

SI. NO: 418

BATCH: 87 - 2017

Reg. No.:

(7)

END OF SEMESTER EXAMINATIONS, NOVEMBER - 2018
 MATHEMATICS FOR MANAGERS - I
 SUBJECT CODE: 15UBBM06

131

MAJOR : B.B.A.
 TIME : 3 HOURS

SEMESTER : II
 MAX. MARKS: 75

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

1. What is the name of the set there are countless number of elements in a set?
2. Write a De Morgan's laws.
3. If $p=100$, $r=8\%$ (p.a.), $n=1$ (year) then find the compound interest.
4. When a square matrix A is said to be singular?
5. If every element of a row is zero, then what is the value of the determinant?
6. Is the sum of an annuity is sum of the amounts of all the installment payments?
7. Quartile deviation is half of the difference between the which quartiles?
8. Statistics deals with what kind of data?
9. When $2C - N > 0$, find r_c .
10. Write the regression equation of y on x.

SECTION - B (5 X 4 = 20)**Answer Any FIVE Questions:**

11. If $A = \{0, 1, 3, 4, 6, 7, 9, 10\}$, $B = \{2, 3, 4, 5, 6\}$ and $C = \{4, 5, 6, 7, 8, 9\}$ prove that
 i) $A - (B \cup C) = (A - B) \cap (A - C)$ ii) $A - (B \cap C) = A - B \cup (A - C)$
12. Of the total number of 200 students appearing in an examination, 140 passed in maths and 100 passed in statistics. If 40 of them failed in both maths and statistics, what percentage of students passed
 i) atleast in one of the two subjects? ii) In both the subjects?
3. If $A = \begin{bmatrix} 3 & 5 \\ 2 & a \end{bmatrix}$, $B = \begin{bmatrix} 4 & b \\ 2 & \end{bmatrix}$ and $C = \begin{bmatrix} 26 & a \\ 14 & 45 \end{bmatrix}$ find a and b when $2A + 5B = C$.
4. If $10A - 50I = 0$ and $A = \begin{bmatrix} 5 & 0 & 0 \\ 0 & 5 & 0 \\ 0 & 0 & 5 \end{bmatrix}$. Find A^{-1} .
5. A sum of money invested at compound interest amounts to Rs.21632.00 in years and to Rs.22,497.28 in 3 years. Find the rate of interest and the sum invested.
6. Mr.X borrows Rs.1716. He repays Rs.250 at the end of each year. In how many years can be clear the debt if the rate of CI is 7.5%p.a.?
7. Define median and find median from the following:

Wages (in Rs.)	50	75	100	150	250
No. of Labour	8	14	10	5	3

...2...

18. Calculate the index number of prices for 1998 on the basis of 1995 from the data given below:

Commodity	Weights	Price (1995)	Price (1998)
A	40	16	26
B	25	40	60
C	5	2	3
D	20	5	7
E	10	2	4

SECTION - C (3 X 15 = 45)

Answer Any THREE Questions:

19. Out of a group of 60 students, 25 play cricket, 30 play football, 24 play hockey, 10 play cricket and football, 9 play cricket and hockey, 12 play hockey and football and 5 play all the three. Use venn diagram to show how many play only one game.

20. Define inverse of matrix and show that the matrix, $A = \begin{bmatrix} 2 & -1 & 1 \\ -1 & 2 & -1 \\ 1 & -1 & 2 \end{bmatrix}$ satisfies the equation

$$A^3 - 6A^2 + 9A - 4I = 0. \text{ Hence deduce the value of } A^{-1}.$$

21. i) An industry starts by producing 50,000 units in its first year and the production for every year increases by 8% of that of the previous year. How many units will it produce in the seventh year? What is the sum total of the whole production in the first three years?

ii) A person has two daughters A and B aged 13 and 16 years. He has Rs.40,000 with him now but wants that both of them should get an equal amount when they are 20 years old. How he should divide the money if it were to be deposited in a bank giving 9% compound interest per annum?

22. For the data given here, give the quartile deviation:

X	351 - 500	501 - 650	651 - 800	801 - 950	951 - 1100
Y	48	189	88	47	28

3. From the data given below, Find

- a) the two regression equations
b) the coefficient of correlation between the marks in mathematics and statistics
c) the most likely marks in statistics when the marks in mathematics is 30

Marks in Mathematics	25	28	35	32	31	36	29	38	34	32
Marks in Statistics	43	46	49	41	36	32	31	30	33	39
