24000625

QP CODE: 24000625

Reg No : .....

Name : .....

B.Sc DEGREE (CBCS) REGULAR / REAPPEARANCE EXAMINATIONS, MARCH 2024

Sixth Semester

CHOICE BASED CORE COURSE - PH6CBT05 - ASTRONOMY & ASTROPHYSICS

Common for B.Sc Physics Model I, B.Sc Physics Model II Applied Electronics, B.Sc Physics Model II Computer Applications & B.Sc Physics Model III Electronic Equipment Maintenance

2017 Admission Onwards

F804B1C4

Time: 3 Hours Max. Marks : 80

Part A

*Answer any **ten** questions.*

*Each question carries **2** marks.*

1. Venus is about 104 times brighter than the dimmest visible star. If the magnitude of the dimmest visible star is +6, what is the magnitude of Venus?
2. What is the function of objective lens of a telescope?
3. What determines the size of the image formed by a telescope?
4. Why does the star Polaris appear still in celestial sphere?
5. Define solar day.
6. Write a short note on chromosphere of the Sun.
7. What do you mean by Local Group of galaxies?
8. What are the properties of main sequence stars?
9. What is a red giant?
10. Why a Black hole is called so?
11. Which are the colour indices of stars?
12. What is an isotropic universe?

(10×2=20)

Part B

*Answer any **six** questions.*

*Each question carries **5** marks.*

13. Write a brief description about (a) Radio astronomy and (b) X-ray astronomy.

14. At the surface of the Sun the intensity of the solar radiation is about 6.33×10^7 W/m^2 . Estimate the surface temperature of Sun.

15. Distinguish between Summer solstice and winter solstice.

16. Explain the concept of Jeans mass and derive an expression for it.

17. Describe the late stages of evolution of a massive star.

18. Draw the Hertzsprung Russel diagram.

19. Discuss the standard big-bang theory for the origin of universe.

20. Estimate the age of the universe if Hubble's constant is 70km/s/Mpc.

21. What is dark energy?

(6×5=30)

Part C

*Answer any **two** questions.*

*Each question carries **15** marks.*

22. Describe various astronomical distance sales. Explain the method of parallax to find distance to nearby stars.

23. Describe the equatorial and ecliptic coordinate systems of the Celestial sphere.

24. Define the term Galaxy. Describe the Hubble’s classification of galaxies.

25. State and explain Hubble’s law of expansion of the universe and the concept of cosmological redshift.

(2×15=30)