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SARDAR PATEL UNIVERSITY

B.B.A. (General) SEMESTER – II (NC) EXAMINATION

Wednesday, 4th May 2016

10.30 a.m. to 12.30 p.m.

UM02CBBA05/10: BUSINESS MATHEMATICS – II

Total Marks: - 60

Note: Log table & Graph Paper will be provided on request.

Q.1

(a) Find the value of n, if four times the number of permutations of n things taken three together is equal to five times the number of permutations of $(n-1)$ things taken three together. (05)

(b) In how many ways can a group of 5 men and 2 women be made out of a total of 7 men and 3 women? (05)

(c) Do as directed: (05)

1. Find n, if ${}_nC_6 = {}_nC_5$ **2.** Evaluate: ${}_7C_2 + 0! + 4$

Q.1 **OR**

(a) How many different words can be formed using the following words without repetition? (05)

(1) OPTICAL **(2)** BHARAT **(3)** COMMITTEE

(b) In how many ways 4 cards of (i) different suits (ii) same suit can be selected from 52 playing cards? (05)

(c) Do as directed: (05)

1. Find n: ${}_nP_4 = 840$ **2.** Evaluate : ${}_9P_2 + {}_5P_5$

Q.2

(a) Find $\frac{dy}{dx}$: (06)

1. $y = t^2 + 1, x = t + 1$

2. $y = \frac{\log x}{x}$

(b) Write rules of differentiation. (05)

(c) If the supply function is $x = 24 - 3p$, find elasticity of supply. Also find the elasticity of supply when $p = 2$. (04)

Q.2 **OR**

(a) Find $\frac{dy}{dx}$: (06)

1. $y = x + \frac{1}{x} + \log x + a^x$.

2. $y = e^x \cdot \log x$

(b) Find the maximum value of the function $f(x) = 2 - x - x^2$. (05)

(c) Find $\frac{d^2y}{dx^2}$, if $y = 5x^3 + 9x^2 - 3x + 4$. (04)

Q.3

(a) Explain the terms: Annuity and Compound Interest. (05)

(b) The production of a company at present is 40,000 tons. It aims at 8% growth rate of production. Find out its production at the end of 7th year. (05)