

New College

DYNAMICS

B.A. / B.Sc. III

JEEVANSONS PUBLICATIONS

SYLLABUS

Maharishi Dayanand University, Rohtak

B.A./B. Sc. 3rd Year

FIFTH SEMESTER

DYNAMICS : (BSM - 353)

Time Allowed : 3 hours

Maximum Marks { B.Sc. : 40
B.A. : 20

Note. The question paper will consist of **five** sections. Each of the first four sections will contain two questions and the students shall be asked to attempt one question from each section. **Section-V** will contain **six** short answer type questions without any internal choice covering the entire syllabus and shall be **compulsory**.

Section - I

Velocity and acceleration along radial, transverse, tangential and normal directions. Relative velocity and acceleration. Simple harmonic motion. Elastic strings.

Section - II

Mass, Momentum and Force. Newton's laws of motion. Work, Power and Energy. Definitions of Conservative forces and Impulsive forces.

Section - III

Motion on smooth and rough plane curves. Projectile motion of a particle in a plane. Vector angular velocity.

Section - IV

General motion of a rigid body : Central Orbits, Kepler's laws of motion. Motion of a particle in three dimensions. Acceleration in terms of different co-ordinate systems.

SYLLABUS

K.U., Kurukshetra and C.D.L.U., Sirsa

B.A. / B. Sc. 3rd Year

SIXTH SEMESTER

DYNAMICS : (BM - 363)

Time Allowed : 3 hours

Maximum Marks { B.Sc. : 40
B.A. : 27

Note. *The examiner is requested to set **nine questions** in all, selecting two questions from each section and **one compulsory question** consisting of five or six parts distributed over all the four sections. Candidates are required to attempt **five questions in all**, selecting **at least one question** from each section and the compulsory question.*

Section - I

Velocity and acceleration along radial, transverse, tangential and normal directions. Relative velocity and acceleration. Simple harmonic motion. Elastic strings.

Section - II

Mass, Momentum and Force. Newton's laws of motion. Work, Power and Energy. Definitions of Conservative forces and Impulsive forces.

Section - III

Motion on smooth and rough plane curves. Projectile motion of a particle in a plane. Vector angular velocity.

Section - IV

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CONTENTS

Chapter	Pages
Preliminaries	(i) - (vi)
1. Motion Along a Plane Curve	1.1 - 1.40
2. Relative Motion	2.1 - 2.14
3. Simple Harmonic Motion	3.1 - 3.14
4. Elastic Strings	4.1 - 4.12
5. Newton's Laws of Motion	5.1 - 5.30
6. Work, Power and Energy	6.1 - 6.32
7. Motion of a Particle on Smooth and Rough Plane Curves	7.1 - 7.50
8. Projectiles	8.1 - 8.40
9. Central Orbits	9.1 - 9.44
10. Kepler's Laws of Planetary Motion	10.1 - 10.14
11. Motion of a Particle in Three Dimension	11.1 - 11.18
• Short Answer Questions	(i) - (vi)
• Question Papers	(vii) - (xiii)

Unit 1

Chapter 3

Unit 2

Unit 3

Unit 4

