

Vidya Vikas Mandal's  
Shree Damodar College of Commerce & Economics, Margao-Goa  
FY BBA, Term-II, End Term Assessment Repeat March 2024  
BBCB029 – Business Mathematics 1

**Duration: 1 hr. 30 min**

**Max Marks: 25**

**Instructions:**

- 1) Start each question on fresh page.
- 2) Figures to the right indicate maximum marks.

**Q1. Answer the following:**

1. If  $A = \{2x \mid x \in \mathbb{N}\}$  and  $B = \{2x + 1 \mid x \in \mathbb{N}\}$  are subsets of the universal set  $X = \mathbb{N}$ .  
Find  $A \cup B$  and  $A \cap B$ . [ 2 Marks]
2. Find the compound interest on Rs 15,000 at 15% p.a for 3 years. [ 2 Marks]
3. In how many different ways one can arrange the letters of the word 'MATH'.  
[1 Mark]

**Q2. Attempt the following:**

**[5x4 = 20 Marks]**

1. Some people go the cinema. 4 adults and 2 child tickets cost 47 dollars. 1 adult and 3 child tickets cost 25.5 dollars. Work out the cost of an adult and child ticket.
2. Evaluate  $D = \begin{vmatrix} 1 & 3 & 4 \\ 2 & -1 & 2 \\ 2 & -1 & 2 \end{vmatrix}$
3. Ian invests Rs 500 in the first month and increases his monthly investment by Rs 50 in every succeeding month. What will be the investment at the end of 3 years.
4. Find the amount for the ordinary annuity with periodic payment as Rs 2000 at the rate of interest 12% per annum for 2 years. Calculate if period of payment is yearly. Also state the capital invested.
5. If the price/ demand function  $p(x) = 60 - x$  and the cost function  $c(x) = 170 - 10x$ . Determine the breakeven point.

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