

Vidya Vikas Mandal's
Shree Damodar College of Commerce & Economics, Margao-Goa
FY B.Com, Semester-I, Semester End Examination (OA-38) November 2023
Business Mathematics-I (COM-142, NEP-2020)

Duration: 1 hour

Total Marks: 20 marks

Instructions:

- Start each question on a fresh page.
- Figures to the right indicate maximum marks.
- Use of non-scientific, non-programmable calculators is allowed.

Q1. Answer each of the following:

(4×1=4)

- i) Define proportion.
- ii) Recognize the method of specifying sets for the set $A = \{x | x \text{ is a real number, } -3 \leq x < 4\}$.
- iii) State the integral of a^x .
- iv) Define the null set.

Q2. A) Define the Future Value of an ordinary annuity and recall it's formula.

(2)

B) State the types of operations on sets.

(2)

Q3. A) Illustrate by giving examples one-one function and one-many function.

(2)

B) Estimate the proportion after using i) invertando ii) alternando for $\frac{51}{89} = \frac{102}{178}$

(2)

OR

C) Identify the subsets of the set $\{1,2,3,4,5\}$.

(2)

Q4. A) Illustrate the algebra of derivatives for

(2)

$\frac{d}{dx}(u - v)$ and $\frac{d}{dx}(uv)$, where u and v are functions of x

B) Estimate the percentage of profits over the MRP. Of Rs. 200, for the profits (i) 40 (ii) 20

(2)

OR

C) Differentiate between ratios and proportions.

(2)

Q5. A) Compute the derivative of $x^3 + 2x^{\frac{3}{2}} + 5$

(2)

B) Compute the integral $\int (x^6 + 3x^{\frac{9}{5}} + 10)dx$

(2)

OR

C) Calculate the definite integral:

(2)

$$\int_1^2 (x^5 + 2x^3 + 3)dx$$

THE END