

B. TECH.
(SEM-IV) THEORY EXAMINATION 2018-19
SPACE SCIENCE

Time: 3 Hours

Total Marks: 100

Note: Attempt all sections equally in writing at the end of the hour suitably.

SECTION

1. Attempt all questions brief. 2 x 10 = 20

- a. What are the important applications of space science?
- b. What do you mean by space colonization?
- c. Differentiate between solar star and composite star.
- d. State of Kepler's law of planetary motion.
- e. Give some applications of Chandrasekhan limit.
- f. What is black hole?
- g. What is quintessence?
- h. What is Trojan satellites?
- i. What are variable stars?
- j. Define the term luminosity of a star?

SECTION B

2. Attempt any three of the following: 10 x 3 = 30

- a. Discuss the various process of stellar science. Write down some application of space science.
- b. Explain the nebular theory of the origin of the star system.
- c. Describe the birth and evolution of a star. Also mention nucleo-synthesis and formation of elements in the star.
- d. How the galaxies were originated? Give the classification of galaxies.
- e. Write short note about the dark matter and dark energy. Write some key points for comets and asteroids.

SECTION C

3. Attempt any one part of the following: 10 x 1 = 10

- (a) Discuss some important space mission and their achievements.
- (b) What is artificial satellite? How is this satellite launched in space? Discuss its importance to society?

4. Attempt any one part of the following: 10 x 1 = 10

- (a) Draw a neat sketch of our solar system and show the relative positions of planets. Discuss about Pluto.
- (b) Write a brief description about the solar winds and nuclear reaction proceedings in the Sun.

5. Attempt any one part of the following: 10 x 1 = 10

- (a) Discuss about binary stars? What is Eddington luminosity?
- (b) What is Bodes law? Which planets do not fit in Bodes law and why?

6. Attempt any one part of the following: 10 x 1 = 10

- (a) Discuss the violent activities in galaxies. Describe quasars in detail.
- (b) What is Nebula? How do you differentiate from the galaxy?

7. Attempt any one part of the following: 10 x 1 = 10

- (a) Discuss Hubble model for expansion of the universe. How it differs with Big band Model?
- (b) Write short notes on following:
 - (i) Supernova.
 - (ii) Big-band Model.
 - (iii) Havard Classification System.