KAMARAJ COLLEGE (Autonomous)

Accredited with A+ Grade by NAAC

(Affiliated to ManonmaniamSundaranar University, Tirunelveli)

(3 Pages) **Reg. No:……**

Question Code: 26E01205 **Course Code: 24USPH21/25USPH21**

UG Degree - End Semester Examinations, April 2026

Second Semester

B.Sc., PHYSICS

Astrophysics

(For those who joined in July 2024 and June 2025 onwards)

Time : 3Hours **Maximum : 75 Marks**

PART – A (10 × 1 = 10 Marks)

Answer ALL Questions

Choose the correct answer :

CO:1 K:3 1. _____ telescope uses a concave mirror to collect light.

(a) Refracting (b) Reflecting

(c) Compound microscope (d) Galilean

CO:1 K:2 2. Objective lens of an astronomical telescope has

(a) Short focal length (b) Small aperture

(c) Large focal length (d) None of these

CO:2 K:2 3. Which law suggested that there should be a planet between Mars and Jupiter?

(a) Bode's law (b) Planetary law

(c) Celestial law (d) None of these

CO:2 K:2 4. Most asteroids are shaped like?

(a) Bananas (b) Starfish

(c) Lumpy Potatos (d) None of these

CO:3 K: 5. Which type of solar eclipse occurs when the moon completely covers the sun?

(a) Partial solar eclipse (b) Annular solar eclipse

(c) Total solar eclipse (d) Penumbral eclipse

CO:3 K:3 6. The energy of the sun is produced by

(a) Chemical reaction (b) Burning gases

(c) Nuclear fusion (d) Nuclear fission

CO:4 K:3 7. A star is formed from a large cloud of gas and dust called a

(a) Asteroid belt (b) Nebula

(c) Comet tail (d) Meteor shawer

CO:4 K:3 8. A massive star may end its life as a

(a) White dwarf (b) Planet

(c) Black hole (d) Comet

CO:5 K:3 9. The milky way contains a large central bulge made up mostly of

(a) Young star (b) Old red star

(c) Remnant of supernova (d) Dust and gas

CO:5 K:3 10. After exhausting hydrogen in its core a low-mass star becomes a

(a) Neutron star (b) Black hole

(c) Red giant (d) Supernova

PART – B (5 X 5 = 25 Marks)

Answer ALL Questions choosing either (a) or (b).

Answer should not exceed 250 words.

CO:1 K:3 11. (a) Explain the principle of optical telescope with neat diagram

(OR)

(b) Describe about the image processing in the telescope.

CO:2 K:3 12. (a) State and explain Bode's law. What are the uses of Bode's law?

(OR)

(b) Distinguish between comets and asteroids.

CO:3 K: 13. (a) Discuss about various types of eclipse.

(OR)

(b) Explain about solar corona.

CO:4 K:3 14. (a) Explain the application of the Chandrasekhar limit in detail.

(OR)

(b) Write short notes on supernova.

CO:5 K:2 15. (a) Elucidate the classification of galaxies.

(OR)

(b) Write your experience about the preparation of the eclips model.

PART – C (5 X 8 = 40 Marks)

Answer ALL Questions choosing either (a) or (b).

Answer should not exceed 500 words.

CO:1 K:2 16. (a) Explain the principle and working of reflecting and refraction telescopes with the diagram.

(OR)

(b) Describe the principle and working of Hubble space telescope.

CO:2 K:3 17. (a) Explain the concept of the following: i) Kuiper belt ii) Oort cloud

(OR)

(b) Describe clearly about the recent developments in Astro physics.

CO:3 K:2 18. (a) Explain about physical and orbital data of sun.

(OR)

(b) With neat diagram, explain about 11 year solar cycle.

CO:4 K:3 19. (a) Describe about birth and death of low mass, intermediate and massive stars.

(OR)

(b) Explain the following: i) neutron star ii) pulsors

CO:5 K:3 20. (a) Explain the big bang theory of Universe.

(OR)

(b) Explain the experience of your night sky observation.