Sc

60 & A-24

SEAT No._____

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SARDAR PATEL UNIVERSITY

MARCH - APRIL : 2018 EXAMINATION, BBA (GENERAL) SEMESTER : II

FRIDAY, 06/04/2018

EVENING SESSON TIME : 2.00 PM. TO 4.00 P.M.

SUBJECT CODE : UM02CBBA06

BUSINESS MATHEMATICS - II

TOTAL MARKS : 60

Q-1 (A) Evaluate : [05]

(1) ${}_5C_2 \times {}_5P_2$

(2) ${}_{10}C_0 + {}_{10}P_1 + 5! + \frac{3}{0!}$

Q-1 (B) If ${}_nP_3 : {}_{(n+1)}P_3 = 3:4$ then find the value of n. [05]

Q-1 (C) How many different numbers of four digits can be formed by using the digits 1, 3, 5, 7, 9 ? (1) How many of them will be divisable by 5? (2) greater than 9000? [05]

OR

Q-1 (A) In how many ways a committee of 4 persons can be formed from 5 boys and 3 girls in which there are at most 2 girls? [05]

Q-1 (B) Find n if ${}_{2n}C_3 = {}_nP_4$ [05]

Q-1 (C) How many different words can be formed using all the letters of the word 'NIRAV' without repetition out of which in how many words [05]

(1) A is at the start?

(2) A is at the start and R is at the end.

Q-2 (A) Find the maximum or minimum value of the function $f(x) = x^3-3x+4$ [05]

Q-2 (B) Find dy/dx :

(1) $y = 4x^5 + 3x^4 - 2x^3 - 2x + 5$ [02]

(2) $y = \log(\log x)$ [04]

(3) $y = 3^x \cdot \log x$ [04]

OR

Q-2 (A) If the demand function is x=20-2P then find elasticity of demand when price is 2. [04]

Q-2 (B) Find dy/dx for

(1) $y = \frac{1-t}{1+t} \quad x = \frac{t}{1+t}$ [05]

(2) $y = 4x^3 + 4e^x + \log x$ [03]

(3) $y = x^4 \cdot e^x$ [03]

Q-3 (A) A company issued 50,000 debentures each of Rs. 100 to be redeemed after 10 years. It was decided to create a sinking fund for this purpose and to invest it at 12.5% rate of compound interest. Find out the sum to be transferred to this fund at the end of every year. [05]

Q-3 (B) The cost of building a new house at present is Rs. 7,50,000. If it increases at 5% every year. Find out the increased cost of a similar house if it is build after 4 years. [05]

(P.T.O)

Q-3 (C) Explain the following terms : [05]

(1) Annuity (2) Sinking Fund (3) Simple interest (4) Compound interest

OR

Q-3 (A) The population of a city is 49949 at present. Before 7 years the population of a city was 35498. Find the rate of growth of the population of the city. [05]

Q-3 (B) Shreya has obtained a loan to start a factory. This loan is to be repaid in 10 installments of Rs. 1,75,000 each at the end of the every year. If the rate of compound interest is 12% find the amount of the loan. [05]

Q-3 (C) What is an aggregate amount for Rs. 4000 at 12% rate of compound interest for 3 years if the interest is compounded every six months? [05]

Q-4 (A) Write the meaning and assumptions of Linear Programming Problem. [04]

Q-4 (B) Solve the following assignment problem. [05]

	P	Q	R	S
A	0	7	14	21
B	12	17	22	27
C	12	17	22	27
D	18	22	26	30

Q-4 (C) Solve the following by graphical method. [06]

Max $Z = 5x + 7y$

s.t. $x + y \leq 70$,

$x + 2y \leq 100$

$2x + y \leq 120$

$X \geq 0, y \geq 0$

OR

Q-4 (A) Solve the following transportation problem by [10]

(1) NWCM (2) VAM

	A	B	C	D	Supply
P	15	10	17	18	2
Q	16	13	12	13	6
R	12	17	20	11	7
Demand	3	3	4	5	

Q-4 (B) Solve the following Assignment problem. [05]

	P	Q	R	S
A	12	15	18	8
B	13	10	9	14
C	10	12	15	13
D	7	8	9	14