

**DR M.P.S. MEMORIAL COLLEGE OF BUSINESS STUDIES,  
SIKANDRA, AGRA**

**Assignment Question of BBA – 1 Sem**

**Subject: Business Mathematics**



1. Define Sets and its types with suitable examples.
2. Define Relation and its types with suitable examples.
3. If  $U = \{2,3,4,5,6,7,8,9,10,11\}$ ,  $A = \{2, 4, 7\}$ ,  $B = \{3, 5, 7, 9, 11\}$  and  $C = \{7, 8, 9, 10, 11\}$  then find the value of (i)  $(A \cap B)$ , (ii)  $B \cup C$  (iii)  $(A \cup B) \cap (B \cup C)$
4. Find the percentage of profit or loss:
  - (i) Purchase price Rs 600 and selling price Rs 800
  - (ii) Purchase price Rs 50 and selling price Rs 45
5. Find the value of 'r' if  $18_{c_r} = 18_{c_{r+2}}$
6. Solve:  $2\log\frac{4}{3} + \log\frac{3}{8} - \log\frac{2}{3}$
7. Let A and B be two finite sets such that  $n(A) = 20$ ,  $n(B) = 28$  and  $n(A \cup B) = 36$ , find  $n(A \cap B)$ .
8. Expand:  $\left(x - \frac{1}{x}\right)^4$
9. Prove that:  $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$
10. Find the value of  $A^3 - 6A^2 + 7A + 2I$ , if  $\begin{bmatrix} 1 & 0 & 2 \\ 0 & 2 & 1 \\ 2 & 0 & 3 \end{bmatrix}$
11. If  $\begin{bmatrix} 1 & 2 & 1 \\ 1 & -1 & 1 \\ 2 & 3 & -1 \end{bmatrix}$  then find  $A^{-1}$
12. Solve the following system of equation by using inverse matrix:
$$2x - 3y + 5z = 7, 5x + 2y - 7z = -12, -4x + 3y + z = 5$$
13. (i) Evaluate: (i)  $\frac{d}{dx} \left( \frac{x^3\sqrt{x^2+4}}{\sqrt{x^2+3}} \right)$  (ii)  $\frac{d}{dx} \left( \frac{9x}{x^3+5} \right)$   
(ii) Evaluate: (i)  $\int x^4(5x^5 + 3x^2 - 9)dx$  (ii)  $\int x^3(2x^2 + x - 7)dx$
14. Find the maximum and minimum values of the function:  $f(x) = x^3 - 6x^2 + 12x - 8$
15. (i) 8th and 102th terms are respectively 23 and 305 of A.P. Find 10th term. Also find the sum of first 10 terms.  
(ii) 4th term of G.P. is 40 and 10th term is 2560. Find the 7th term. Also find the sum of first 10 terms

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