[This question paper contains 2 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 6869 **L**

Unique Paper Code : 2273100026

Name of the Paper : Industrial Organisation

Name of the Course : **B.A. (Hons) Economics**

Semester : VIII

Duration : 3 Hours Maximum Marks : 90

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt any **Five** out of **Seven** questions.
3. Each question carries **18** marks.
4. Answers may be written either in English or Hindi; but the same medium should be used throughout the paper.

1. Discuss the concept of dynamic models of oligopoly. How does repeated interaction between firms change the predicted outcome compared to a one-shot game? Explain the role of punishment strategies. **(18)**

2. (a) What is the difference between horizontal and vertical integration? Explain the main economic motives for each form of integration. **(10)**

   (b) Discuss how vertical integration with downstream competition can simultaneously reduce double marginalization and raise rivals' costs. What are the implications for consumer welfare? **(8)**

3. Consider Hotelling's model of a straight highway of length 100 kilometres, where consumers are uniformly distributed along the highway. Suppose there are only two stores (S_1, S_2) that sell water cans on this highway, located at distances of 30 km and 65 km from the beginning of the highway. Each consumer has a transportation cost equal to $0.03d^2$, where d is the distance travelled to the nearest store.

   (a) Calculate the demand, as a function of prices (P_1, P_2), for the two stores. **(6)**

   (b) Assume that production costs are zero and that the stores aim at maximising revenue from the sale of water cans. If the two stores compete in prices, find the prices charged at Nash equilibrium. **(6)**

   (c) If a third store (S_3) decides to locate on the same highway and the three store owners choose their locations on the highway simultaneously, find the Nash equilibrium of this game. **(6)**

4. (a) What is predatory pricing? How can an incumbent firm use predatory pricing as a strategy for entry deterrence? What are the difficulties in distinguishing predatory pricing from legitimate competitive pricing? **(10)**

P.T.O.

(b) Explain the anti-trust policy approach to predatory pricing. What legal standards have been developed to identify predatory behaviour? **(8)**

5. (a) The market demand function for a good is given by

$$P = 1000 - 2Q.$$

There are two duopolists, 1 and 2, producing this good, with their respective average and marginal costs

$$AC_1 = MC_1 = 200 \quad and \quad AC_2 = MC_2 = 240.$$

Find the Cournot equilibrium, price, quantities of both duopolists, and profits made by both. How do these change if the second duopolist is the Stackelberg leader? **(10)**

(b) Explain the Nash equilibrium of the Bertrand model. State the Bertrand paradox. **(8)**

6. What is meant by R&D competition in industrial organisation? Explain how the incentive to invest in R&D differs between a monopolist and a competitive firm. Discuss the Arrow replacement effect in this context. **(18)**

7. Discuss the economics of cartels with reference to a real-world example. What challenges do cartel members face in maintaining their agreement? How do antitrust authorities detect and penalise cartel behaviour? **(18)**