



21100143

QP CODE: 21100143

Reg No :

Name :

B.A DEGREE (CBCS) EXAMINATION, FEBRUARY 2021

Fifth Semester

Core Course - EC5CRT07 - QUANTITATIVE TECHNIQUES

B.A Economics Model I, B.A Economics Model II Foreign Trade, B.A Economics Model II Insurance

2017 Admission Onwards

21732507

Time: 3 Hours

Max. Marks : 80

Part A

*Answer any **ten** questions.*

*Each question carries **2** marks.*

1. Define Variables.
2. Define Quadratic Equations.
3. Define Exponent.
4. Define Arithmetic Progression.
5. Find the second order derivative of the following function: $y = x^3 + 4x^2 + 2x + 3$
6. Find the subset of set $S = \{1, 3, 5, 7\}$. Also find the total number of subsets possible.
7. Define Venn diagram.
8. If $A = \{1, 2\}$ and $B = \{a, b\}$. Find $A * B$
9. Define a triangular matrix.
10. What are the basic principles of Axiomatic approach of probability?
11. State the Multiplication theorem of probability.
12. Define partially overlapping events.

(10×2=20)

Part B

*Answer any **six** questions.*

*Each question carries **5** marks.*

13. One borrows Rs. 20,000 at 12% compound rate of interest. How much money he has to





pay back at the end of 4 years? Also find the interest for the period.

14. Explain the mathematical properties of real numbers.
15. Differentiate $y=x(1+x^2)$
16. Examine the following functions for its maxima or minima and determine its value
 $C = 2x^2-12x+40$

17. Derive a TR curve from a firm's demand function $P= 80- 2x$

18. If $P = \begin{bmatrix} -1 & 0 \\ 0 & 1 \end{bmatrix}$ and $Q = \begin{bmatrix} 1 & 1 \\ -1 & 1 \end{bmatrix}$. Then show that PQ not equal to QP

19. Find $\begin{vmatrix} 1 & -3 & 2 \\ 4 & -1 & 2 \\ 3 & 5 & 2 \end{vmatrix}$

20. Find the probability of drawing an ace or a spade from the pack of cards.
21. State the properties of binomial distribution.

(6×5=30)

Part C

Answer any **two** questions.

Each question carries **15** marks.

22. What is meant by differentiation. State the important rules of differentiation.
23. The demand function of a monopolist is $p=15-2x$ and the cost function is $c=x^2 +2x$ find the
 1. marginal cost
 2. marginal revenue
 3. equilibrium output
 4. average cost
 5. average cost when output is 4 units
24. Solve the system of equation : $12x - 16y + 20z = -24$, $4x + 4y - 8z = -4$ and $8x + 12y + 4z = 20$
25. In an intelligence test administered to 1000 students the average score was 42 and SD 24. Find the number of students (a) exceeding a score 50, (b) scoring between 30 and 54. Also find (c) the value exceeded by the top 100.

(2×15=30)

