

BSc DEGREE EXAMINATION DECEMBER 2017
(Second Semester)

Branch - **PHYSICS**

ASTROPHYSICS

Time : Three Hours

Maximum : 75 Marks

SECTION-A (20 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** marks (10 x 2 = 20)

- 1 State Period-Luminosity law.
- 2 What is mean by Galactic system?
- 3 What are Asteroids?
- 4 State any two physical properties of Stars.
- 5 Give the equation of thermal equilibrium.
- 6 What are called free-free transition?
- 7 What is meant by Star formation?
- 8 What is Jean's criterion.for self-gravitation?
- 9 What is known as proton-proton chein?
- 10 What is thermonuclear fusion?

SECTION - B (25 Marks)

Answer **ALL** Questions

ALL Questions Carry **EQUAL** Marks (5 x 5 = 25)

- 11 a Explain Secular Parallax method of determining stellar distances.
OR
b Explain trigonometric parallax method of determining star distances.
- 12 a Explain about Black hole.
OR
b How will you estimate the surface temperature of the sun?
- 13 a Write a note on Schwarzschild's model for real stars.
OR
b Obtain an equation of energy transfer.
- 14 a Explain about nuclear time scale.
OR
b Explain the effect of hydrogen depletion in the star.
- 15 a Explain CN cycle.
OR
b Explain about the second generation stars.

SECTION - C (30 Marks!)

Answer any **THREE** Questions

ALL Questions Carry **EQUAL** Marks (3 x 10 = 30)

- 16 Explain the universal equatorial system in detail.
- 17 Describe with a neat diagram, the construction and working of Refracting telescope.
- 18 Explain with theory the homologous model for main sequence stars.
- 19 State and prove the Virial theorem.
- 20 Explain (i) Equilibrium theory and
(ii) Non equilibrium theory of nucleosynthesis.