SC

SEAT No._____ [A-5]

No. of printed pages: 02

SARDAR PATEL UNIVERSITY
B.B.A. (ISM) EXAMINATION
SEMESTER – I (CBCS) (NC) 2010 BATCH
Thursday, 16th November 2017
10.00 a.m. to 12.00 p.m.
UM01EBBS01: BUSINESS MATHEMATICS - I

Total Marks: - 60

Q.1

(a) **(1)** Solve: $|x-3|=1$ 08

(2) Express the following inequalities in a Modulus form: $3 < x < 7$

(b) If U = {1,2,3,4,5,6,7,8,9,10,11}, A = {1, 2, 5, 6, 9} and B = {2,3,9,6,7,8} and C = {1,3,,5,6,7}, then find **(1)** $A \cup B, B \cap C, B - C$. 07

(2) $(A \cup B)' = A' \cap B'$

Q.1 **OR**

(a) Define the terms with example: **(1)** Union of two sets 08

(2) Intersection of two sets

(3) Empty set

(4) Finite set

(b) **(1)** Verify by Venn diagram : $A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$ 03

(2) Express 0.333333….into quotient form. 04

Q.2

(a) If $A = \begin{bmatrix} 4 & -1 \\ -1 & 3 \\ 2 & 0 \end{bmatrix}, B = \begin{bmatrix} -2 & 5 \\ 3 & -1 \\ 5 & 2 \end{bmatrix}$ and $C = \begin{bmatrix} 2 & 4 \\ -1 & -5 \\ 3 & -2 \end{bmatrix}$, 08

Then find **1.** $A - C$ **2.** $A + B + C$ **3.** $2A + C$ **4.** $3A - 2B$

(b) Solve the following equations by Inverse of matrix: 07

$2x + 3y = 10,$

$x + 6y = 4$

OR

Q.2

(a) Define the terms with example: **(1)** Square matrix 08

(2) Transpose Matrix

(3) Zero Matrix

(4) Row matrix

(b) Solve the equations by Cramer's Rule: $2x + y = 4,\ 5x + 3y = 9$ 07

Q.3

(a) Find a if the distance between $(-3,-2)$ and $(a,1)$ is $3\sqrt{10}$. 05

(b) Show that the equation of a line having slope m and Y- intercept c is $y = mx + c$. 05

(c) Prove that the points (2, 3), (6, 5) and (12, 8) are collinear. 05

OR

(P. T. O.)

Q.3

(a) Find the equation of line having slope $\frac{1}{5}$ and which passes through the point of intersection of the lines $x-4y+18=0$ and $x+y-12=0$ — 05

(b) Find the equation of a line making Y-intercept $1/2$ and having slope -2. — 05

(c) Explain the term: Slope of a line. — 05
Find the slope of the line joining the points A (4, 2) and B (5, 8).

Q.4

(a) Evaluate following: — 10

1. $\lim_{x\to 3} \frac{x^3-27}{x^2-5x+6}$

2. $\lim_{x\to 0} \frac{5^x-3^x}{x}$

(b) Write working rules for Limit. — 05

OR

Q.4 Evaluate following: — 15

1. $\lim_{x\to 3} \frac{x^3-27}{x^2-9}$

2. $\lim_{n\to\infty} (1+\frac{3}{n})^n$

3. $\lim_{x\to 3} \frac{3-x}{\sqrt{3+x}-\sqrt{6}}$