

S.NO:301

BATCH: 87-2018

REG. NO.:

**END OF SEMESTER EXAMINATIONS, APRIL / MAY - 2019**  
**MATHEMATICS FOR MANAGERS-I**  
**SUBJECT CODE: 15UBBM06**

MAJOR: B.B.A  
 TIME : 3 HOURS

SEMESTER : II  
 MAX. MARKS: 75

**SECTION - A (10 X 1 = 10)**Answer All the questions:

1. If  $A \subseteq B$  and  $B \subseteq A$  then?
2. Find the difference of the sets  $\{1,2,3\}$  and  $\{1,2,5\}$ ?
3. If  $A = (3 \ 5 \ 6)$ ,  $B = \begin{pmatrix} 4 \\ 1 \\ 2 \end{pmatrix}$  find  $AB$ .
4. Write formula for  $A^{-1}$ .
5. Write formula for Simple Interest.
6. Write formula for Compound Interest.
7. Find the median for the following 6,9,21,5,7,-2,0,32,9.
8. Determine the mode for the following 5,9,21,5,7,-2,0,5,9.
9. When the values of two variables change in the opposite direction is called?
10. Write formula for Regression equation Y on X.

**SECTION - B (5 X 4 = 20)**Answer any Five questions:

11. If  $A = \{1,2,4,6,8\}$ ,  $B = \{2,3,4,5,6\}$ ,  $C = \{3,6,9,12,15\}$ , find  $A-B$ ,  $B-C$ ,  $C-A$ .
12. Verify  $A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$  by means of a venn diagram.
13. Calculate the total amount that will be received from the debtor when the principle Rs.10,000 is lent to him on interest for 4 years at 9% p.a.
14. Calculate the compound interest for Rs.2500 for 4 years at 8% annum.  
 a) half yearly                      b) quarterly
15. If  $A = \begin{pmatrix} 1 & 2 & 3 \\ 2 & 4 & 6 \\ 3 & 6 & 9 \end{pmatrix}$  and  $B = \begin{pmatrix} -1 & -2 & -4 \\ -1 & -2 & -4 \\ 1 & 2 & 4 \end{pmatrix}$ , Prove that  $AB \neq BA$ .
16. Calculate the mode

Central value	70	90	110	130	150
Frequency	43	78	83	125	87

17. Find the quartile deviation for the following  
 391,384,591,407,672,522,777,733,1490,2488.
18. Calculate the two regression equation from the following data

X	10	12	13	12	16	15
Y	40	38	43	45	37	43

..2...

**SECTION – C (3 X 15 = 45)****Answer any Three questions:**

19. A universal set is  $U = \{0,1,2,3,4,5\}$ . Sets  $A = \{0,1,2\}$ ,  $B = \{2,4\}$ .

Prove that (i)  $(A \cup B)' = A' \cap B'$  (ii)  $(A \cap B)' = A' \cup B'$

20. A bill for Rs 1,825 was drawn on 22<sup>nd</sup> January at 6 months date and discounted on 16<sup>th</sup> April at the rate of 10% per annum. Find the sum for which the bill was discounted and the banker's gain.

21. Solve the following system of equations by using Cramer's rule.

$$2x - y + 3z = 1$$

$$x + y + z = 2$$

$$x - y + z = 4$$

22. Calculate the arithmetic mean, median and mode from the following data.

Value	45	55	65	75	85	95	105
Frequency	32	65	128	167	136	79	43

23. Calculate the Karl Pearson's coefficient of correlation between X and Y.

X	45	70	65	30	90	40	50	75	85	60
Y	35	90	70	40	95	40	60	80	80	50

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