K18U 0137

Reg. No. : .....

Name : .....

VI Semester B.Sc. Degree (CBCSS – Reg./Supple./Imp.) Examination, May 2018

CORE COURSE IN PHYSICS

6B15 PHY : (Elective – B) : Astronomy & Astrophysics

(2014 Admn. Onwards)

Time : 3 Hours Max. Marks : 40

Instruction : *Write answers in* ***English only.***

SECTION – A

Answer **all**-very short answer type-**each** question carries **1** mark.

1. Black body is one which _____ all the radiations.
2. Y-axis in HR diagram is _____
3. Dark central region in sunspot is called _____
4. Corona is the extensive halo seen around the Sun at the time of _____

(1×4=4)

SECTION – B

Answer **any seven**-short answer type-**each** question carries **2** marks.

5. Define absolute magnitude.
6. Define parsec.
7. What is meant by color index of a star ?
8. Explain solar wind.
9. What is Schwarzschild radius of a black hole ?
10. Explain Doppler effect.

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11. Explain Limb darkening.
12. What are comets ?
13. What are cosmic rays ?
14. Explain pulsars. **(2×7=14)**

SECTION – C

Answer **any four**-short essay/problem-**each** question carries **3** marks.

15. The spectrum of star shows a Doppler shift of 10^{-2} Å of a line whose natural wavelength is 5000 Å. Calculate the velocity of the star along the line of sight.
16. Using Wien's displacement law, find the temperature of an object whose blackbody spectrum peaks at the wavelength of 1) 4000 Å & 2) 6563 Å.
17. Define the following :
    1) Visual Magnitude
    2) Photovisual Magnitude
    3) Photographic Magnitude.
18. What is HR diagram ? Draw it.
19. If the strength of the galactic magnetic field is 10^{-2} G, what would be the splitting of 21 cm line of neutral hydrogen ?
20. Distinguish between absolute and apparent magnitude. Also obtain the relation between them. **(3×4=12)**

SECTION – D

Answer **any two**-long essay type-**each** question carries **5** marks.

21. Give an account on the internal structure and atmosphere of Sun.
22. What are galaxies ? Explain the origin and evolution of galaxies. How are they classified ?
23. Discuss the Stellar positions and any two celestial co-ordinate system for describing the position of a heavenly object.
24. Explain the Harvard system of special classification and the HD catalogue. **(5×2=10)**
