Code : R7410409

R07

IV B.Tech I Semester (R07) Supplementary Examinations, May 2012
SATELLITE COMMUNICATIONS
(Electronics & Communication Engineering)

Time: 3 hours   **Max Marks: 80**

Answer any FIVE questions
All questions carry equal marks
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1. (a) Write a detailed summary of European expandable launch vehicles.
    (b) List out the frequency allocations for various satellite services.

2. (a) Explain the following terms:
            (i) Orbit determination   (ii) Look angle
    (b) What is an eclipse? How does it affect the satellite functions?

3. (a) Explain different methods for stabilizing a satellite.
    (b) What do you mean by station keeping? Explain.

4. (a) Discuss the uplink design of the satellite communication.
    (b) Explain the concept of Noise temperature.

5. (a) Draw the TDMA frame structure.
    (b) Calculate the frame efficiency of a TDMA frame of period 2.2ns.
         Total frame length = 128000 symbols.
         Guard interval = 110 symbols
         Number of traffic bursts/frame = 14
         Number of reference bursts/frame = 1
         CDC during reference burst = 10 symbols.
         Number of preamble = 208 symbols.

6. With a neat block diagram explain the general configuration of an earth station.

7. Explain the operational NGSO constellation design.

8. Explain the principle of operation of GPS receiver with a neat diagram.

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