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OECMAT IV

B.Sc. IV Semester Degree Examination, September/October - 2023

MATHEMATICS

IV : Mathematics for Everyone (OEC)
(CBCS)

Time : 3 Hours Maximum Marks : 70

Note : *Answer* ***all*** *Sections.*

SECTION - A

Answer **any ten** of the following questions. **10x3=30**

1. Define Natural numbers, Integers with examples.

2. Define Rational, Irrational numbers with examples each.

3. Define Real and Complex number with example.

4. Define Set and Subset of function with examples each.

5. Define Union and Intersections of two sets with two examples each.

6. Define One-One and Onto function with two examples each.

7. How Mathematical logic works on sets ? Define with examples.

8. Explain Mathematical Induction method with examples of the method.

9. Define Prime number with example.

10. Define Congruence of a sets.

11. Define Matrix, Skew matrix, Inverse matrix with examples each.

12. Give examples on Equivalence of matrices.

13. Define Eigen values and Eigen vectors of a square matrix.

14. Define (State) Cayley-Hamilton Theorem.

P.T.O.

SECTION - B

Answer **any eight** of the following questions. **8x5=40**

15. Define Normal subset, Equality of sets with two example each.

16. Define Many one function with two examples.

17. Define types of mathematical operation of logic conjunction, disjunction and negation with examples each.

18. Define Primes and state Binomial theorem with examples.

19. Apply Row and Column operation to echolon form of a matrix's of 4×4, 5×5.

20. Define Solutions of Congruences with examples each.

21. Define Eigen value and Eigen vectors with standard properties of two.

22. Define Rank of a matrix, find Rank of 4×4 matrix of an example own.

23. Define Chines Remainder theorem.

24. Find Rank of 3×3 matrix reducing into echolon form of a matrix by Row and Column operations.

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