K20U 0143

Reg. No. : .....

Name : .....

VI Semester B.Sc. Degree (CBCSS-Reg./Supple./Improv.)
Examination, April 2020
(2014 Admission Onwards)
CORE COURSE IN PHYSICS (Elective B)
6B15PHY : Astronomy and Astrophysics

Time : 3 Hours Max. Marks : 40

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

SECTION – A

Answer **all.** Very short answer type. **Each** question carries **one** mark.

1. The apparent luminosity of zero magnitude star is
2. The origin chosen for ecliptic system
3. The distance of sun from earth is 1.495×10^{11}m. In terms of parsec it is
4. The name of the group served as the primary standard for the measurement of the photovisual magnitude is

SECTION – B

Answer **any seven**: Short answer type. **Each** question carries **two** marks.

5. What are solar flares ?
6. What is solar telescope ?
7. Give any four main parts of a telescope.
8. Define the term photo diffusion time.
9. Explain the visual method.
10. What is red shift ?
11. Distinguish between white dwarf and black hole.
12. What is Schwarzschild radius of a black hole ?
13. What is the relation between parsec and light year ?
14. Mention two applications of color index.

P.T.O.

SECTION – C

Answer **any four**. Short essay/ problem type. **Each** question carries **three** marks.

15. What are pulsars ? How can we detect them ?

16. With the neat Hertsprung-Russell diagram, explain the different parts of it.

17. Explain Chandrasekhar limit.

18. The parallax angle for Sirius isd 0.379 degree. Find the distance to Sirius in units of

    i) parsec ii) light year

    iii) AU iv) metre

19. Obtain the relation between absolute and apparent magnitude. The apparent magnitudes of Alpha centuari and Betelgese are – 0.10 and + 0.80 respectively. Compare the brightness of these stars.

20. Using Wien's displacement law, find the temperature of an object whose black body spectrum peaks at the wavelength of

    1) 4000Å and 2) 6563Å

SECTION – D

Answer **any two**. Long essay type. **Each** question carries **five** marks.

21. Explain the Harvard system of special classification and the HD catalogue.

22. Explain the following : Horizontal system, equatorial system and ecliptic system.

23. Explain the general properties and various aberrations of a telescope.

24. Explain the following : Plank's theory of Black body radiation, Doppler effect and Zeeman effect.