

**II Semester End Examination- September/October-2022**

**COMMERCE**

**BUSINESS MATHEMATICS**

**Course code: COM2DSC05**

**QP Code:2022**

**Time: 02:30 HOURS**

**Max. Marks: 60**

**SECTION-A**  
**(Conceptual Questions)**

**I. Answer any Five of the following questions. Each question carries Two Marks.**

**(5 x 2= 10)**

- What are Integers?
- Find the HCF of 48, 72 and 108
- What is Diagonal Matrix? Give example
- Find the duplicate and sub-duplicate ratio of 25 and 49
- If **m** and **n** are the two roots of the equation  $2x + 3x + 7 = 0$ , find the value of **m + n** and **mn**.
- Find the True Discount on a sum of Rs. 5,000 due for 3 months at 8% p.a simple interest
- Find the Geometric mean of 6 and 96

**SECTION- B**  
**(Application Questions)**

**Answer any four of the following question. Each question carries Five Marks. (4 x5= 20)**

2. Solve for x

$$\frac{3x-2}{4} + \frac{10x-8}{12} = \frac{13}{4} + \frac{x-2}{3}$$

3. If the sum of n terms of a G P is 728, the first term is 2 and the common ratio is 3, find the number of terms

4. Find the rate of compound interest at which a sum of Rs. 62,500 amounts to Rs. 67,600 after 2 years

5. The Banker's Gain on a sum due for 146 days at 5% p.a is Rs.20. Find the sum

6. Solve by Cramer's rule

$$\begin{aligned} 5x - 3y &= 24 \\ -7x + 11y &= 14 \end{aligned}$$

**SECTION- C**  
**(Analyses and Understanding Questions)**

**Answer any two of the following question. Each question carries Twelve Marks. (2x12=24)**

7. a. If  $A = \begin{bmatrix} 2 & 4 & 6 \\ 4 & 6 & 8 \\ 2 & 3 & 3 \end{bmatrix}$   $B = \begin{bmatrix} 2 & 1 & 2 \\ 3 & 2 & 6 \\ 5 & 7 & 4 \end{bmatrix}$  Find  $2A + 3B$  and  $AB$

b. Solve by Formula method

$$5x^2 - 19x + 12 = 0$$

8. a. The number of men and women workers in a factory are 30. If each man gets Rs.140 and each woman gets Rs.100 as wages, the total wages amount to Rs. 3,800. Find the number of men and women

b. If the 24<sup>th</sup> term of an AP is 280 and the 11<sup>th</sup> term is 150, Find the 20<sup>th</sup> term

9. a. Suppose you deposit Rs 20,000 at the beginning of every year for 6 years in a recurring account at 10% compound interest, what will be the amount in your account after 6 years?

b. A bill for Rs. 12,500 was drawn on 13<sup>th</sup> July for 5 months and was discounted on 4<sup>th</sup> October at 8% p.a. Find the i. Banker's Discount ii. Discounted value and iii. Present value of the bill

**SECTION- D**  
**(Skill Development Questions)**

**Answer any one of the following questions, Each question carries Six Marks. (1 x 6 = 6)**

10. Show the secondary overhead distribution using simultaneous equation method

11. Write the use of AP and GP in solving commercial application problems

BMSCW LIBRARY