

Reg. No. :

Code No. : 10445 E Sub. Code : CNPH 42

U.G. (CBCS) DEGREE EXAMINATION, APRIL 2023.

Fourth Semester

Physics

Non Major Elective – SPACE PHYSICS

(For those who joined in July 2021 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Motion of the earth on its axis in about 24 hours is called
 - (a) revolution
 - (b) rotation
 - (c) both (a) and (b)
 - (d) none of these

2. What is the name of the magnetic radiation belt that envelopes the earth in the shape of a doughnut?
 - (a) Aurora Borealis
 - (b) Kuiper Belt
 - (c) Van Allen Belt
 - (d) Asteroid Strip

3. Major asteroid impacts on the planets
 (a) Have never occurred in our Solar System
 (b) Take place only on Jupiter and Saturn
 (c) Were once common place in the Solar System
 (d) Produce new comets
4. A large body in space made of rock, ice, and frozen gas
 (a) Meteoroid (b) Asteroid
 (c) Comet (d) Moon
5. Which of the following planet has largest number natural satellite?
 (a) Jupiter (b) Saturn
 (c) Uranus (d) Neptune
6. The moon moves around the earth how many days
 (a) 27 days (b) 30 days
 (c) 21 days (d) 14 days
7. Which star is nearest to the earth?
 (a) sun (b) orion
 (c) pole star (d) moon
8. More than two-thirds of all observed galaxies are _____
 (a) Barred spiral (b) Irregular
 (c) Spiral galaxies (d) Elliptical

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9. Which one of the following theories explains the origin of the Universes?
 (a) Tidal (b) Nebula
 (c) Big Bang (d) Planetes
10. The universe alternately contracts and expands. This is according to
 (a) heliocentric theory
 (b) big bang theory
 (c) steady state theory
 (d) pulsating theory

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Explain about the different layers of earth.
 Or
 (b) Justify the importance of rotation of earth.
12. (a) Illustrate the characteristics of comets.
 Or
 (b) List out the uses of meteors.
13. (a) Annotate the structure of sunspot.
 Or
 (b) Comment on solar plages.
14. (a) Explain the different types of binary star with example.
 Or
 (b) Summarize the star cluster in detail.

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15. (a) Discriminate the importance of pulsating theory.

Or

- (b) Integrate the composition of universe.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Classify the types of planets.

Or

- (b) Describe about the Van Allen belt.

17. (a) Discuss the salient features of asteroids.

Or

- (b) Analyze the periodic comets.

18. (a) Explain the atmosphere of a sun.

Or

- (b) Distinguish between photosphere and chromosphere.

19. (a) Explain the differences between star clusters and galaxies.

Or

- (b) Categorize the types of galaxies.

20. (a) Facilitate the big bang theory.

Or

- (b) Validate the steady state theory.