

(6 pages)

Reg. No. :

Code No. : 30751 E Sub. Code : ESPH 21

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2024

Second Semester

Physics

Skill Enhancement Course — ASTROPHYSICS

(For those who joined in July 2023 onwards)

Time : Three hours

Maximum : 75 marks

PART A — ($10 \times 1 = 10$ marks)

Answer ALL questions.

Choose the correct answer.

1. To increase the magnifying power of a telescope
 - (a) The focal length of the objective should be increased
 - (b) The focal length of the eye piece should be increased
 - (c) The wave length of the light should be increased
 - (d) The operture of the eyepiece should be increase

2. The brightness of the image of an object depends on
 - (a) Resolving power
 - (b) Aperture of the objective
 - (c) Lens power
 - (d) Magnifying power
3. The stony meteorite is composed of
 - (a) rocky material (b) iron
 - (c) nickel (d) all of them
4. The asteroid Belt is situated between which planets
 - (a) Mars and Jupiter
 - (b) Jupiter and Neptune
 - (c) Neptune and Mars
 - (d) Mars and Venus
5. Which of the following planet is called Red Planet?
 - (a) Jupiter (b) Neptune
 - (c) Mars (d) All

6. The cross section of the objects involved in an astronomical eclipse is _____ shaped.
- (a) Star (b) Rectangular
(c) Pentagon (d) Disk
7. The nearest atmospheric layer to the earth's surface is
- (a) Stratosphere (b) Thermosphere
(c) Troposphere (d) All
8. How can astronomers detect black holes?
- (a) By their bright emission of visible light
(b) By their emission of radio waves
(c) By their gravitational effects on nearby objects
(d) By their reflection of sunlight
9. What does the escape velocity of a black hole equal?
- (a) The speed of light
(b) The speed of sound
(c) The speed of a rocket
(d) The speed of a bullet

10. The light from most distant galaxies
- (a) shifted towards the red end of the spectrum
(b) shifted towards the blue end of the spectrum
(c) always Ultraviolet
(d) always Infra red

PART B — (5 × 5 = 25 marks)

Answer ALL questions by choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) What are Radio Telescopes?
Or
(b) How can you calculate the magnifying power of telescope?
12. (a) Explain asteroids.
Or
(b) Explain Oort Cloud.
13. (a) Where is Kuiper Belt located and explain.
Or
(b) Explain solar eclipse.

14. (a) What is Sunspots? Explain.

Or

(b) What are five interesting facts about the Sun?

15. (a) What does the H.R. diagram explain?

Or

(b) What are the interaction of a galaxy system?

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 different type of reflecting telescope.

Or

(b) Explain the working of Hubble Space Telescope in details.

17. (a) How was gravitational waves detected?

Or

(b) How do you calculate Planetary distances by using Bodes law?

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18. (a) Describe about total and partial Lunar eclipse.

Or

(b) Write down the features of the Photosphere.

19. (a) Describe 11 years Solar Cycle.

Or

(b) Describe birth of low mass and intermediate massive stars.

20. (a) Describe neutron stars.

Or

(b) Describe discovery, distribution and facts of dark matter.

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