

SEMESTER IV
INTERNAL ASSIGNMENT 2022
DEPARTMENT OF MATHEMATICS

MATH-H-GE-T-04
(Differential Equations)

Answer the following question.

1. (a) Solve by Method of Variation of parameters, the differential equation

$$\frac{d^2y}{dx^2} + 4y = 4 \tan 2x$$

- (b) Solve the differential equation

$$x^2 \frac{d^2y}{dx^2} - 6y = x \log x$$

5+5

Submit answer sheet to the following Mail id:

mathematics@nvc.ac.in

MATH-G-CC-T-04
(Algebra)

Answer the following question.

1. Show that all six symmetries of an equilateral triangle form a non-abelian group.
2. Show that every field is an integral domain. Is its converse true? Justify your answer.

5 + 5

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MATH-G-SEC-T-02A
(Graph Theory)

Answer the following question.

1. Prove that a connected graph G is Eulerian if and only if the degree of each vertex of G is even.
2. Draw all possible spanning tree of the complete graph K_4 .

5 + 5

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