SL

SEAT No._____ *No. of printed pages: 02*

[61/A-22]

SARDAR PATEL UNIVERSITY
B.B.A. (ITM) (4 Years) EXAMINATION
SEMESTER – I (NC)
Wednesday, 15th November 2017
2.00 p.m. to 4.00 p.m.
UM01CBBI07: BUSINESS MATHEMATICS

Total Marks: - 60

Q.1

(a) Define following terms with example: 05
1. Union of two sets
2. Power set

(b) Verify following by Venn diagram: 05
1. $(A \cup B)' = A' \cap B'$
2. $A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$

(c) Express the inequality in a Modulus form: $3 < x < 8$ 05

Q.1 **OR**

(a) If A = Set of letters of the word 'MINISTER ', B = Set of letters of the word 'MISTER 'and C = Set of letters of the word 'INSTANT '. 04
Then verify that $A \cap (B-C) = (A \cap B)-(A \cap C)$.

(b) If $U = \{x: 1 \leq x \leq 13, x \in N\}, A = \{1,2,3,4,6\}, B = \{2,4,6,8,10\}$ *and* $C = \{3,4,5,6,9\}$, *then find* $A \cup B, A \cap C, B - C, A\Delta C$ *and* A'. 05

(c) **(1)** Express 0.25252525 ... in a quotient form. 06
(2) Express in the form of an interval: $|x - 4| < 7$

Q.2

(a) Explain following terms with example: 04
1. Null Matrix
2. Transpose matrix

(b) Solve the equations by Cramer's rule: $x + 2y = 8$, $3x + 4y = 14$. 05

(c) If $A = \begin{bmatrix} 4 & -1 \\ -1 & 3 \\ 2 & 0 \end{bmatrix}, B = \begin{bmatrix} -2 & 5 \\ 3 & -1 \\ 5 & 2 \end{bmatrix}$ and $C = \begin{bmatrix} 2 & 4 \\ -1 & 5 \\ 3 & -2 \end{bmatrix}$, 06
Then find **1.** $2A + C$ **2.** $A + B - C$ **3.** $3B - 2C$

Q.2 **OR**

(a) Solve using inverse of a matrix: 09

$$2x + y - z = 3$$
$$x + y + z = 1$$
$$x - 2y - 3z = 4$$

(b) If $A = \begin{bmatrix} 1 & 0 & 2 \\ 2 & 4 & 1 \\ 3 & 1 & 2 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 2 & 0 \\ 2 & 0 & 1 \\ 1 & 3 & 2 \end{bmatrix}$, then find AB and BA. 06