



QP CODE: 25020383

Reg No : ......

# B.Sc DEGREE (CBCS) REGULAR / REAPPEARANCE / MERCY CHANCE EXAMINATIONS, FEBRUARY 2025

## 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

# 5FA5BA14

Time: 3 Hours Max. Marks: 80

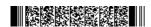
#### Part A

Answer any ten questions.

Each question carries 2 marks.

- 1. What is the importance of X-ray astronomy?
- 2. The Cosmic Microwave Background radiation (CMB) fills the universe. If temperature of the space is 2.7 K then CMB attains intensity maxima at a wavelength?
- 3. What is the focal length of a 6-inch f/8 reflector telescope?
- 4. What are cardinal points in astronomy?
- 5. When it is summer in the northern hemisphere, it is winter in the southern hemisphere. Why?
- 6. Define solar day.
- 7. Distinguish between solar flares and prominence.
- 8. What is Jeans mass?
- g. Why a Black hole is called so?
- 10. What is the basic idea of cosmological principle?
- 11 What is meant by Big Bang nucleosynthesis?
- 12 State Hubble's law.

 $(10 \times 2 = 20)$ 



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#### Part B

## Answer any six questions.

## Each question carries 5 marks.

- 13. Describe various astronomical distance scales
- 14. Describbe the Pogson's Magnitude scale to classify stars based on brightness.
- 15. Discuss the properties of Solar corona.
- 16. Briefly explain the formation of a protostar.
- 17. Discuss the characteristic properties of White Dwarfs.
- 18. Briefly discuss the spectral classification of stars.
- 19. Draw the Hertzsprung Russel diagram.
- 20. How can we estimate the expansion rate of the universe?
- 21. Can we observe the darkmatter? Justify your answer.

 $(6 \times 5 = 30)$ 

#### Part C

Answer any two questions.

Each question carries 15 marks.

- What are the uses of optical telescopes? Describe Refracting and Reflecting telescopes.
- 23. Describe various systems of coordinates that are used to specify the position of objects in the sky?
- Define the term Galaxy. Describe the Hubble's classification of galaxies.
- 25. Describe in detail about nucleosynthesis and energy production in stars.

 $(2 \times 15 = 30)$ 

