JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
TEST -3 EXAMINATION- 2025
B.Tech III Semester (All branches)

COURSE CODE (CREDITS): 25B11HS311(3) MAX. MARKS: 35

COURSE NAME: Economics

COURSE INSTRUCTORS: TGM, ASA MAX. TIME: 2 Hours

Note: (a) *All questions are compulsory.*

(b) *The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems*

(c) *Calculators are allowed*

Q.No	Question	CO	Marks
Q1	If a production function is defined as $Q=10K^{0.6} L^{0.8}$, answer the following questions w.r.t. it. a) What are the output elasticities of capital and labor in this case? b) If the amount of capital and labor were increased by 10%, one by one, how much would the output increase in each case? c) If both capital and labor are increased simultaneously by 10%, how would the output respond? d) What type of returns to scale does this production function indicate?	3	1+2+2+1
Q2	Given: $TC = 100+60Q-12Q^2+Q^3$. Derive the TVC, AVC and MC functions. At what rate of output are the AVC and MC minimum? Calculate the AVC and MC at the point where AVC is minimum.	3	2+2+2
Q3	How is the expansion path derived and what is its significance in production?	3	3
Q4.	An automotive supply company has a small plant that produces speedometers exclusively. Its annual fixed costs are Rs 30,000 and its variable costs are Rs10 per unit. It can sell a speedometer for Rs 25. How many speedometers must the company sell in order to break even? What will be the total revenue at the break-even level? If the fixed cost rises to Rs37,500, what is the new break even quantity and revenue?	3	4
Q5.	"In a perfectly competitive market, a firm has to be either *good* or *lucky*". Elaborate.	4	3
Q6	If the demand curve for a monopolist is Q=20,000-100P and the TC = 10,000+100Q+0.02Q²; determine the price and quantity at which the monopolist maximizes profit. Calculate the dead weight loss due to this monopoly.	4	3+3
Q7	"Monopolistic competition behaves like monopoly in the short run and perfect competition in the long run." Do you agree with this statement? Why/why not?	4	3
Q8	a) Does shift in the demand curve happen due to price change? Explain briefly. b) Socialist economies exhibit allocative and productive inefficiencies. Comment.	3,1	2+2