

# M. Sc. EXAMINATION SEMESTER SYSTEM

## PHYSICS

(SESSION: 2016 – 2017)

The course will be divided in two parts. Each part shall be of two Semesters; each consisting of four theory papers and each paper of forty periods teaching load. The examination of each theory paper shall be of 50 marks. In each Semester there will be 240 periods of Practical course and the examination of practical shall be of 100 marks. The pass marks in theory and practical examinations will be 36% of the aggregate separately. The details of the courses are given below.

### M.Sc. I THEORY

#### Semester I

Paper I; Course I	Mathematical Physics	50 marks
Paper II; Course II	Classical Mechanics	50 marks
Paper III; Course III	Quantum Mechanics – I	50 marks
Paper IV; Course IV	Electronics	50 marks

#### Semester II

Paper I; Course V	Thermodynamics and Statistical Physics	50 marks
Paper II; Course VI	Electromagnetic Theory and Plasma Physics	50 marks
Paper III; Course VII	Group Theory and Molecular Spectra	50 marks
Paper IV; Course VIII	Solid State Physics	50 marks

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### PRACTICALS

A candidate will be required to perform at least five experiments in each Semester from either of the courses A and B detailed at the end of the M. Sc. I course and have to present a seminar on a topic related to experiments done in respective Lab courses. In the examination the candidate has to do one experiment from the choosen group. Time allotted for performing the experiment shall be four hours . The distribution of marks shall be as follows:

	Regular Candidate	Ex- Candidate
Experiment	40	40
Record	25	---
Viva	20	45
Seminar/Project work	15	15
Total	100	100

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**M. Sc. II**  
(SESSION 2017-2018)

In each semester the first three papers shall be compulsory and the fourth one i.e. Courses XII and XVI will be optional; selected from the same group. A particular optional group will run depending on the availability of staff and requisite number of students. The number of seats available in any group for any year will be decided depending on various logistics at the local level. There shall be a practical course for each optional group. The pass marks in theory and practical examinations will be 36% of the aggregate separately. The details of the courses are given below.

**THEORY**

**Semester III**

Paper I; Course IX	Numerical Methods and Programming	50 marks
Paper II; Course X	Electrodynamics	50 marks
Paper III; Course XI	Quantum Mechanics – II	50 marks
Paper IV; Course XII	Optional Papers (a/b/c/d/e/f)	50 marks

**Semester IV**

Paper I; Course XIII	Nuclear and Particle Physics	50 marks
Paper II; Course XIV	Lasers and Modern Optics	50 marks
Paper III; Course XV	Condensed Matter Physics	50 marks
Paper IV; Course XVI	Optional Papers (a/b/c/d/e/f)	50 marks

**OPTIONAL THEORY PAPERS :** (Two papers, each of 50 marks)

Group (a)	Astrophysics:	Course XII (a) & XVI (a)
Group (b)	Biophysics:	Course XII (b) & XVI (b)
Group (c)	Electronics:	Course XII (c) & XVI (c)
Group (d)	Solid State Physics:	Course XII (d) & XVI (d)
Group (e)	Spectroscopy and Lasers:	Course XII (e) & XVI (e)
Group (f)	X-rays:	Course XII (f) & XVI (f)

**PRACTICALS**

A candidate will be required to perform at least five experiments in each Semester from either of the courses C and D detailed at the end of the M. Sc. II course and has to present a seminar on a topic related to experiments done in respective Lab courses. In the examination the candidate has to do one experiment from the chosen group. Time allotted for performing the experiment shall be four hours. The distribution of marks shall be as follows:

	Regular Candidate	Ex- Candidate
Experiment	40	40
Record	25	---
Viva	20	45
<u>Seminar/Project work</u>	<u>15</u>	<u>15</u>
<u>Total</u>	<u>100</u>	<u>100</u>