

BBA DEGREE END SEMESTER EXAMINATION - JULY 2021
SEMESTER 2 : INTEGRATED MARKETING AND NEW MEDIA
COURSE : 19U2CRBBA4 : Business Mathematics
(For Regular - 2020 Admission and Supplementary - 2019 Admission)

Time : Three Hours

Max. Marks: 60

PART A**Answer All (1 mark each)**

1. Define the term hexa octal Number system
2. Find the value of X , Given $121x^2 = 169$
3. Define the term Diagonal matrix
4. Define the term scalar matrix
5. Calculate the sub triplicate ratio of 125 : 27
6. If the Salary of a person is increased from 30000 per month to 36,000 per month, what is the percentage of hike in salary ?
7. What is the seventh term of the Arithmetic Progression, 3,7,11,15,.....
8. Write down the n^{th} term of an AP with first term a and common difference d.

(1 x 8 = 8)**PART B****Answer any 6 (2 marks each)**

9. A rectangular courtyard 4.55 meters long and 5.25 meters wide is paved exactly with square tiles of same size. Find the largest size of the tile used for this purpose?
10. Solve the linear equation using elimination method
 - i) $3x + y = 45$
 - ii) $5x - 2y = 20$
11. Solve the linear equation using substitution method
 - i) $3x + 2y = 13$
 - ii) $2x - y = 4$
12. Find the product of the matrix $A = \begin{bmatrix} 1 & 0 & 2 & 3 \\ 2 & -1 & 2 & 3 \end{bmatrix}$ and the matrix $B = \begin{bmatrix} 2 \\ 3 \\ 0 \\ 2 \end{bmatrix}$
13. Define the term transpose of a matrix with the help of an example
14. If the cost of a product is 1500/- and if the seller is looking for a 8% margin what the selling price?
15. An amount of Rs 5000 is to be divided between two persons . One of them should get Rs. 3900. Calculate the ratio in which the amount is to be distributed
16. A man invested Rs 1000 in the month of January 2010. From the next month onwards he is investing Rs 100 more than the previous month. What is his investment in June 2021.

(2 x 6 = 12)**PART C****Answer any 4 (5 marks each)**

17. Six bells commence tolling together and toll at intervals of 2, 4, 6, 8 10 and 12 seconds respectively. In 30 minutes, how many times do they toll together ?
18. Explain the term discriminant of a quadratic equation with the help of an example

19. Explain the properties of transposed matrices.
20. Explain the terms duplicate, triplicate, sub duplicate and sub triplicate of ratios with the help of examples
21. Find three numbers in A.P. such that their sum is 18 and the product is 192,
22. Insert six geometric means between 2 and 256

(5 x 4 = 20)

PART D

Answer any 2 (10 marks each)

23. Discuss the different number systems as binary octal etc., in mathematics, and their practical applications
24. Discuss the properties of determinants
25. If the simple interest paid by a bank for a certain sum of amount for 1 year at 15% interest rate is Rs 4500
 - i) Find the sum
 - ii) Find the difference between the compound interest calculated on half yealy basis and quartely basis for a duration of one year, if the amount and rate of interest remain the same
26. Find four numbers in A.P. whose sum is 20 and the sum of whose squares is 120.

(10 x 2 = 20)