

I Semester B.B.A. Examination, March/April 2022**(CBCS) (Repeaters) (2020-21 and Onwards)****BUSINESS ADMINISTRATION****Paper – 1.6 : Business Mathematics and Logical Reasoning**

Time : 3 Hours

Max. Marks : 70

Instruction : Answer should be written in English only.**SECTION – A****1. Answer any five sub-questions. Each sub-question carries two marks. (5x2=10)**

a) Write the following sets in Tabular form :

i) Vowels of English alphabets

ii) Integers between –2 and 5.

b) Find the value of $7! - 3!$.c) Factorise $2x^2 + 5x + 2 = 0$.d) Find the value of x , $80 : 16 = x : 7$.

e) A cloth merchant professes to sell his cloth at cost price but measures 90 cm instead of 1 m. Find his profit percent.

f) Given $A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$, $B = \begin{bmatrix} 3 & 1 \\ 4 & 5 \end{bmatrix}$ find $(A + B)'$.

g) Choose odd man out.

I) a) Parrot b) Bat c) Crow d) Sparrow

II) a) January b) May c) August d) November

SECTION – B**Answer any three questions. Each carries five marks. (3x5=15)****2. How many 3 digit numbers can be formed from the digit 1, 2, 3, 4 and 5, if repetition of digits allowed ?**



3. Solve by Elimination Method :

$$2x + 3y = 8$$

$$5x + 6y = 14$$

4. Find the value of 'a' so as to have the value of the following determinant to be zero.

$$\begin{vmatrix} a & 14 & 32 \\ 6 & 7 & 16 \\ 11 & 12 & 13 \end{vmatrix}$$

SECTION - A

5. 10 books of 750 pages cost ₹ 1,875. What will be the cost of 25 books of 960 pages each ?
6. Find the future value of an ordinary annuity of ₹ 5,000 for 4 years at 10% p.a. compounded annually.

SECTION - C

Answer any three questions. Each question carries twelve marks. (3×12=36)

7. A box contains 7 red, 6 white and 4 blue balls. How many selection of three balls can be made so that

- a) all three red balls only
- b) none is red ball
- c) there is one ball of each colour
- d) at least 2 red balls.

$$A = \begin{bmatrix} 1 & 0 & -4 \\ -2 & 2 & 5 \\ 3 & -1 & 2 \end{bmatrix}$$

8. Calculate the inverse of $A = \begin{bmatrix} 1 & 0 & -4 \\ -2 & 2 & 5 \\ 3 & -1 & 2 \end{bmatrix}$.

9. Monthly incomes of two persons are in the ratio 4 : 5 and their monthly expenses are in the ratio 7 : 9. If each takes ₹ 500 a month, find the monthly incomes.

10. Solve by Crammer's Rule :

$$x + 2y = 1$$

$$3x + y = 4$$

11. Find the compound interest on ₹ 6,950 for 3 years, rate of interest for first two years is 6% p.a. and 9% for third year half yearly.

SECTION – D

(1×9=9)

Answer any one question.

12. A) There are two families A and B. There are two men, three women and one child in family A and husband, wife and 2 children in family B. The daily intake of calories as recommended by W.H.O. is men : 2400; women : 1900 and children : 1800. For protein intake men 55 gms, women 45 gms and children 33 gms. Using matrices, calculate the daily total requirement of calories and protein for each of the two families.

OR

B) Prepare Amortization table by using imaginary figures for loan amount – EMI calculation.

Answer any three questions. Each carries five marks.

Q. How many 3 digit numbers can be formed from the digits 1, 2, 3, 4 and 5 if repetition of digits allowed ?