

MANOHAR MEMORIAL (P.G.) COLLEGE, FATEHABAD

Lesson Plan Format (17 weeks from January 2018 to April 2018)

Name of the Assistant/Associate Professor: Dr. Vijay Goyal

Department: Mathematics

Class and Section →	B.A.- I (E)	BA-II (D)	BA-II (D)	BA-III (C)
Subject	Number Theory & Trigonometry	Sequence and Series	Special Functions and Integral Transform	Dynamics
Week ...1..... Chapter 1: Prerequisites	Divisibility	Topology of Real Number	Power Series	Motion along a plane curve
Assignments	General Discussion	General Discussion	General Discussion	General Discussion
Week1 , day 1, Date 01.01.18	Introduction to syllabus	Introduction to syllabus	Introduction to syllabus	Introduction to syllabus
Week1 , day 2, Date 02.01.18	Principle of Mathematical induction	Sets	Power Series Convergence	Basic Definitions
Week1 , day 3, Date 03.01.18	Divisibility of Integers	Completeness	Radius of Convergence	System of Units
Week1 , day 1, Date 04.01.18	Theorem 1.4.1 to 1.4.7	Properties of Real numbers	Examples of Ex.1.1	Acceleration due to gravity
Week1 , day 1, Date 05.01.18	Examples of Ex. 1.1	Examples 1 to 5	Shifting of Summation	Practical Examples
Week1 , day 1, Date 06.01.18	G.C.D and LCM Of numbers	Exercise 1.1 problems	Exercise 1.1 problems	Expression for velocity, acceleration

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Subject	Number Theory & Trigonometry	Sequence and Series	Special Functions and Integral Transform	Dynamics
Week 2 Chapter 1: Prerequisites	Divisibility	Topology of Real Number	Power Series	Motion along a plane curve
Assignments	Revision	Revision	Revision	Revision
Week 2 Date 08.01.18	Example of Exercise 1.2	Neighborhood of a point	Analytic functions	Velocity and Acceleration along a plane curve
Week 2 Date 09.01.18	Problems of Exercise 1.2	Open sets and close sets	Ordinary and Singular Points	Components o velocity
Week 2 Date 10.01.18	Euclid's Theorem	Theorems	Examples	Examples
Week 2 Date 11.01.18	Fundamental Thermos of Arithmetic	Limit point	Problems of Ex.1.3	Angular velocity
Week 2 Date 12.01.18	Examples of Exercise 1.3	Examples of Exercise 1.2	Power Series Solutions	Radial and Transverse velocity
Week 2 Date 13.01.18	Problems of Exercise 1.3	Problems of 1.2	Examples of Ex.- 104	Tangential and normal velocities

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Week 3 Chapter 2: Prerequisites	Congruence	Topology of Real Numbers	Power Series	Relative Motion

Assignments	Revision of Chapter 1	Revision	Revision	Revision
Week 3 Date 15.01.18	Theorems on congruence's	Closure of a set	Examples of Ex. 1.5	Introduction and basic concepts
Week 2 Date 16.01.18	Examples of Exercise 2.1	Theorems on Closure	Problems of Ex 1.5	Expression for relative velocity
Week 3 Date 17.01.18	Linear congruence	Bolzano westerns Theorem	Frobenuis method	Examples 1 to 4
Week 3 Date 18.01.18	Exercise 2.1 problems	Examples 1to 6	Examples of Ex. 1.6	Examples 5to 8
Week 3 Date 19.01.18	Working rules for examples	Examples 7to 12	Problems of Exercise 1.6	Problems of exercise2.1
Week 3 Date 20.01.18	Diophantine Equations	Exercise 1.3	Revision of whole chapter	Problems continue

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Subject	Number Theory & Trigonometry	Sequence and Series	Special Functions and Integral Transform	Dynamics
Week 4 Chapter 2 : Prerequisites	Congruence	Sequences	Bessel's Equations	Simple harmonic motion
Assignments	Revision of Previous Chapter	Revision of Previous Chapter 1	Revision of Previous Chapter 1	Revision of Previous Chapter 1
Week 4 Date 22.01.18	Holiday			

Week 4 Date 23.01.18	Examples of Exercise 2.3	Convergence	Bessel's function	Examples 1 to 4
Week 4 Date 24.01.18	Holiday			
Week 4 Date 25.01.18	Previous year's question papers solve	Examples of Ex. 2.1	Trigonometric solutions	Question from exercise 1 to 6
Week 4 Date 26.01.18	Holiday			
Week 4 Date 27.01.18	Revision of chapter 2	Theorems 2.13.1 to 2.1.5	Problems of ex. 2.1	Questions from 15 to 24

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Subject	Number Theory & Trigonometry	Sequence and Series	Special Functions and Integral Transform	Dynamics
Week 5 Chapter 3 : Prerequisites	Fermat's wilson's CR theorems	Sequence	Bessel equation	Elastic strings
Assignments	Unit Test-I	Revision Chapter	Unit Test I	Power point presents
Week 5 Date 29.01.18	Fermat Theorems	Squeeze principle	Generating function	Hooke's law
Week 5 Date 30.01.18	Exercise 3.1 problems	Cauchy's theorems	Integral presentation of J_n	Theorems 4.2, 4.3
Week 5 Date 31.01.18	Holiday			

Week 5 Date 01.02.18	Exercise 3.2 problems	Examples 6 to 10	Reduction to Bessel equations	Examples one, two
Week 5 Date 02.02.18	CR Theorems & Examples	Exercise 2.2 problems	Solutions of Bessel equation	Examples three & four
Week 5 Date 03.02.18	Ex.-3.3	Monotonic sequence	Revision of Ch.2	Exercise questions 1 to 7

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Subject	Number Theory & Trigonometry	Sequence and Series	Special Functions and Integral Transform	Dynamics
Week 6 Chapter 4 continue : Prerequisites	Euler's function & residue systems	Sequence	Legendre's equations	Elastic strings
Assignments	PPT	Unit Test-1	PPT	Problem solving
Week 6 Date 05.02.18	Euler function	Theorems 2.18,2.19	Legendre's Equation	Power point presentations
Week 6 Date 06.02.18	Theorems 1to 5	Examples of ex.-2.3	Solution as power series	Power point presentations
Week 6 Date 07.02.18	Examples of 4.1	Problems of ex-2.3	Legendre's polynomials	Questions form 7 to 14
Week 6 Date 08.02.18	CRS and RRS	Limit points	Rodrigue formula	Group discussion

Week 6 Date 09.02.18	Examples of 4.2	Cauchy's sequence	Example of ex.-3.1	Revision of four chapter
Week 6 Date 10.02.18	Holiday			

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Subject	Number Theory & Trigonometry	Sequence and Series	Special Functions and Integral Transform	Dynamics
Week 7 Chapter 5 : Prerequisites	Some function of number theory	Infinite series	Legendre equations	Newton's law of motions
Assignments	PPT	Revision of Ch.2	PPT	Unit Test 1
Week 7 Date 12.02.18	Greatest integer function	Examples of 3.1	Examples of Ex. 3.2	Unit Test (Boys)
Week 7 Date 13.02.18	Holiday			
Week 7 Date 14.02.18	De polignac formula and examples	Geometric series	Integral solutions polynomials	Mass, force and weight
Week 7 Date 15.02.18	Divisor and sigma function	Comparison test	Problems of ex.-3.2	First, 2nd, third law of motions
Week 7 Date 16.02.18	Theorems of sigma functions	p. series Test	Problems of Ex.-3.3	Gravitational and absolute units
Week 7 Date 17.02.18	Examples of exercise 5.2	Examples of 3.2	Revision of chapters	Examples of Ex.- 5.1

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Subject	Number Theory & Trigonometry	Sequence and Series	Special Functions and Integral Transform	Dynamics
Week 8 Chapter 6: Prerequisites	Quadratic residue and reciprocity laws	Infinite series	Hermite's equations	Newton's laws of motions
Assignments	Group Discussion	Revision of Chapter 3	Unit test 2	Exercise problems
Week 8 Date 19.02.18	Quadratic congruence's	Ratio test	Hermit's equation	Examples of 5.2
Week 8 Date 20.02.18	Quadratic residue	Exercise 4.1 problems	Solution of Hermit's equation	Questions of ex. 5.2
Week 8 Date 21.02.18	Theorems	CAUCHY'S TEST	Hermit's polynomials	Examples of ex.-5.3
Week 8 Date 22.02.18	Euler's criterion	Examples of root Test	Generating functions	Question from 1 to 6 of 5.3
Week 8 Date 23.02.18	Theorems 5 to 7 and examples	Exercise 4.2	Rodrigue's formula	Question 7 to 14
Week 8 Date 24.02.18	Problems of ex. 6.1	Raabe's test	Another formula	Revision of chapter five

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Subject	Number Theory & Trigonometry	Sequence and Series	Special Functions and Integral Transform	Dynamics
Week 9 Chapter 7 : Prerequisites	De moivre's theorems	Infinite series (continue)	Hermit's equations	Work, power and energy

Assignments	Revision of chapter 1 to 6	Previous papers solve	Unit Test result discussion	Models formations
Week 9 Date 26.02.18	De moivre theorems	Examples of Raabe's test	Examples of ex.-4.1	Definitions of work, power, energy
Week 9 Date 27.02.18	Examples 1 to 5	Logarithm Test	Problem of ex.- 4.1	Article 6.4 and examples
Week 9 Date 28.02.18	University Holiday			
Week 9 Date 01.03.18	University Holiday			
Week 9 Date 02.03.18	University Holiday			
Week 9 Date 03.03.18	University Holiday			

Class and Section →	B.A.- I (E)	BA-II (D)	BA-II (D)	BA-III (C)
Subject	Number Theory & Trigonometry	Sequence and Series	Special Functions and Integral Transform	Dynamics
Week 10 Chapter 6: Prerequisites	Quadratic residue and reciprocity law	Infinite series (continued)	Laplace transforms	Work power, energy
Assignments	Group discussion	Previous years paper solve	Unit test-3	Models exhibitions
Week 10 Date 05.03.18	Properties of Legendre symbol	Guars test examples	Laplace introductions transform	Article 6.7, 6.8

Week 10 Date 06.03.18	Guars lemma	Problems of ex-4.4,4.5	Formula derivations	Article 6.9,6.10
Week 10 Date 07.03.18	Theorems 6.9,6.10	Cauchy's integral test	Shifting properties	Examples 1 to 4
Week 10 Date 08.03.18	Examples of exercise 6.2	Examples of ex.-4.6	Charge of scale property	Examples 5 onwards
Week 10 Date 09.03.18	Reciprocity law	Condensation test examples	Piece wise continuity	Problems of exercise 6.3
Week 10 Date 10.03.18	Examples and problems of 6.3	Problems of ex.-4.7	Shifting theorems	Impulse and impulsive forces

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Subject	Number Theory & Trigonometry	Sequence and Series	Special Functions and Integral Transform	Dynamics
Week 11 Chapter 8: Prerequisites	Circulars functions of a complex variable	Alternating series	Laplace transform	Motion of practical on smooth and rough curve
Assignments	Previous years question paper	PPT	PPT	Previous years question paper
Week 11 Date 12.03.18	Exponential Functions	Exercise 5.1 problems	LT of derivatives	Article 7.1 and examples
Week 11 Date 13.03.18	Examples of Ex 8.1	Problem solving continue	LT of integrals	Exercise 7.1 problems
Week 11 Date 14.03.18	Ex. 8.1 problems	Revision of chapter 4	LT of Bessel Functions	Article 7.2 and examples

Week 11 Date 15.03.18	Euler' s Theorem	Basic concepts of Chapter 6	Lt of Sine integral	Exercise 7.2 problems
Week 11 Date 16.03.18	Problems of Ex. 8.2	Definition of multiple series	Revision of CH. 6	Examples of 7.3
Week 11 Date 17.03.18	Revision of chapter	Examples of Ch. 5	Problems of Ch.6	Exercise 7.3 problems

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Subject	Number Theory & Trigonometry	Sequence and Series	Special Functions and Integral Transform	Dynamics
Week 12 Chapter 7 : Prerequisites	De Moivre Theorem	Alternating Series	Inverse Laplace Transforms	Chapter 6
Assignments	Power Point Presentation	Power Point Presentation	Power Point Presentation	Power Point Presentation
Week 12 Date 19.03.18	Examples 7.3	Definitions and concept	Formula derivation	Presentations
Week 12 Date 20.03.18	Examples of exercise 7.4	Leibnitz test	Partial fraction method	PPT of energy and work
Week 12 Date 21.03.18	Problem of exercise 7.3,7.4	Examples 1,2	L.T. Using shifting	PPT of motion along smooth curve
Week 12 Date 22.03.18	Formation of equation	Absolute convergence	Convolutation theorems	PPT OF Motion along a rough surface
Week 12 Date 23.03.18	Holiday			
Week 12 Date 24.03.18	Problems of exercise 7.5,7.6	Examples 3 to 8	Problems of whole chapter	Practical application of mechanics

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Subject	Number Theory & Trigonometry	Sequence and Series	Special Functions and Integral Transform	Dynamics
Week 13 Chapter 09 : Prerequisites	Hyperbolic functions	Arbitrary series	Solution of diff. equation by LT	Motion along smooth and rough surface
Assignments	Unit test-II	Unit Test-II	Previous year paper solve	Previous years question papers
Week 13 Date 26.03.18	Unit Test of chapter 5	Abel lemma	Working rules	Cycloidal motion
Week 13 Date 27.03.18	Hyperbolic functions	Abel's Test	Examples 1 to 10	Examples
Week 13 Date 28.03.18	Formulas derivations	Dirichlet's test	Linear diff. Equations	Theoretical articles
Week 13 Date 29.03.18	Holiday			
Week 13 Date 30.03.18	Examples of ex. 9.1	Examples of 6.1	Examples of Ex. 8.2	Examples of 7.5, 7.6
Week 13 Date 31.03.18	Problems discussion	Problems of Ex. 6.1	Problems discussion	Problems discussion

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Subject	Number Theory & Trigonometry	Sequence and Series	Special Functions and Integral Transform	Dynamics
Week 14 Chapter 10 : Prerequisites	Logarithm of Complex Number	Arbitrary Series	Solution of Differential Eq. using LT	Projectiles
Assignments	Revision	Unit test Report Discussion	Revision of ch. 7	Unit test 2

Week 14 Date 02.04.18	Logarithm Theorems	Removal of Paranthesis	Problems of Ex. 8.2	Motion of a projectile
Week 14 Date 03.04.18	Examples	Examples	Examples	Article 8.4 and examples
Week 14 Date 04.04.18	Problems of Ex. 10.1	Rearrangement Theorem	Problems Discussion	Examples of exercise 8.1
Week 14 Date 05.04.18	Problems of Ex. 10.1 continue	Examples of ex. 6.1	Revision of chapter	Range and time of flight
Week 14 Date 06.04.18	General Exponential function	Problems discuss	Revision continue	Vertical Height
Week 14 Date 07.04.18	Examples of Ex. 10.2	Cauchy Product	Revision continue	Problems of ex. 8.1,8.2
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Subject	Number Theory & Trigonometry	Sequence and Series	Special Functions and Integral Transform	Dynamics
Week 15 Chapter 11 : Prerequisites	Inverse Tri. Functions	Arbitrary Series	Fourier Transforms	Central Orbits
Assignments	Previous Year Question paper solve	Previous Year Question paper solve	Previous Year Question paper solve	Previous Year Question paper solve
Week 15 Date 09.04.18	Examples of Inverse Tri.	Cauchy Problem	Infinite Fourier Transform	Areal Velocity
Week 15 Date 10.04.18	Problems Discuss	Martin's Theorem	Fourier sine and cosine transform	Parabolic path velocity in circle

Week 15 Date 11.04.18	Article 11.10	Casero's theorem	Property of FT	Article 9.9,9.10
Week 15 Date 12.04.18	Examples of 11.3	Abel's theorem	Convolution theorems	Problems of chapter 9.1
Week 15 Date 13.04.18	Problems ex.-11.3	Examples 4 to 6	Example of Ex.9.1	Apsidal distance
Week 15 Date 14.04.18	Holiday			

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Subject	Number Theory & Trigonometry	Sequence and Series	Special Functions and Integral Transform	Dynamics
Week 16 Chapter 11 : Prerequisites	Inverse trigonometry	Arbitrary series	Fourier transforms	Projectiles
Assignments	PPT of Ch. 10	Project work	Revision of ch.-8	Problems discussion
Week 16 Date 16.04.18	General value and principle value	Problems of ex.-6.3	Relation between FT & LT	Exercise 8.3 problems
Week 16 Date 17.04.18	Formula's derivation	Problems of ex.-6.4	FT Of derivatives	Article 8.8 and 8.9
Week 16 Date 18.04.18	Holiday			
Week 16 Date 19.04.18	Problems of 11.1	Model formation of series	Examples of Ex.-9.2	Examples of Ex.-8.4
Week 16 Date 20.04.18	Inverse hyperbolic function	Revision of ch.-6	Examples of Ex.-9.3	Problems of exercise 8.4

Week 16 Date 21.04.18	Formulas hyperbolic function	Revision of ch.-6	Problems of 9.3 and 9.4	Revision of chapter
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Subject	Number Theory & Trigonometry	Sequence and Series	Special Functions and Integral Transform	Dynamics
Week 17 Chapter 12 : Prerequisites	Summation of series	Infinite product	Applications of FT	Kepler 's laws
Assignments	Revision of chapter 9,10,11	Model formation	Revision	Assignment/project work
Week 17 Date 23.04.18	Article 12.1.1,1.2	Infinite product	Examples of Ex.-10.1	Examples of Exercise 9.1
Week 17 Date 24.04.18	Examples of ex.-12.1	Convergence	Problem of ex.-10.1	Articles 9.1,9.3,9.5,9.7,9.8
Week 17 Date 25.04.18	Problems of Ex.-12.1	Examples of Ex.7.1	Revision of ch.-1,2	Problems of Ex.-9.1
Week 17 Date 26.04.18	Method of difference	Problems of Ex.-7.1	Revision of ch.-3,4	Article 10.1
Week 17 Date 27.04.18	Examples of ex.-12.2	General principle of convergence	Revision of ch.-5,6,8	Examples of Ex. 10.1
Week 17 Date 28.04.18	Problems of Ex.12.2	Theorem 7.7,7.8	Revision of ch.-9,10	Problems of Ex.-10.1