SEAT No._____

Sardar Patel University, Vallabh Vadhyanagar
External Examination 2019
F.Y.B.B.A. (Gen) – SEM – II
UM02DBBA22 - Business Mathematics - II

Date : 30-03-2019   Time: 02:00 PM TO 04:00 PM   Total Marks: 60
Day : Saturday

Q-1 (a) If $y = \dfrac{1+t}{1-t}$ & $x=t^2 + 1$ then find $\dfrac{dy}{dx}$.   [05]

(b) Write the rules of differentiation.   [05]

(c) If $f(x) = x^3 - 3x + 4$ then find the point at which f(x) is minimum and maximum.   [05]

OR

Q-1 (a) If $y= \left(\sqrt{x} - \dfrac{1}{\sqrt{x}}\right)\left(\sqrt{x} + \dfrac{1}{\sqrt{x}}\right)\left(x + \dfrac{1}{x}\right)$ then find $\dfrac{dy}{dx}$.   [05]

(b) Find $\dfrac{dy}{dx}$, if $y =(4x^2 + 3x - 4)^6$ [05]

(c) If cost function $C(x)=\dfrac{1}{3}x^3 + x^2 - 15x + 2$ where x is the number of articles. Find minimum value of C.   [05]

Q-2 (a) If $nC_4 : nC_3 = 7 : 4$ then find the value of n.   [05]

(b) How many three digited numbers can be formed using the digits 1, 2, 4, 5, 6, 7, 8 only one time?   [05]

How many of them are
(1) more than 500 (2) even numbers (3) less than 700

(c) Evaluate : (1) $9P_2 \times 6P_3$ (2) $10P_4 \div 2C_0$ (3) $50C_{48}$ [05]

OR

Q-2 (a) Find n if $2nP_3 = 14. nP_4$ [05]

(b) How many words can be formed using all the letters of the word "NIRAV"?   [05]
Out of them how many start with (1) Vowel (2) start and end with vowel

(c) Find the number of committees of 5 members from 7 boys and 4 girls can be formed such that committee contains at least one girl.   [05]

Q-3 (a) Obtain the equation of a line joining two points $A(x_1, y_1)$ and $B(x_2, y_2)$.   [05]

(b) Find x if $d\{ (x, -4) , (-8, 2) \} = 10$ [05]

(c) Find the equation of a line passing through the point (2, 3) and making equal intercepts on the co-ordinate axes.   [05]

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(P.T.O)

Q-3 (a) Find the equation of a line passing through (-1, 2) and (5, -3) also find slope and both intercepts. [05]

(b) Obtain the equation of a line having slope m and making intercept 'C' on y-axis. [05]

(c) Find the equation of a line passing through the point of intersection of the lines x - 2y + 5 = 0 and 3x + y - 4 = 0 and parallel to the line y = 2x + 3. [05]

Q-4 (a) Solve the following linear programming problem by graphical method : [08]
Max Z= 3x + 5y
Such That 3x + 2y ≤ 18
$x \le 4, y \le 6$
$x, y \ge 0$
Also write the meaning and uses of linear programming problem.

(b) Solve the following transportation problem by Vogel's approximation method. [07]

	D1	D2	D3	D4	Demand
O1	1	2	1	4	30
O2	3	3	2	1	50
O3	4	2	5	9	20
Supply	20	40	30	10	

OR

Q-4 (a) Solve the following transportation problem by using (1) NWCM (2)LCM [08]

	D1	D2	D3	D4	Demand
O1	6	4	1	5	14
O2	8	9	2	7	16
O3	4	3	6	2	05
Supply	6	10	15	4	

(b) Solve the following linear programming problem by using graphical method : [07]
Max Z= 6x + 7y
Such That   4x + 2y ≤ 60
2x + 4y ≤ 48
$x, y \ge 0$

—X—

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