Reg. No ..... Name **23U220**

B B A DEGREE END SEMESTER EXAMINATION : MARCH 2023

SEMESTER 2 : INTEGRATED MARKETING AND NEW MEDIA

COURSE : **19U2CRBBA4: BUSINESS MATHEMATICS**

(For Regular - 2022 Admission and Improvement / Supplementary – 2021/2020 Admissions)

Time : Three Hours Max. Marks: 60

PART A

Answer All (1 mark each)

1. What is the 8^{th} term of a GP if the first tem is 2 and common ratio is 3?
2. Find the third term of a GP if the first term is 4 and second term is 8.
3. Define the term unit matrix.
4. The H .C.F of 1.44, 1.80 and 2.16 is
5. If Rs. 782 be divided into three parts, proportional to $\frac{1}{2} : \frac{2}{3} : \frac{3}{4}$ then the first part is?
6. Solve the equation 2x-6=3
7. Calculate the order of the product matrix of 3 x 5 matrix and 5 x 3 matrix.
8. A: B: C is in the ratio of 3: 2: 5. How much money will C get out of Rs 1260?

(1 x 8 = 8)

PART B

Answer any 6 (2 marks each)

9. Represent the octal number $(107)_8$ in decimal number system.
10. Find the 15th term of the arithmetic progression 3, 9, 15, 21,....?
11. Find the product of the Matrix A = $\begin{bmatrix} 2 & 3 \\ -1 & 4 \end{bmatrix}$ and B = $\begin{bmatrix} 2 & -1 \\ -1 & 3 \end{bmatrix}$
12. In an examination a student scored 84 marks where as the same students scored 90 in the previous exam . Calcualte the percentage of reduction in marks.
13. Solve the linear equation using elimination method
    i) 2x + 3y = 20
    ii) x - 2y = 3
14. Define skew symmetric matrix , Check whether the Matrix A = $\begin{bmatrix} 0 & 1 & -2 \\ -1 & 0 & 3 \\ 2 & -3 & 0 \end{bmatrix}$ is skew symmetric or not.
15. Solve the quadratic equation for x :
    x^2 - 9x + 14 = 0
16. Explain the terms direct and inverse proportion with the help of examples.

(2 x 6 = 12)

PART C

Answer any 4 (5 marks each)

17. The sum of 3 times a larger integer and 2 times a smaller integer is 15. When 3 times the smaller integer is subtracted from 3 twice the larger, the result is 23 . Find the integer.

18. A bank collected deposit of Rs.6,000 is from its customers for 4 months as a fund-raising campaign. The fund earns 18% annual interest, compounded monthly, and paid at the end of the month. Find the present value of the savings.
19. Explain the binary and Octal number systems with suitable examples.
20. If the fifth and twelfth terms of an AP terms of an are 14 and 35 respectively, find the AP and twentieth term.
21. Find three numbers in A,P. such that their sum is 18 and the product is 192.
22. Solve the given equation using Cramers rule
    $12x + 3y = 15$
    $2x - 3y = 13$

(5 x 4 = 20)

PART D

Answer any 2 (10 marks each)

23. The sum of the first 10 terms of a GP is equal to 244 times the sum of the first 5 terms. Find the common ratio.
24. Rs 15,000, deposited in a bank for one year with an interest rate of 12% per annum , Calculate the following
    i) Compoound interest calculated annually
    ii) Compound interest calculated half yearly and
    iii) Compound interest calculated quarterly
25. Discuss the properties of determinants.
26. Discuss the Properties of addition and multiplication of integers with suitable examples.

(10 x 2 = 20)