

QP CODE: 19102542

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Reg No :

Name :

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BA DEGREE (CBCS) EXAMINATION, OCTOBER 2019

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

719298FA

Maximum Marks: 80

Time: 3 Hours

Part A

Answer any ten questions.

Each question carries 2 marks.

1. Define Constants
2. Explain degree of Equations
3. Explain the concept of Net Present Value
4. Explain Natural Numbers

5. Find the higher order derivatives of

$$Y = 6x^4 + 3x^3 - 4x^2 - x + 10$$

6. Find $A \cup B$ when $A = \{2, 3, 4, 5\}$ and $B = \{3, 5, 7, 9, 11\}$

7. Define ordered pair

8. Give example of a row matrix of order 1×4 and column matrix of order 3×1

9. Define determinant. Is $\begin{vmatrix} 2 & 3 & 1 \\ 4 & 3 & 2 \end{vmatrix}$ a determinant. If yes, find the determinant. If no, why?

10. Define the subjective approach of probability

11. State the addition theorem of probability.

12. From a pack of 52 cards, two cards are drawn at random in succession without replacement. Find the probability that first card is a king and second card is a queen?

($10 \times 2 = 20$)

Part B

Answer any six questions.

Each question carries 5 marks.

13. Briefly explain the properties of Exponents
14. What is Geometric Progression ? Explain how the 15th term can be calculated.
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. If $Q_d = 140 - 4p$. Draw a demand curve for the firm's demand function along with a demand schedule.
18. Show that $\begin{bmatrix} 3 & 4 \\ 2 & 3 \end{bmatrix} * \begin{bmatrix} 3 & -4 \\ -2 & 3 \end{bmatrix}$ gives a unit matrix
19. Define inverse of a matrix. Find the inverse of $A = \begin{bmatrix} 6 & 3 \\ 4 & 7 \end{bmatrix}$
20. Explain the term random experiments with suitable examples
21. State the properties of normal 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. A radio manufacturer produces x sets per week at a total cost of $\text{Rs. } x^2 + 78x + 2500$. The demand function is $8x = 600 - p$ where p is the price per unit. When is the net revenue maximum. What is the price per set then?
24. Solve the system of equation : $12x - 16y + 20z = -24$, $4x + 4y - 8z = -4$ and $8x + 12y + 4z = 20$
25. Five hundred families each having 4 children were taken as sample. If the probability of a child having boy is 0.5, in how many families would you expect to have (i) exactly one boy (ii) exactly two girls

(2×15=30)

