



M.Sc. IV Semester Degree Examination, Sept./Oct. - 2024

PHYSICS

Astrophysics

(NEP)

Time : 3 Hours

Maximum Marks : 70

Note : Answer **any five** of the following questions with **Question No.1** is **(Q1) Compulsory**, each question carries **equal** marks.

1. (a) What are the coordinate systems used for observing celestial bodies ? Give a brief account of them. **5**
- (b) With a neat schematic diagram, explain the working of Michelson's stellar interferometer. **9**
2. (a) Discuss the features observed in the spectrum of stars. **3**
- (b) Give detailed account of the spectral and luminosity classification of stars with examples. **11**
3. (a) Provide an overview of the physical and astronomical characteristics of Sun. **7**
- (b) Describe the internal structure of Sun with a neat schematic diagram. **7**
4. (a) What are star clusters ? Distinguish between open and globular clusters. Give example for each type. **7**
- (b) What are the physical characteristics of galaxies ? Discuss Hubble's scheme of classification of galaxies with examples. **7**
5. (a) Discuss the types and mounts of optical telescopes with schematic diagrams. **7**
- (b) Explain the working of IR telescopes. **7**
6. (a) Give an account of basic stellar structure equations. **7**
- (b) What are Sun spots ? Discuss their characteristics. **7**



- 7.** (a) Explain the prediction and detection of Cosmic microwave background radiation. **7**
- (b) Explain the construction of CCD used in astronomical observations. **7**
- 8.** (a) State and explain Saha's ionisation formula. Discuss its application to Sun's spectrum. **5**
- (b) Distinguish between the physical characteristics of Photosphere and chromosphere. **4**
- (c) Explain the big bang origin of the Universe. **5**

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