

Total No. of printed pages = 3

HS 181506

Roll No. of candidate

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2023

B.Tech. 5<sup>th</sup> Semester End-Term Examination

All

ENGINEERING ECONOMICS

New Regulation (w.e.f 2017-18) &

New Syllabus (w.e.f. 2018-19)

Full Marks – 70

Time – Three hours

The figures in the margin indicate full marks for the questions.

GROUP A

1. Fill in blanks with appropriate words given in the brackets: (10 × 1 = 10)

- Growth based theory is related to \_\_\_\_\_.  
(Adam Smith/P.A Samuelson/Marshall)
- SEBI is the regulator of \_\_\_\_\_.  
(Money Market/capital market/Stock Market)
- \_\_\_\_\_ is not a method for calculation of National Income  
(Income/Expenditure/consumption)
- In National income identity (X-M) stands for \_\_\_\_\_.  
(net imports/net exports/export value)
- Indifference curve concave to the origin when \_\_\_\_\_.  
(MRS constant/MRS increases/MRS decreases)
- Pareto efficiency is \_\_\_\_\_.  
(efficiency of production/efficiency of market/efficiency of disbursement)
- Cross elasticity of demand for complementary is \_\_\_\_\_.  
(Positive/negative/zero)

[Turn over

- Selling cost is a feature of \_\_\_\_\_.  
(monopoly/monopolistic competition/oligopoly)
- Securities transaction tax is an example of \_\_\_\_\_.  
(direct tax/indirect tax/non-tax)
- In a Cobb-Douglas production function,  $Q = A_n A$  stands for \_\_\_\_\_.  
(total production/output elasticity/total factor productivity)

GROUP B

Answer any four questions.

(4 × 15 = 60)

2. Give answers

- Explain diagrammatically different types of Price Elasticity of Demand. (5)
  - Explain the relationship between Total Cost, Variable cost and Fixed Cost with suitable figure. (5)
  - Distinguish between Micro Economics and Macro Economics. (5)
3. (a) Define consumer's equilibrium. Explain consumer's equilibrium in ordinal analysis. (2+5=7)
- (b) Explain law of demand with suitable example. Express a linear demand function. What are the exceptions to the Law of Demand? (2+2+4=8)
4. (a) A demand function is given by  $Q_d = 200 - 1P$  (5)  
(i) Calculate cross elasticity of demand ( $E_{xy}$ ), when price of y is 100.  
(ii) Calculate cross elasticity of demand ( $E_{xy}$ ), when price of y is increased from 100 to 200.
- (b) Express the relationship between Total Revenue and Demand with suitable diagram. (5)
- (c) What is Break-even analysis? For a manufacturing firm, FC is Rs. 40,00,000, VC is Rs. 200, selling price is Rs. 400, determine the break-even sales quantity(Q). (5)
5. (a) Describe the features of Monopolistic Competition. Explain how a monopolist determines its equilibrium price and output during short period. (4+6=10)
- (b) In following market model, Demand Function and supply Function is given by  $Q_d = 10 - 4P$ ,  $Q_s = -6 + 2P^2$ ,  $Q_d = Q_s$ . Find equilibrium price and quantity. (5)

HS 181506

6. (a) Explain the functions of Central Bank. (5)  
 (b) Explain the tools of Monetary policy with examples. (5)  
 (c) Distinguish between Money market and capital market. Why stock Exchange is called 'Barometer of Economic activity'? (5)
7. (a) Explain the Environment —Economy interaction. (5)  
 (b) Illustrate the reasons behind market failure in case of environmental goods. (5)  
 (c) Explain positive and negative externality in production with suitable example. (5)
8. (a) Explain the role of public finance in a developing country. (5)  
 (b) Distinguish between Balanced Budget and Unbalanced Budget. Write the implications of surplus Budget in a developing economy. (5)  
 (c) Explain the advantages of GST over other indirect taxes. (5)

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B.Tech. 5<sup>th</sup> Semester End-Term Examination

All

ENGINEERING ECONOMICS

(New Regulation & New Syllabus)

Full Marks – 70

Time – Three hours

The figures in the margin indicate full marks for the questions.

Answer question No. 1 and any four from the rest.

### GROUP A

1. Fill in the blanks with appropriate words given in the brackets: (10 × 1 = 10)
- 'Principles of Economics' was written by \_\_\_\_\_ (Robbins / Marshall / Adam Smith)
  - Robbin's definition is known as \_\_\_\_\_ (welfare definition / scarcity definition / growth definition) of economics.
  - Theory of business cycle falls within the domain of \_\_\_\_\_ (micro economics / macroeconomics / public finance).
  - Bombay Stock Exchange was formed in the year \_\_\_\_\_ (1987 / 1877 / 1908)
  - For essential goods income elasticity of demand is \_\_\_\_\_ (greater than one / less than one / equal to one)
  - Cross elasticity of demand for complement goods is \_\_\_\_\_ (positive / negative / zero)
  - Price discrimination is a feature of \_\_\_\_\_ (monopoly market / perfect competition / oligopoly market)
  - Income tax is a kind of \_\_\_\_\_ (progressive tax / regressive tax / proportional tax)

[Turn over

- (ix) 'G' in the supply function stands for \_\_\_\_\_ (goal of the producer / state of technology / input prices).
- (x) 'PT' in the Fisher's quantity theory of money denotes \_\_\_\_\_ (supply of money / demand for money / velocity of money).

### GROUP B

Answer any four questions.

2. Write any three of the following : (5 × 3 = 15)

- (a) Show how the Phillips Curve traces the relation between inflation and unemployment.
- (b) Define marginal utility and derive utility function.
- (c) Show the relations between AR, MR and elasticity of demand.
- (d) Prove that an indifference curve is downward sloping and convex to the origin.
- (e) Write the concept of G.N.P. at market price, N. N. P. at market price and N. D. P. at market price.

3. (a) From the following data calculate total cost, average variable cost, average fixed cost and marginal cost. (3)

Total output (units):	0	15	25	35	45
TFC (RS):	400	400	400	400	400
TVC (RS):	0	200	250	300	500

- (b) The sale record of an industry reveals the following. Estimate sales for the next three years. (5)

Year :	1988	1990	1992	1994	1996	1998
Sale in lakh of Rs.	30	40	45	50	48	57

- (c) Calculate weighted average of relative index from the following data. (3)

Commodity :	Sugar	Potato	Dal	Rice
Weight :	5	4	2	3
Base year price (in kg.)	15	20	45	25
Current year price:	25	30	65	45

- (d) If  $(q+10)(p+5)=256$  and  $q-p+5=0$  are the demand and supply functions of a commodity then calculate price and quantity of the commodity. (4)

4. (a) Define perfect competition. Explain how price and output are determined under perfect competition. (3 + 7 = 10)

- (b) The supply and demand of a commodity are given as  $S=200+2P$  and  $D=300-3P$ . Calculate the equilibrium price and quantity of the commodity. When the specific subsidy of Rs. 3 per unit is offered then calculate the new equilibrium value. (5)

5. (a) What is monopoly market? Show with the help of a diagram how price and output are determined under monopoly market. (3 + 7 = 10)

- (b) The demand and cost functions of a monopoly firm are given as  $Q=20-2p$  and  $C=5Q+0.5Q^2$ . Calculate the level of output and price of the firm. (5)

6. (a) Discuss the various functions of the Central Bank of India. (7)

- (b) Explain the various monetary measures of the Central Bank to control inflation in the economy. (8)

7. (a) Define budget. Explain the various components of budget. (2 + 6 = 8)

- (b) Explain the Fisher's quantity theory of money. Given,  $M = \text{Rs. } 2000$ ,  $M' = \text{Rs. } 1000$ ,  $V = 4$ ,  $V' = 3$  and  $T = 5000$  units of goods. Find price (P) and value of money (1/P) by using Fisher's equation of exchange. (4 + 3 = 7)

8. (a) Define environmental economics. Discuss the scope of environmental economics. (2 + 5 = 7)

- (b) What do you mean by market failure? Briefly discuss the various causes of market failure. (2 + 6 = 8)