

Roll No \_\_\_\_\_

(To be filled in by the candidate)

(Academic Sessions 2017 – 2019 to 2020 – 2022)

## BUSINESS MATHEMATICS

# UJR-21

Q.PAPER ( Objective Type )

221-(INTER PART -I)

Time Allowed : 15 Minutes

PAPER CODE = 6644

Maximum Marks : 10

Note : Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink in the answer-book. Cutting or filling two or more circles will result in zero mark in that question.

1-1	If $f(x) = 3x - 6$ , then $f(0)$ is :	(A) 6	(B) -6	(C) 3	(D) -3
2	In the binary system digits used :	(A) 1, 2	(B) 0, 2	(C) 1, 0	(D) 1, 10
3	If $x + 9 = 15$ then value of $x$ is :	(A) 6	(B) -6	(C) 7	(D) 24
4	If matrices A and B are non-singular then $(AB)^{-1} = :$	(A) $A^{-1}B^{-1}$	(B) $AB$	(C) $B^{-1}A^{-1}$	(D) $BA$

( Turn Over )

(2)

MSR-21

5	30% of 300 is :	(A) 80	(B) 90	(C) 70	(D) 60
6	Which value of $x$ is the root of the equation $11x - 22 = 11$ :	(A) $x = 3$	(B) $x = -3$	(C) $x = 4$	(D) $x = 33$
7	Ratio between 10 minutes and 30 minutes is :	(A) 2 : 3	(B) 1 : 3	(C) 2 : 4	(D) 1 : 5
8	The number 4 in binary system is :	(A) (101) <sub>2</sub>	(B) (100) <sub>2</sub>	(C) (111) <sub>2</sub>	(D) (1010) <sub>2</sub>
9	If matrix $A = \begin{bmatrix} 2 & 1 \\ 2 & 1 \end{bmatrix}$ , then $ A $ is :	(A) 4	(B) 0	(C) -4	(D) -8
10	The simple interest on Rs.700/- borrowed for one year at the rate of one percent per annum is :	(A) Rs.7	(B) Rs.70	(C) Rs.700	(D) Rs.80

Roll No \_\_\_\_\_ (To be filled in by the candidate)

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**BUSINESS MATHEMATICS**

( Essay Type )

221-(INTER PART – I)

Time Allowed : 1.45 hours

Maximum Marks : 40

**2. Write short answers to any SIX (6) questions :**

**SECTION – I**

**12**

- (i) Find the value of  $x$ , if  $x : 250 :: 4 : 50$
- (ii) Find 10% of 15000.
- (iii) If cost of a bag is Rs.120 and selling price is Rs.150, what is the profit or loss?
- (iv) What is the "Principal" amount?
- (v) Find simple interest on Rs.5000 for 10 years at 8% per annum.
- (vi) Solve the equation  $\frac{9}{x+4} = \frac{5}{x-8}$
- (vii) Solve by factorization  $x^2 - 5x + 6 = 0$
- (viii) Find the value of  $x$ , if  $2x + 7 = 9$   
 $x + y = 8$
- (ix) Solve the equations  
 $x - y = 4$

**3. Write short answers to any SIX (6) questions :**

**12**

- (i) If  $f(x) = x^2 - 4$  then find the value of  $f(4)$  and  $f(\sqrt{2})$ .
- (ii) Write the domain and range of the relation  $\{ (1, 3), (3, 3), (5, 1), (6, 1) \}$
- (iii) Define matrix.
- (iv) If  $A = \begin{bmatrix} 6 & 3 \\ 4 & x \end{bmatrix}$  is a singular matrix, then what will be the value of  $x$ ?

(Turn Over)

(2)

**UAK-21**

3. (v) Find the value of  $x$  from  $X + \begin{bmatrix} 3 \\ 4 \end{bmatrix} = \begin{bmatrix} 5 \\ 3 \end{bmatrix}$
- (vi) Find the inverse of  $\begin{bmatrix} 3 & -1 \\ 4 & 5 \end{bmatrix}$
- (vii) Simplify  $(111)_2 + (100)_2$
- (viii) Convert  $(101)_2$  into decimal number system.
- (ix) Multiply the binary number's  $(111)_2 \times (1110)_2$

**SECTION – II**

**Note :** Attempt any **TWO** questions.

4. (a) A bus travels 200 km in 3 hours. How much time is needed for journey of 450 km? 4
- (b) At what rate Rs. 1000 double itself in 5 years? 4
5. (a) Solve  $\frac{y^2}{2} - \frac{y}{6} = \frac{1}{12}$  by using quadratic formula. 4
- (b) Find domain and range of the function  $f(x) = \frac{x^2 - 16}{x - 4}$ ,  $x \neq 4$  4
6. (a) Solve the system of equations  $2x - 5y = 1$  by using Cramer's rule. 4
- $3x + 4y = 36$
- (b) Evaluate by changing into binary number system :  $[(111011)_2 + (110001)_2] - (20)_{10}$  4

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