

(6 pages)

Reg. No. :

Code No. : 20359 E Sub. Code : ESPH 21

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2025.

Second Semester

Physics

Skill Enhancement Course — ASTROPHYSICS

(For those who joined in July 2023 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Magnification of astronomical telescope is
- (a) $f_o + f_e$ (b) f_o/f_e
- (c) f_e/f_o (d) $\left(1 + \frac{f_o}{f_e}\right)L$

2. Radio telescope is used to see
- (a) Stars and to measure diameters
- (b) Distance stars and planets
- (c) High frequency waves
- (d) Sun and to measure its temperature
3. Bode's law is associated with distance between
- (a) two planets (b) sun and planets
- (c) earth and moon (d) two stars
4. Main body of a space comet is called
- (a) outer mantle (b) mantle
- (c) nucleus (d) core
5. When the same pattern of solar eclipse repeats every 18 year 11 days 8 hours are known as
- (a) Nodes cycle (b) Saros cycle
- (c) Saras cycle (d) Payan cycle
6. When revolving around the sun, the earth moves in an elliptical cycle
- (a) on the sun's plane
- (b) above the sun's plane
- (c) below the sun's plane
- (d) above and below the sun's plane

7. The white dwarf collapse into
- (a) neutron star (b) proton star
(c) comet star (d) asteroids
8. More than two third of all observed galaxies are
- (a) Barred spiral (b) Irregular
(c) Spiral galaxies (d) Elliptical
9. The brightness of a star which can be seen from earth is called
- (a) absolute magnitude
(b) apparent magnitude
(c) light year
(d) parallax
10. Elliptical galaxies possess center which is
- (a) bulged (b) bright
(c) denser (d) dull

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Define :
- (i) Resolving power
(ii) Focal length of a telescope
- Or
- (b) What are the advantages of using Radiotelescope?
12. (a) What is Bode's law? What is the universal law of gravitation?
- Or
- (b) Describe the detection of gravitational waves.
13. (a) Write a note solar eclipse.
- Or
- (b) Explain photospheric phenomenon on the sun.
14. (a) Write a note Chandrashekar limit.
- Or
- (b) What is black hole? Whether sun can form black hole? Explain with reasons.

15. (a) Write note :
(i) Pulsars
(ii) Neutron stars.

Or

- (b) Discuss briefly about galaxy clusters.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain the types of reflecting telescopes.

Or

- (b) Explain Hubble space telescope.

17. (a) Explain Bode's law of planetary distances.

Or

- (b) Describe Kuiper belt and Oort cloud location in orbits.

18. (a) Explain the various types of Eclipses in detail.

Or

- (b) Discuss briefly about solar corona.

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19. (a) How death of star occurs? Explain in detail.

Or

- (b) Explain the supernova explosion and formation of neutron.

20. (a) Explain :

(i) White dwarfs

(ii) Black holes.

Or

- (b) Explain the classification of galaxies.
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