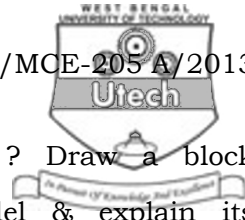


Invigilator's Signature :

[Turn over



2. a) Give a one line definition of Satellite ? What is a Keplerian Orbit ? What is sub satellite point ? 1 + 1 + 1
- b) What are the 3 laws of Kepler that govern the movement of planets around earth ? 6
- c) Explain the concept of “Look Angle” with reference to Azimuth & Elevation with necessary diagrams. 5
3. a) What are the various steps to launch a Synchronous satellite in orbit ? Explain with diagrams. 5
- b) Name the different primary launch vehicles. 3
- c) What are the two technologies to help a spacecraft achieve a synchronous orbit ? 2
- d) What are the various applications of Satellites ? 4
4. a) What are the various activities a spacecraft has to perform on a regular basis to support the communication system it carries ? 4
- b) What are the various functions of the Attitude & orbital control system in a communication satellite ? 4
- c) With a suitable block diagram, explain the principle of operation of a Satellite Ranging system. How is Range measured ? 6



5. a) What is a Satellite Transponder ? Draw a block Schematic of a Transponder model & explain its operation. 1 + 4
- b) Explain the concept of Channelization as applicable to a communication satellite with multiple active transponders. 5
- c) What is the concept of Dual polarization channelization plan ? 4
6. a) Explain the concept of Demand Assigned Multiple Access Technique. 2
- b) What are the different propagation effects in a Satellite Earth link. 5
- c) Derive an expression for Received power from basic Transmission theory. 7
7. a) Draw the block schematic of Satellite earth station & explain its operation. 6
- b) Derive an expression for G/T ratio from fundamental concepts. 4
- c) What are the advantages of VSAT ? Explain the concept of Direct Broadcast Service. 2 + 2