2024

ECONOMICS

B.A. First Semester End Examination - 2024

PAPER - SEC101

Numerical Analysis for Economics

Full Marks : 40 *Time : 2 hours*

The figures in the right-hand margin indicate marks.
Candidates are required to give their answers in their own words as far as practicable.
Illustrate the answers wherever necessary.

Group - A

1. Answer any five questions : 2×5=10

a) What do you mean by Real Numbers?

b) What do you mean by explicit function?

c) What do you mean by continuity of a function?

d) Define primary data.

e) Defind the terms variable and constant.

f) Given A={4,5,6}, B={3,4,6,7} and C={2,2,6}. Verify the Distributive Law.

g) Given S_1={3,6,9}, S_2={a,b} and S_3={m,n}, find the cartesian products (i) $S_1 * S_2$ (ii) $S_2 * S_3$ (iii) $S_3 * S_1$

h) If ∩ = {a, e, i, o, u} and
A={a, e, i}
B={e, o, u}
C={a, i, u}
Verify whether the value is true or not :
A∩(B–C)=(A∩B)–(A∩C)

Group - B

Answer any four of the following : **5×4=20**

2. Explain the different parts of a table.

3. Show that the function $y=7x^3+2x^2+x-1$ is a monotonically increasing function.

4. Show that $\lim_{x \to 0} \frac{1}{x}\left\{(1+x)^3 - 1\right\} = 3$

5. Differentiate between variable and attribute.

 (Continued)

6. A production function is given by

$$Q(L,K) = A[\alpha L^{\rho} + (1-\alpha)K^{\rho}]^{\frac{v}{\rho}}$$

Determine its degree of momogeneity and give the conditions under which it will have increasing, decreasing and constant returns to scale.

7. If A={3, 5, 7, 9, 10}, B={7, 9, 10, 13} and C={10, 13, 15}. Find (A∩B)∩(B∩C)

Group- C

Answer any one of the following : **10×1=10**

8. Explain the different methods of data collection?

9. The demand function of a monopolist is P=15–2x and the cost function is $C=x^2+2x$. Find the (i) MR (ii) MC (iii) equilibrium output (iv) equilibrium price and (5) AC.