M.A. Examination, 2018
Semester-II
Economics
Course-C6
(Micro Economics-2)

Time: Three Hours **Full marks: 40**

Questions are of value as indicated in the margin

Answer ***any four*** questions

1. (a) Define a Dominant Strategy Equilibrium (DSE) and a Nash Equilibrium. Explain how the two are different using examples.
   (b) Show that a DSE is always a NE but the converse need not be true. 4+6
2. (a) With the use of a numerical example explain the method of iterated removal of dominated strategies.
   (b) Use this method to show that the optimal bid for each bidder in a Second Price Sealed Bid Auction (with private values) is to quote the true value of the bidder. (3 + 7)
3. Define a mixed strategy equilibrium. In the 'matching pennies game"

	H	T
H	+1. -1	-1, +1
TT	-1, +1	+1, -1

   (a) show that there is no Pure Strategy Nash Eqilibrium
   (b) Find a mixed strategy Nash Equilibrium (4 + 6)
4. Define a Subgame Perfect Nash Equilibrium (SPNE). In the context of an Entry game (between a potential entrant who can choose to enter or not and an incumbent monopolist who can share the market or fight) find the SPNE. Explain in this context the concepts of 'first mover advantage' and elimination of equilibria based on 'non-credible threats'. (2+4+2+2)
5. Describe the model of non-coperative bargaining with alternative offers with common discount factor *d* when bargaining is limited to 1 and 2 periods. Show that even if bargaining is permitted to go on for infinite periods the game is concluded in the very first period. And the sharing of the surplus depends on (a) the discount factor and (who makes the first offer? (4+6)
6. Discuss the model of a Cournot duopoly with a linear demand curve and constant unit Costs where firm 1's unit cost is known to both but firm 2's unit cost is known only to itself. Firm 1 knows only that firm 2's unit cost is low with probability p and high with probability 1- p. Find the equilibrium duopoly outputs of the firms. How do they compare with the full information Cournot Duopoly? (6+4)

P.T.O.

7. Consider a monopolist operating in market where customers may have high or low demand for the good she is selling – between whom the monopolist cannot distinguish. Show that the optimal (second-best) quantity –payment packages offered by the monopolist in the market satisfies the following properties:
   (i) the low demand customers do not obtain any surplus but the high demand customers obtain a positive surplus,
   (ii) the high demand customers buy the Pareto optimal amount (ie the amount they would buy if their demand was known), while the low demand customers buy a suboptimal amount. (5+5)
8. Consider a job market with competitive employers who plan to recruit candidates a fraction p of whom have low productivity and a fraction (1- p) who have high productivity. Assume that the true productivity is known only to the candidate. Show that generally, the employer will not offer a wage high enough to be acceptable to the high productivity candidate. Further, if the employee chooses to signal her true quality to the employer, she must choose a signal that has low cost for the high productivity and high cost for the low quality candidate. (3 + 7)

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