QP CODE: 23114086

Reg No   :   ....

Name   :   ....

B.A DEGREE (CBCS) SPECIAL SUPPLEMENTARY EXAMINATIONS, APRIL 2023

Fifth Semester

CORE COURSE - EC5CRT07 - QUANTITATIVE TECHNIQUES

Common for B.A Economics Model I, B.A Economics Model II Foreign Trade & B.A Economics
Model II Insurance

2020 Admission Only

4C1D1779

Time: 3 Hours

Max. Marks : 80

Part A

*Answer any **ten** questions.*

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

1. Define Constants.

2. Explain degree of Equations.

3. Briefly explain the properties of Exponents.

4. What is meant by Progression? Give an example of arithmetic progression.

5. What are derivatives?

6. Find the derivative of $y = 2x^2-3x-5$

7. Find the second order derivative of the following function
    $y = x^3+4x^2+2x+3$

8. State the difference between equal set and equivalent set.

9. Define transpose of a matrix.

10. Define a minor and cofactor.

11. Distinguish between dependent and independent events.

12. Define normal distribution.

(10×2=20)

Part B

*Answer any **six** questions.*

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

13. Find the sum of first 15 terms of the GP : 32, 16, 8, 4, ...

14. The value of a machine depreciates 10%annually. Its initial value is Rs. 1,00,000, Find its value after 4 years.

15. State the necessary and sufficient condition for maximum and minimum.

16. Explain venn diagram.

17. Define relation. If X= {1,2,3} , Y ={1,2,3,4,5,6} and X is related to Y on rule Y =2X. find Domain, Range, Relations and Image set.

18. If $C = 4X^2 +2X +20$. Draw Total Cost, Fixed cost and Variable cost.

19. Explain the different approaches of Probability.

20. Explain the addition and multiplication theorem of probability.

21. Find the probability of drawing an ace or a spade from the pack of cards.

(6×5=30)

Part C

*Answer any **two** questions.*

*Each question carries **15** marks.*

22. Elaborate on the different types of numbers on the real number system with its mathematical properties.

23. Give an account of the applications of derivatives in economics.

24. Solve the system of equation : 12 x- 16 y+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)