

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

**Time: 3 Hours****Total Marks: 100****Note: 1.** Attempt all Sections. If require any missing data; then choose suitably.**SECTION A****1. Attempt all questions in 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.