

Attempt any  
five questions

Business Mathematics  
B. Com - 1st year (Paper - BCO2)

M.M-10

Assignment - I

Q-1 If  $u = \log \frac{x^4 + y^4}{x - y}$ , show that  $x \frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y} = 3$ .

Q-2 Evaluate  $\int_0^a \frac{\sqrt{x}}{\sqrt{x} + \sqrt{a-x}} dx$

Q-3 Prove that  $\begin{vmatrix} 1 & a & a^2 - bc \\ 1 & b & b^2 - ca \\ 1 & c & c^2 - ab \end{vmatrix} = 0$ .

Q-4 Find the area bounded by the curve  $y = 4x^2$ ,  $x \geq 0$ , the axis of  $y$  and the lines  $y=1$ ,  $y=4$ .

Q-5 Examine for maximum and minimum values of the function  $xy + \frac{a^3}{x} + \frac{a^3}{y}$ .

Q-6 The compound interest on a certain sum for 2 years at 5% is ₹ 328. Find the sum.

Q-7 ₹ 5500 is deposited each year in an account earning 8% interest p.a. compounded continuously. Find the amount after 10 years.

Q-8 Solve the L.P.P. by Simplex method, Maximize

$$z = 3x + 5y, \text{ subject to constraints}$$

$$x + 2y \leq 2000, \quad x + y \leq 1500, \quad y \leq 600, \quad x \geq 0, \quad y \geq 0$$

(Solved)  
22/11/16

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five questions

Business Mathematics  
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Assignment - II

M.M-10

Q-1 If  $u = \frac{x^2 y^2}{x+y}$ , show that  $x \frac{\partial^2 u}{\partial x^2} + y \frac{\partial^2 u}{\partial x \partial y} = 2 \frac{\partial u}{\partial x}$ .

Q-2 Evaluate  $\int \frac{x}{(x-1)^2(x+2)} dx$ .

Q-3 solve by Cramer's rule

$$x + y + z = 9, \quad 2x + 5y + 7z = 52, \quad 2x + y - z = 0.$$

Q-4 Show that  $f(x, y) = (y-x)^4 + (x-2)^4$  has a minimum value at  $(2, 2)$ .

Q-5 Find the area of the region between the parabola  $y^2 = 4x$  and  $x^2 = 4y$ .

Q-6 A new car is purchased for ₹ 400000. Its value depreciates at the rate of 10% per annum. What will be its value after 4 years.

Q-7 Find the present value of an annuity due of ₹ 1000 per annum for 14 years allowing interest at 9% p.a.

Q-8 Solve the L.P.P. by Simplex method

Maximize  $Z = 2x_1 + 4x_2$ , subject to the constraints:

$$2x_1 + 3x_2 \leq 48, \quad x_1 + 3x_2 \leq 42, \quad x_1 + x_2 \leq 21, \quad x_1, x_2 \geq 0$$

(Mans)  
27/11/16