



UNIVERSITY OF THE PUNJAB

Fifth Semester – 2019

Examination: B.S. 4 Years Program

Roll No. in Fig.

Roll No. in Words.

PAPER: Mathematical Economics-I
Course Code: ECON-303 Part-I (Compulsory)

MAX. TIME: 15 Min.
MAX. MARKS: 10

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Signature of Supdt.:

Attempt this Paper on this Question Sheet only.

Please encircle the correct option. Division of marks is given in front of each question.

This Paper will be collected back after expiry of time limit mentioned above.

Q.1. Encircle the right answer, cutting and overwriting is not allowed. (1x10=10)

- When we give one value to independent variable and attain one value for dependent variable then it is called:
 - Relation
 - Function
 - Multi-valued function
 - Decreasing function
- The general representation of implicit function is:
 - $l=f(y)$
 - $Y=f(l)$
 - $F(x, y) = 0$
 - $Y=f(x)$
- Slope of function $Y=f(x)=11$ is
 - Positive
 - Negative
 - Infinite
 - Zero
- If $Qd_1=10-2P_1+P_2$, here the positive sign of P_2 shows that goods are:
 - Complements
 - Substitutes
 - Luxuries
 - Inferior
- The variable whose value is determined within the model is called:
 - Endogenous variables
 - Exogenous variables
 - Independent variables
 - Dependent variables
- According to the transpose property if $(AB)^t = \dots$
 - $A^t B^t$
 - $B^t A^t$
 - $A^{-1} B^t$
 - $A^t B^{-1}$
- If the matrix has zeros above or below the principle diagonal, then it is called:
 - Diagonal matrix
 - Identity matrix
 - Tri-angular matrix
 - Null matrix
- If $QP=a$, this type of function has elasticity equal to:
 - $E>1$
 - $E<1$
 - $E=1$
 - $E=0$
- If $f(x)=(dy/dx) > 0$, then the function is:
 - Increasing function
 - Decreasing function
 - Implicit function
 - Explicit function
- If $d(TC)/dQ = 0$, $d^2(TC)/dQ^2 > 0$, then the cost will be:
 - Maximum
 - Minimum
 - Increasing
 - Decreasing



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PAPER: Mathematical Economics-I
Course Code: ECON-303 Part – II

MAX. TIME: 2 Hrs. 45 Min.
MAX. MARKS: 50

ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED

Q.2 Write the short answers

(4 X5 =20)

- (i) Differentiate Singular and Non-singular matrix
- (ii) Differentiate Endogenous variable and Exogenous variable
- (iii) Differentiate Function and Relation.
- (iv) Write down the properties of Matrix Inversion.
- (v) If $Q = 70 - 5P$. Then find the slope of TR (Total Revenue)

Q.3 If $Q_d = 20 - 3p$ $Q_s = -5 + 29$ and $Q_d = Q_s$

- a) Find equilibrium price (p) and equilibrium quantity (Q). (5)
- b) Find Elasticity of demand and elasticity of supply at P and Q (5)

Q.4 a) If slope= $m=3$ and intercept is at (0, 5). Find the equation of straight line.

b) If $Q_d = 20 - 5P$ and $Q_s = 4 + 3P$ (Govt. Imposes 20 % tax on supplier) then find the values of P and Q with and without tax. (4, 6)

Q.5 Use Cramer's Rule to solve the following equations systems:

$$8X_1 - X_2 = 16$$

$$2X_2 + 5X_3 = 5$$

$$2X_1 + 3X_3 = 7$$

(10)