B.A. (Honours) Examination, 2019

Semester–IV

Economics

Course – H-8

(Mathematical Economics-I)

(For Back Candidates)

Time: Three Hours **Full Marks: 40**

Questions are of value as indicated in the margin.

Answer ***any four*** questions.

1. (a) Explain Walrasian and Marshalian stability condition with the help of demand-supply curve.

   (b) Give an example of equilibrium which is stable accoriding to marshallian condition but not with Walrasian condition.

   (c) Find the point elasticity of demand for the demand function $q = 100P^{-2}$; where q=Quantity demanded and P=Price. 3+4+3

2. (a) Derive the effect of change in Government purchases on income and interest rate in an IS-LM model. (Mathematically only). Compare that with the results of SKM model.

   (b) The utility function is given by U = xy. Unit prices of x and y are respectively Rs. 2 and Rs. 5 and consumer's money income is Rs. 100. Fine equilibrium purchase of x and y. 6+4

3. Show that diminishing marginal utility is neither necessary nor sufficient condition for regular strictly quasi-concavity of the utility function or convexity of indifference curve. 10

4. Derive and interpret the Slutsky equations for a consumer with utility function U = f(x,y). 10

5. (a) Define concavity and quasi-concavity of a function.

   (b) Show that quasi-concavity is weaker condition than concavity.

   (c) Show that $Z = xy$; $(x,y \geq 0)$ is not quasi-concave. 2+4+4

6. A consumer has the utility function $U = X^2Y^2$, and the budget constraint $M=P_XX+P_YY$.

   (a) Set up the constrained maximization problem and derive first-order conditions.

   (b) Derive the consumer's demand for X and Y in terms of the parameters.

   (c) Derive the indirect utility function for the consumer. 3+4+3

P.T.O.

7. (a) Shows that Cobb-Douglas production function is a limiting case of CES production function.

   (b) Derive the degree of elasticity of substitution in case of Cobb-Douglas production function.

   (c) Calculate the degree of homogeneity of CES production function. 5+3+2

8. (a) What is difference between Pure Strategy and Mixed Strategy?

   (b) Find the equilibrium of the following game

Player B

Player A	B1	B2
A1	1	–1
A2	–1	1

4+6
