(b) Explain about Earth eclipse of satellite and sun transit outage ? 8

(c) What is Sun synchronous orbit ? 4

SECTION – D

8. (a) Describe the operation of typical VSAT system. State briefly where VSAT systems and find widest applications. 10

(b) Write short note on DBS. 10

9. (a) Explain the basic difference between the optical satellite communication link and RF-satellite communication link. 8

(b) Compare various types of laser sources being used in laser communication systems. 8

(c) Why Tracking & Positioning of laser satellite is more difficult than RF satellites ? 4

Roll No. .....

24441

B. Tech. 7th Semester (ECE) Examination – December, 2016

SATELLITE COMMUNICATION

Paper : ECE-403-F

Time : Three Hours] *[Maximum Marks : 100*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Question No. **1** is ***compulsory*** and attempt *one* question from each of four Sections. All questions carry equal marks.

1. (a) Why uplink frequency is always higher than uplink frequency ? 3

(b) What do you free space loss ? 4

(c) What is an EIRP ? 3

(d) State all the Kepler's law. 4

(e) Define mean anomaly and true anomaly. 3

(f) What is Satellite Switched TDMA ? 3

SECTION – A

2. (a) Give the advantage of geostationary orbit. 7

(b) Analyze function of transmit receive earth station with block diagram. 7

(c) Can a low altitude satellite be used for communication and why ? 6

3. (a) List various advantages and disadvantages of satellite communication. Give the reasons that optical fibers in spite of being high bandwidth channel, satellite communication has an edge over it. 10

(b) What is system noise temperature ? How does it affect the C/N and G/T ratio ? 10

SECTION – B

4. (a) What is meant by 'threshold' in FM detector ? Explain FM improvement and derive the S/N ratio for SCPC signals. 10

(b) Explain the CSSB systems in satellite communication. 10

5. (a) What is Frequency division multiplexing ? Write down its merits and demerits over TDM. 10

(b) What is energy dispersal ? Discuss its applications for sat com ? Also, explain the dispersal signal. 10

SECTION – C

6. (a) Describe the way in which demand assignment may be carried out in FDMA. 8

(b) Explain beam hopping TDMA. 8

(c) What is pre-assigned traffic ? 4

7. (a) What is meant by station keeping of satellite ? What is N-S and E-W station keeping ? 8