



Reg. No. :

Name :

VI Semester B.Sc. Degree (CBCSS – Reg./Supple./Improv.)
Examination, April 2021
(2014 – 2018 Admissions)
CORE COURSE IN PHYSICS
6B15PHY (Elective B) : Astronomy and Astrophysics

Max. Marks : 40

Time : 3 Hours

SECTION – A

Answer **all** questions. **Each** question carries **1** mark.

1. Name of our galaxy is
2. The color index of sun is
3. The distance of sun from earth is 1.495×10^{11} m. In terms of parsec it is
4. Pulsating Neutron stars are called

SECTION – B

Answer **any 7** questions. **Each** question carries **2** marks.

5. Write the properties of cosmic rays.
6. Define parsec.
7. What is Red Shift ?
8. Write down the spectral sequence ordered from the hottest to the coolest stars according to Harvard spectral classification.
9. What is solar granulation ?
10. Distinguish between white dwarf and black hole.



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11. Explain cosmic ray showers.
12. What are the quantities on which the brightness of a star depends on ?
13. What is the relation between parsec and light year ?
14. Distinguish between absorption and emission spectra.
15. Draw H-R Diagram.
16. Explain what is Corona.
17. What is Umbra ?
18. What are Meteorites ?

SECTION – C

Answer **any 4** questions. **Each** question carries **3** marks.

19. Explain the origin of cosmic rays.
20. Explain longitude effect of cosmic rays.
21. Distinguish between absolute and apparent magnitude. Also obtain the relation between them.
22. If the strength of the galactic magnetic field is $10 - 2G$, what would be the splitting of 21 cm line of neutral hydrogen ?
23. Explain the seven spectral types in Harvard spectral classification of stars.
24. With the neat Hertsprung – Russell diagram, explain the different parts of it.
25. Find the Schwarzschild radius of a star of mass M .
26. Compare asteroids and meteorites.

SECTION – D

Answer **any 2** questions. **Each** question carries **5** marks.

27. What are Galaxies ? Explain the origin and evolution of Galaxies. How are they classified ?
 28. Discuss the Stellar positions and any two celestial co-ordinate system for describing the position of a heavenly object.
 29. Explain the following :
Doppler effect. Also explain red shift and blue shift.
 30. Explain the Harvard system of spectral classification.
 31. Explain the 11 year solar cycle and sunspots.
 32. Explain different stages of a star which finally leads to a neutron star.
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