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BCMCMCN 202

**Second Semester B.Com. Degree Examination, June/July 2024
(NEP 2020) (2021-22 Batch Onwards)
BUSINESS MATHEMATICS (DSCC)**

Time : 2 Hours

Max. Marks : 60

**SECTION – A
(2 marks each)**

Answer **any five** of the following :

(5×2=10)

1. Give the meaning of 'Prime Number'. Provide suitable example.
2. Find the LCM of 42, 60, 72.
3. Find the simple interest on Rs. 2,276 for 2 years 6 months at 12.5% p.a.
4. What do you mean by 'Perpetual Annuity' ?
5. Sum of three consecutive numbers is 48. Find the numbers.
6. $A = \{a, b, c, d, e\}$, $B = \{a, b, x, y\}$. Find $A \cup B$.
7. Find the value of ${}^{14}P_4$.
8. If one side of a square is 4 cm, then what will be its 'Area' and 'Perimeter' ?



**SECTION – B
(5 marks each)**

Answer **any four** of the following :

(4×5=20)

9. Find HCF of $\frac{2}{3}$, $\frac{8}{9}$, $\frac{16}{81}$, $\frac{10}{27}$.
10. Find the compound interest on Rs. 12,000 for 3 years at 14% p.a.
11. Solve : $3x + 7y = 13$
 $5x - 2y = 8$

P.T.O.



12. In a class of 120 students, each student has to take 'Business Mathematics' or 'Corporate Administration'. If 60 students take 'Corporate Administration' and 40 students take both 'Business Mathematics' and 'Corporate Administration'. How many take 'Business Mathematics' ?
13. Find the number of permutations of word "ACCOUNTANTS".
14. The area of a square is 1296 square feet. Find its 'Perimeter'.

SECTION – C
(15 marks each)

Answer **any two** of the following :

(2×15=30)

15. a) The HCF of 84 and 15 is 3. Find their LCM. The LCM of 44 and 205 is 9020. Find their HCF. 5
- b) Prove that $\frac{5^{n+3} - 6 \cdot 5^{n+1}}{9 \cdot 5^n - 5^n \cdot 2^2} = 19$. 5
- c) 5 carpenters can earn Rs. 360 in 6 days working 9 hours a day. How much will 8 carpenters earn in 12 days working at 6 hours a day ? 5
16. a) Find the roots of the equation $x^2 - 3x - 10 = 0$. 5
- b) The cost of 3 accountancy books and 4 business mathematics books is Rs. 48 while 2 accountancy books and 5 business mathematics books cost Rs. 46. Find the cost of accountancy book and business mathematics book. 5
- c) Find LCM of $\frac{3}{5}, \frac{2}{7}, \frac{6}{11}$. 5
17. a) Out of 1,200 students in a college 300 take Physics, 400 take Chemistry and 200 take both Physics and Chemistry. Find the number that take neither Physics nor Chemistry. 7
- b) If $A = \begin{bmatrix} 5 & 3 \\ 4 & 6 \end{bmatrix}$ and $B = \begin{bmatrix} 6 & 8 \\ 8 & 1 \end{bmatrix}$, find out $2A + 3B$. 8
18. a) If $A = \begin{bmatrix} 1 & 2 & -3 \\ 6 & 0 & 3 \\ 2 & -1 & 1 \end{bmatrix}$ and $B = \begin{bmatrix} 4 & -1 & 3 \\ 6 & 3 & 10 \\ 2 & 0 & 3 \end{bmatrix}$, find AB . 10
- b) Find the 'Present Value' of an annuity of Rs. 400 per annum for 4 years at 6%. 5

