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GOPAL GOVIND POY RAITURCAR COLLEGE OF COMMERCE AND ECONOMICS
FARMAGUDI, PONDA – GOA
B.Com. UGC-CCFUP (SEMESTER-I) PRACTICAL EXAMINATION
OCTOBER/NOVEMBER 2024
COM-142 BUSINESS MATHEMATICS - I

Time: 2 Hours **Marks: 30**

INSTRUCTIONS i) Answer any 6 of the given questions.
ii) Figures to the right indicate full marks.
iii) Use of non−progammable calculator is allowed.

Q 1. A sum is divided among A, B and C in the ratio 6 : 4 : 3. If A's share is ₹ 2784, find the share of B and C. (5 m)[CO1][BL3]

Q 2. A man can finish a job in15 days and a woman in 20 days. If they work on it together for 4 days, find the amount of work left. (5 m)[CO1][BL3]

Q 3. A man bought a mobile for ₹ 15,000 and sold it at a loss of 25%. Find the selling price of the mobile. (5 m)[CO1][BL3]

Q 4. Find the selling price of a dining table which is marked at ₹ 10,000 after allowing 20% trade discount and 5% cash discount. (5 m)[CO1][BL3]

Q 5. Find the present value of an annuity of ₹ 30,000 per annum for 3 years with interest compounded at 8% per annum. (5 m)[CO2][BL3]

Q 6. A person has taken a loan of ₹ 40,000 from a money lender who charges interest at 10% per month. The person returns the loan in equal installments in 4 months. Find his EMI. (5 m)[CO2][BL3]

Q 7. In a class of 75 students, 40 students take tea, 35 take coffee, 30 take milk, 15 take both tea and coffee, 10 take both coffee and milk, 12 take both tea and milk and 4 take all three beverages. Draw a Venn diagram showing these sets and find the number of students not taking any beverage. (5 m)[CO3][BL3]

Q 8. If the demand function is $y = 100 - 3x - x^2$, find the price elasticity of demand when $x = 2$. (5 m)[CO4][BL3]

Q 9. Find the maximum and minimum value of the function $f(x) = 2x^3 - 15x^2 + 36x + 5$. (5 m)[CO4][BL3]

Q 10. The supply function for a commodity is $p = x^2 + 5x + 4$ where x is the quantity supplied. Find the producer's surplus when $x = 1$. (5 m)[CO4][BL3]

Q 11. Find $\frac{dy}{dx}$ and $\frac{d^2y}{dx^2}$ at x = 56 using Newton's Backward Difference formula

x	50	51	52	53	54	55	56
y	3.6840	3.7084	3.7325	3.7563	3.7798	3.8030	3.8259

(5 m)[CO4][BL3]

Q 12. Evaluate the integral by using Simpson's 1/3 rule for the following data

x	0.0	0.1	0.2	0.3	0.4
y	1.0000	0.9975	0.9900	0.9776	0.8604

(5 m)[CO4][BL3]