>	<p>The demand and supply equations for a commodity are</p> <p>$Q = 1800 - 20P$ (Demand)</p> <p>$Q = 50P - 1000$ (Supply)</p> <p>The demand quantity at the equilibrium point is</p> <p>A. 2000</p> <p>B. (b)1000</p> <p>C. 1800</p> <p>D. None of these</p>				CO2 b														
	<u>MCQ</u>	<p>If the supply curve shifts to the left demand condition remaining unchanged then the market price</p> <p>A. Decreases</p> <p>B. Increases</p> <p>C. Remains the same</p> <p>D. None of these</p>				CO2 b														
	<u>MCQ</u>	<p>Suppose the demand for a product is more elastic. If the government imposes a GST (Indirect tax) then less burden of tax will fall on</p> <p>A. Seller</p> <p>B. Consumer</p> <p>C. Both seller and consumer</p> <p>D. None of these</p>				CO2 b														
<u>Q.No:1</u> <u>(c)</u>	<u>MCQ</u>	<p>You have drawn an indifference curve (IC) taking two bundles of goods X & Y and your IC is convex to the origin. The MRS_{XY} of your IC</p> <p>A. Increases</p> <p>B. Decreases</p> <p>C. Remains constant</p> <p>D. None of these</p>				CO3 b														
	<u>MCQ</u>	<p>You have drawn your budget line for the month of September, 2021. You have considered your money income (M), Price of X (P_x) and Price of Y (P_y). The slope of your budget line is</p> <p>A. P_x/P_y</p> <p>B. M/P_x</p> <p>C. M/P_y</p> <p>D. None of these</p>				CO3 a														
	<u>MCQ</u>	<p>In the normal case the indifference curve is convex to the origin because</p> <p>A. Goods are perfect substitutes</p> <p>B. Goods are not perfect substitutes</p> <p>C. Goods are perfect complementary</p> <p>D. None of these</p>				CO3 b														
	<u>MCQ</u>	<p>A consumer has the income of \$24. He wants to buy good X & Y and reach the equilibrium point. Price of X(P_x) is \$2 and Price of Y ($P_y$) is \$3. From the following table identify the equilibrium combination for the consumer.</p> <table border="1"> <tr> <td>Unit of goods</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr> <tr> <td>MUX/P_x</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td></tr> </table>				Unit of goods	1	2	3	4	5	6	MUX/P_x	10	9	8	7	6	5	CO3 c
Unit of goods	1	2	3	4	5	6														
MUX/P_x	10	9	8	7	6	5														

		<div>MUY/P_y</div> <div>8</div> <div>7</div> <div>6</div> <div>5</div> <div>4</div> <div>3</div>		
		(a) $3X + Y$ (b) $4X + 2Y$ (c) $6X + 4Y$ (d) $5X + 3Y$		
Q.No:1 (d)	MCQ	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. The aggregate value of depreciation will be a) 190 b) 200 c) 250 d) 280	CO4	b
	MCQ	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 160 crores and National Income was Rs 850 crores. The aggregate value of depreciation will be a) 190 b) 200 c) 250 d) 280	CO4	a
	MCQ	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 70 crores and National Income was Rs 850 crores. The aggregate value of depreciation will be a) 190 b) 200 c) 250 d) 280	CO4	d
	MCQ	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 100 crores and National Income was Rs 850 crores. The aggregate value of depreciation will be a) 190 b) 200 c) 250 d) 280	CO4	c
Q.No:1 (e)	MCQ	If the demand Function is : $P=5000 - 2Q$, the price elasticity at $P=1000$ is (a) 0.10 (b) 0.25 (c) 0.88 (d) 0.75	CO3	b
	MCQ	If the demand Function is : $P=5000 - 2Q$, the price elasticity at $P=1500$ is (a) 0.52 (b) 0.428 (c) 0.77 (d) 0.82	CO3	b
	MCQ	If the demand Function is : $P=5000 - 2Q$, the price elasticity at $P=2000$ is	CO3	c

		(a) 0.92 (b) 0.78 (c) 0.60 (d) 0.65		
	MCQ	If the demand Function is : $P=5000 - 2Q$, the price elasticity at $P=2500$ is (a) 1.25 (b) 1.50 (c) 1.05 (d) 1	CO3	d

SECTION-B(Answer Any One Question. Each Question carries 10 Marks)

Time: 30 Minutes

(1×10=10 Marks)

<u>Question No.</u> <u>(Question Bank)</u>	<u>Question</u>	<u>CO Mapping</u>
Question No:2	<p>(a) The demand function faced by a seller is $Q = 90 - 2P$ (Q=demand, P=price) (i) Find the price elasticity of demand at $P=10$. (ii) Would you suggest for an increase in price if the seller is interested to have more revenue? Why? [5+5] Ans: i. $Ep = 0.28 < 1$, so inelastic. ii. Yes, as the ep is < 1, increase in price will increase his revenue.</p> <p>(b) JHAMPURA deposits a sum of \$15600 at the end of each year for 11 years. His account is growing at 5.6% interest compounded annually. Find the compound amount that JHAMPURA will receive at the end of his deposit period. JAMES, his friend wants to realize the same amount at the end of 11 years but wishes to deposit a single amount today as he is a rich man. Find the amount that JAMES should deposit in his account today. Ans: F/A,i,n = 228633.6 P/F,i,n = 125555.85</p>	CO3
Question No:3	<p>(a) The Average Revenue function faced by a bike company is $AR = 7000 - 2Q$ (i) Find the Price and Quantity at which Total Revenue is maximum. (iii) Calculate the price elasticity of demand corresponding to the maximum point of Total Revenue. [5+5] Ans: $P = 3500$ and $Q = 1750$ units , at point of maximum TR At max TR, $Ep = 4$</p> <p>(b) Rohan deposited a sum of \$8000 in his account at the end of each year for first 15 years and increased his deposit amount to \$9000 each year for next 15 years. Find the Future value (F) of his deposits at the rate of interest of 8% compounded annually. Ans: Final Future value of his deposits = 933345.13</p>	CO3
Question No:4	<p>a) What is National Income? Explain in detail along with the formula:- GDP_{FC}, GNP_{FC}, NDP_{FC}, and NNP_{FC}. Why do we have four separate formulas to calculate national income at factor cost for a country? [5+5] Ans: Will mention the formulas of these National income concepts and explain the significance of having different measures.</p>	

	<p>(b) If you invest Rs 11,000 per year for 23 year at 6%, how much would you accumulate at the end of the period. What annual rate of return is the investment offering? What would have been the one time payment from you to accumulate the same amount after 23 years?</p> <p>Ans: F = 700287 P = 183333.22</p>	CO4																				
Question No:5	<p>a)A company wants to find the trend of its annual profit (Rs in thousands) over the years. The following table presents the information for the last 9 years. Fit a trend line to the given data by Least Square Method and estimate the value for 2022. [5+5]</p> <table><tr><td>Year</td><td>Annual Profit(Y)</td></tr><tr><td>2012</td><td>40</td></tr><tr><td>2013</td><td>45</td></tr><tr><td>2014</td><td>42</td></tr><tr><td>2015</td><td>41</td></tr><tr><td>2016</td><td>60</td></tr><tr><td>2017</td><td>30</td></tr><tr><td>2018</td><td>34</td></tr><tr><td>2019</td><td>25</td></tr><tr><td>2020</td><td>20</td></tr></table> <p>Ans: a =37.44 and b= -2.78 For 2022: Yc= 20.76</p> <p>b) A bank gives a loan to a company to purchase equipment which is worth Rs. 14 lakhs, at an interest rate of 10% compounded annually. This amount should be repaid in 20 yearly instalments. Find the instalment amount that the company has to pay to the bank. What is the total future worth of this loan amount and how much is the absolute difference of this amount from the loan taken?</p> <p>Ans: A/P,i,n = 164434.12 F/P,i,n = 9418499.92 Absolute difference from actual loan = 9418499.92 - 14lakh =8,018,499.92</p>	Year	Annual Profit(Y)	2012	40	2013	45	2014	42	2015	41	2016	60	2017	30	2018	34	2019	25	2020	20	CO4
Year	Annual Profit(Y)																					
2012	40																					
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2020	20																					
Question No:6	<p>a) The Demand and Supply functions of a product is given below. Demand function > $D = 30 - 2P$ Supply function > $S= 5 + 3P$ i. Find the equilibrium price and quantity. ii. Find the new price and quantity after an indirect tax of Rs 5/3 is imposed on the product. iii. Calculate the tax revenue collected by the government. [5+5]</p> <p>Ans. (i) P= 5 Q= 20 (ii) P'= 7 Q'= 16 iii. Tax collected= 26.66</p> <p>b) Suppose Mr. Sharme wants to take Rs 30 lakhs home loan from the bank at an interest rate of 9% compounded annually. If he wants to repay the whole amount along with interest in 25 annual installments, then find the installment amount. How much is the total future worth of this loan. Find its absolute actual difference from the loan taken.</p> <p>Ans: A = 305400</p>	CO4																				

	FW of this loan = 25,869,242 Difference with actual loan = 25869242 - 30L = 22,869,242	
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