

Printed Pages : 2



NOE044

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 199434

Roll No.

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B. Tech.

(SEM. IV) THEORY EXAMINATION, 2014-15
SPACE SCIENCE

Time : 3 Hours]

[Total Marks : 100

Note : Attempt all questions. All questions carry equal marks.

1 Answer any four parts of the following : **5×4=20**

- What do you understand by space science ?
- Describe space colonization.
- Discuss the various processes of stellar science.
- Write down some of the applications of space science.
- Discuss astronomical methods.

2 Answer any two parts of the following : **10×2=20**

- Explain the nebular theory of the origin of the solar system.
- Explain Kepler's laws of planetary motion. Deduce Newton's laws from Kepler's laws.

199434]

1

[Contd...

- (c) Write the short notes on :
- (i) Comets
 - (ii) Asteroid Belt
 - (iii) Dwarf Planets
 - (iv) Trojan satellites.
- 3** Answer any four parts of the following : **5×4=20**
- (a) Define Chandrasekhar limit. Give its applications.
 - (b) What is black hole ? How it is formed ?
 - (c) Discuss about binary stars.
 - (d) What is Eddington luminosity ?
 - (e) How can we differentiate star clusters ?
- 4** Attempt any two parts : **10×2=20**
- (a) What is Nebula ? How do you differentiate from the galaxy ?
 - (b) What are variable stars ? How they are designated ? Discuss the typical light curve of a variable star.
 - (c) What are quasars ? Explain their characteristics.
- 5** Attempt any two parts : **10×2=20**
- (a) Define dark energy and dark matter. How does they affect the universe ?
 - (b) Explain Hubble expansion model of universe.
 - (c) What is quintessence ? How it differs from cosmological constant ?