Reference No.: EX/PG/ECO/35/63/2018

MA 2nd. Year, 3rd. Semester Examination 2018

Games and Information

Full Marks: 30. Time: 2 hours.

Answer all questions.

1. Define: Static Bayesian Nash Equilibrium.
   Explain what is meant by a Double Auction. Build a simple model of a Double auction and derive a Linear Bayesian Nash equilibrium for the game. (2 + 6)
2. Explain what is meant by a signaling game. State the Signalling Requirements in a simple Sender Receiver Signalling game and explain what they mean. Define a Pure Strategy Perfect Bayesian Equilibrium in a Signaling game. (2 + 4 + 2)
3. Consider any non-empty undirected Social Network (N, g), where N is the set of players and g is the set of links. Define: Tree, Forest, Circle and Complete networks. Show that while the components of a network partition the network, cliques need not do so. (Define the terms Component and Clique in your answer) (4 + 4)
4. Consider any non-empty undirected Social Network (N, g), where N is the set of players and g is the set of links. When is the network said to be pairwise stable? Explain why a Network (N, g) with $g = \phi$, the empty set, is pairwise stable even if the cardinality of N is at least two. (4 + 2)