

## 41. Space Science

### B.Sc. Space Science-II

Total Mark: 100

#### Appendix 'A'

##### (Outlines of Tests)

Paper-A:	Atmospheric Physics and Space Science (Written):	75 Marks
Paper-B:	Practical :	25 Marks

#### Appendix 'B'

##### (Syllabi and Courses of Reading)

**Paper-A: Atmospheric Physics and Space Science 75 Marks**

### I. Atmospheric Science

#### i Physical properties of the Atmosphere

Composition of dry air; pressure, density and temperature, water vapour; heat transfer by radiation processes and convection; lapse rate, isothermal layer ; the Tephigram.

#### ii Condensation and Precipitation

Microphysical processes; large scale processes, cloud classification.

### II Space Science

#### i. Ionosphere:

Ionospheric Region and Parameters; Solar Cycle and Sunspot Activity; Ionospheric Anomalies. The Transmitting Aerial and Radio Wave Propagation Radiations.

#### ii. Remote Sensing

Introduction and Principles of Remote Sensing Physics; Aerial and Satellite Remote Sensing; Application of Remote Sensing Technology; Interpretation Methods.

#### iii. Space Exploration

Principle of Rocket; Fuel for Rocket Propulsion; Single and multistage Rocket; Launching and Orbits of Satellites; Up-to-date Survey of Space Communication; Meteorological, Navigation, Scientific and Earth Resources Satellites; Space probes.

#### Recommended Books:

1. Introduction to atmosphere by H. Riehl (1945).
2. Radio Wave Propagation (11F Band) G. F. EC. Judd.

3. Principles of Remote Sensing by P. I. Curran (1984).
4. Satellite Remote Sensing: An Introduction by Ray Harris (1987).

**Paper-B: Practical**

**25 Marks**

Determination of time latitude, longitude and azimuth by different methods. Use of instruments for meteorological observations; Study and interpretation of daily weather maps; Identification of various cloud forms, Study and interpretation of satellite pictures.

**Note:**

Each student will have to perform two experiments each of 20 marks during 5 hours. The question paper will consist of the following two sections each containing three experiments from the above course. Each student will have to mark at least two questions from each section and the examiner will allot one question from each section.

Section I: Use of Instruments.

Section II: Manual studies and computation and analysis of data.

**Recommended Books:**

1. Foundation of Astronomy by W.M. Smart.
2. Introduction to Astronomy by W.M. Smart.
3. Earth and Space Science by Wolfe, Flemming, Battern and others.
4. Your guide to the weather by George L. Cantzlaar.
5. Remote Sensing by Philip N. Slater.
6. The Upper Atmosphere and solar Terrestrial Relations by J. K.