2103000205030064
EXAMINATION OCTOBER 2024
BACHELOR OF SCIENCE (FIFTH SEMESTER)
ASTROPHYSICS-I-LEVEL-3

[Time: As Per Schedule] **[Max. Marks: 50]**

Instructions:
1. Fill up strictly the following details on your answer book
   a. Name of the Examination : **BACHELOR OF SCIENCE (FIFTH SEMESTER)**
   b. Name of the Subject : **ASTROPHYSICS-I LEVEL-3**
   c. Subject Code No : **2103000205030064**
2. Sketch neat and labelled diagram wherever necessary.
3. Figures to the right indicate full marks of the question.
4. All questions are compulsory.
5. Symbols used in the paper have their usual meaning.
6. Scientific calculator may be used.

Seat No:

Student's Signature

Q.1 Answer all the following questions in brief: **10**

1. What is Coude focus?
2. What is f-ratio?
3. Define Pixel.
4. What is HST? When it was launched?
5. Which star is the brightest star in the night sky?
6. What are Fraunhofer's lines?
7. State the name of Indian origine scientist made remarkable contribution to the field of Astrophysics.
8. Define eclipsing binary of stars.
9. What are spectrum binaries?
10. State the different types of binary stars on the basis of closeness and mutual orientations as seen by the observer on Earth.

Q.2 (A) Answer any one the following questions in detail. **6**

1) Discuss the magnifying power, brightness of an image, resolving power and f/a ratio for an optical telescope.
2) Write a short note on radio telescope.

(B) Answer any one the following questions in brief. **4**

1) Describe the advantage of reflector over refractor telescopes.
2) Explain the reason of using the short waves for radio transmission at far-off places?

Q.3 (A) Answer any one the following questions in detail. **6**

1) Discuss the Steller magnitude sequence in detail.
2) Write a short note on absolute magnitude and distance module.

(B) Answer any one the following questions in brief. **4**

1) Write a short note on radiometric magnitude in detail.
2) Discuss the luminosity of stars and derive the relationship between total luminosity and the effective temperature of Star.

Q.4 (A) Answer any one the following questions in detail. **6**

1) Write a short note on Solar Wind.
2) What are Prominences? Describe different types of Prominences in detail.

4

(B) Answer any one the following questions in brief.

1) Explain Outer corona or F - corona.
2) Draw a schematic description of the interior and outer layers of the Sun, together with some atmospheric phenomena.

Q.5 (A) Answer any one the following questions in detail. **6**

1) Discuss the mass transfer in close binary system in detail.
2) Explain the light variation curve for eclipsing binary.

(B) Answer any one the following questions in brief. **4**

1) Write a short note on Multiple stars.
2) Explain the origine of binary stars in brief.

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