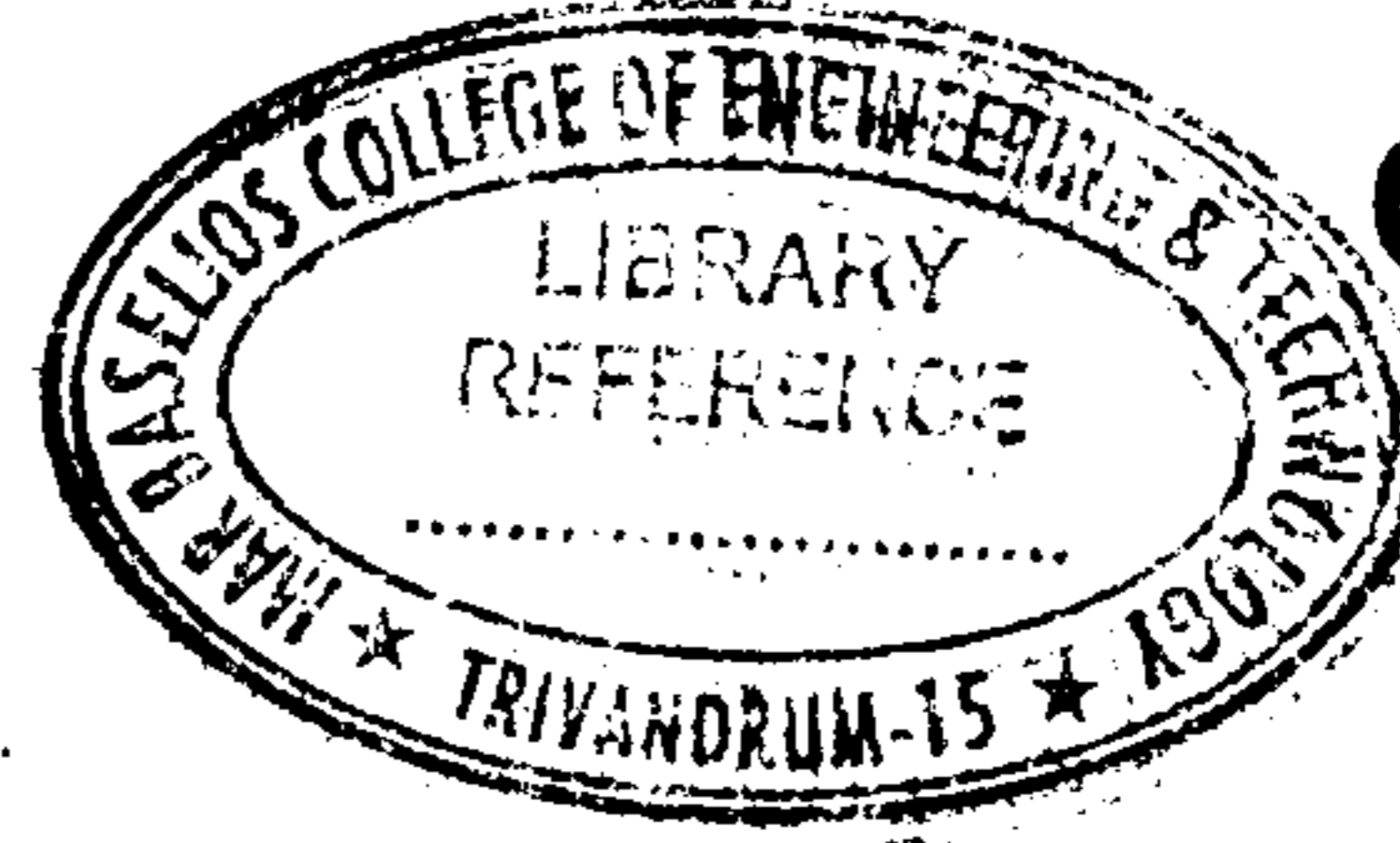




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C – 2469

Reg. No. : .....

Name : .....

**Eighth Semester B.Tech. Degree Examination, May 2017  
(2013 Scheme)  
13.806.6 : SATELLITE COMMUNICATIONS (T)  
(Elective – VI)**

Time : 3 Hours

Max. Marks : 100

**PART – A**

Answer **all** questions (2 marks **each**).

1. What is meant by station keeping ?
2. Justify why the orbit is called as orbital keplerian element ?
3. What is an EIRP ?
4. Define sky noise.
5. A transponder require a saturation flux density of  $-110$  dBm/m<sup>2</sup>, operating frequency of 14 GHz. Total loss = 200dB find [EIRP].
6. What are methods of multiple access techniques ?
7. What are the disadvantages of FDMA ?
8. State Carson's rule.
9. What are the applications of GPS ?
10. Point out the mobile satellite systems.

**PART – B**

Answer **any one full** question from **each** Module (20 marks **each**).

**Module – 1**

11. Explain the following :
  - i) Orbital perturbations.
  - ii) Launching vehicles.

10

10

OR

P.T.O.



12. a) Categorize the frequency allocations and draw the frequency spectrum for satellite services. 12
- b) Express the three Kepler's laws of planetary motion and list the various orbital parameters. 8

### Module – 2

13. a) Solve C/N ratio is directly proportional to G/T ratio from the calculation of system noise temperature. 12
- b) Describe about antenna subsystem. 8

OR

14. a) List and explain the factors governing the design of satellite links. 10
- b) Find the equations for the link power budget. 10

### Module – 3

15. a) Illustrate the features of various multiple access schemes deployed for satellite access and compare it. 14
- b) Explain the operation of FDMA and list how this differs from FDM. 6

OR

16. a) Discuss about analog voice transmission. 10
- b) Point out the pros and cons of satellite system based on TDMA. Also explain the TDMA frame format in detail with relevant diagrams. 10

### Module – 4

17. a) Analyze the DTH system with the help of neat block diagrams. 10
- b) Elaborate the main features and services offered by mobile satellite systems. 10

OR

18. a) Show how the demand assigned multiple access and various configuration used on VSAT. 10
- b) Extend the operation of GPS in detail with necessary diagrams. 10