

END TERM EXAMINATION

FIRST SEMESTER [BCOM(HONS)] JANUARY-FEBRUARY 2023

Paper Code: BCOM105 Subject: Quantitative Techniques for Commerce

Time: 3 Hours

Maximum Marks: 75

Note: Attempt any five questions. All questions carry equal marks.

- Q1 In a certain cities there are 25 colleges and 100 schools, Each school and college has 5 peons, 2 clerks and 1 cashier. Each college in addition has 1 accountant and 1 head-clerk. The monthly salary of each of them is as follows:
Peon - Rs. 3000; Clerk - Rs. 5000; Cashier - Rs. 6000; Accountant - Rs. 7000 and Head-Clerk - Rs. 8000.
Using the matrix notation, find
- a) The total number of posts of each kind in schools and colleges taken together.
 - b) The total monthly salary bill of each school and college separately.
 - c) The total monthly salary bill of all the schools and colleges taken together.
- Q2 a) Find the number of combinations that can be made by taking 4 letters of the word COMBINATION.
b) If a, b, c, d are in G.P., prove that $a+b$, $b+c$, $c+d$ are also in G.P.
- Q3 a) The average cost function (AC) for a commodity is given by $AC = x + 5 + 36/x$
in terms of the output x . Find the output for which AC is increasing and the output for which AC is decreasing.
Also find the total cost C and the marginal cost (MC) as function of x .
- b) Find the elasticity of demand for the demand function:
 $x = 27/p^3$
where x is the demand of a commodity at a price p .
- Q4 a) Demand and supply functions are:
 $D(x) = (12 - 2x)^2$
and $S(x) = 56 + 4x$ respectively. Determine consumer surplus under monopoly (so as to maximize the profit) and the supply function is identified with the marginal cost function.

P.T.O.

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