

QP CODE: 23800349



Reg No :
Name :

INTEGRATED PG DEGREE EXAMINATION, DECEMBER 2023

Third Semester

INTEGRATED MSC BASIC SCIENCE-PHYSICS

CORE - IPH3CR03 - ASTRONOMY & ASTROPHYSICS

2020 ADMISSION ONWARDS

551BA50D

Time: 3 Hours

Weightage: 30

Part A (Short Answer Questions)

Answer any **eight** questions.

Weight 1 each.

1. Distinguish between sidereal calendar and solar calendar.
2. Define a parsec.
3. What is a bow shock?
4. Name the planets having rings around them.
5. Explain the death of a star.
6. What a HR diagram?
7. What is a neutron star?
8. Define absolute magnitude.
9. How elliptic system of coordinates measured?
10. What is HR diagram?

(8×1=8 weightage)

Part B (Short Essay/Problems)

Answer any **six** questions.

Weight 2 each.

11. Discuss the formation and properties of sun spot.
12. Briefly discuss the properties and formation of solar wind.
13. Give a comparison on the magnetic fields of Moon and Earth.
14. Why are some planets surrounded by rings?





15. Explain the features of dark matter.
16. Write a note on pre main sequence contraction.
17. How bolometric and radiometric magnitudes of a star defined?
18. Briefly explain the inference of stellar luminosity from HR diagram.

(6×2=12 weightage)

Part C (Essay Type Questions)

Answer any **two** questions.

Weight **5** each.

19. What is a celestial sphere? How stellar positions can be determined using the horizontal celestial coordinate system?
20. Explain the following; i) Absolute magnitude and the distance modulus ii) The bolometric magnitude iii) Radiometric magnitudes iv) The color index of a star v) Luminosities of a star.
21. Explain the features of clusters in detail.
22. Briefly explain the following related to stars (a) apparent and absolute magnitudes, (b) bolometric and radiometric magnitudes.

(2×5=10 weightage)

