

**Subject : Mathematics**

**Post Graduate**

**Paper : PG (MT) 01 : Group A**

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**Paper : PG (MT) 01 : Group B**

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## Group

### A

## Abstract Algebra

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## Group

### B

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**Subject : Mathematics**

**Post Graduate**

**Paper : PG (MT) 02 : Groups : A & B**

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## Group-A

### Real Analysis & Metric Spaces

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**Subject : Mathematics**

**Post Graduate**

**Paper : PG (MT) 03 : Groups A & B**

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**PG (MT)—03  
Ordinary Differential  
Equations and  
Special Functions,  
Partial Differential Equations**

**Group  
A**

**Ordinary Differential  
Equations and Special Functions**

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# Group B

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**Subject : Mathematics**

**Post Graduate**

**Paper : PG (MT) 04 : Group A**

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PG (MT)-04  
Numerical Analysis,  
Computer Programming and  
its application to  
Numerical Analysis

## Group A

### Numerical Analysis

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**Subject : Mathematics**

**Post-Graduate**

**Paper : PG (MT) 05 : Groups A & B**

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**PG (MT) — 05  
Principles of Mechanics  
Elements of Continuum  
Mechanics and Special  
Theory of Relativity**

**Group**

**Δ**

**Principles of Mechanics**

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## Group

### B

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**P.G.**  
**(Mathematics)**  
**SYLLABUS**

**General Topology VI A (Marks : 50)**

**PGMT-II**

Topological spaces, Examples, Base for a Topology, Sub-subbase, Neighbourhood system of a point, Neighbourhood base, Limit point of a set, Closed sets, Closure of a set, Kuratowski closure operator; Interior and boundary of a set, Sub-space Topology, First and Second Countable spaces. Continuous function over a Topological space. Homeomorphism; Nets, Filters, Their convergence, Product space, Projection function, Open and Closed function, Quotient spaces.

Separation axioms  $T_0$ ,  $T_1$ ,  $T_2$ ,  $T_3$ ,  $T_4$  in Topological spaces, Product of  $T_2$ -spaces, Regular spaces, Normal spaces, Completely regular spaces, Tychonoff spaces, Urysohn's Lemma in Normal spaces, Tietze extension Theorem, Embedding in cube, Embedding Lemma, Urysohn's metrization Lemma.

Open cover, Sub-cover, Compactness, Countable open cover, Lindelöf space, Compact sets, Finite Intersection property, Tychonoff Theorem on product of compact spaces, Continuous image of a compact spaces, Locally compact spaces, One point compactification.

Connected spaces, Separated sets, Disconnection of a space, Union of connected sets, Closure of a connected set, Connected sets of reals, Continuous image of a connected space, Topological product of connected spaces, components, Totally disconnected spaces, Locally connected spaces.

Uniformity in a set, Base, Sub-base of a Uniformity, Uniform space, Uniform Topology,  $T_2$ -property of a Uniformity, Interior and closure of a set in terms of uniformity, Uniformly continuous function, Product Uniformity.



## **Group**

### **A**

#### **Differential Equations and Integral Transformation**

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## **Group**

### **B**

#### **Integral Equations**

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**Subject : Mathematics**

**Post Graduate**

**Paper : PG (MT) 08 : Group A**

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**PG (MT) – 08  
Differential Geometry  
(With the Use of  
Tensor Calculus),  
Graph Theory**

## **Group**

### **A**

## **Differential Geometry**

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## **Group**

### **B**

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