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Roll No. ....

**G43**

**B. Tech. EXAMINATION, 2020**

(Seventh Semester)

(B Scheme) (Main & Re-appear)

(ECE)

ECE405B

SATELLITE COMMUNICATION

*Time : 2½ Hours]*

*[Maximum Marks : 75*

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

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**Note :** Attempt *Four* questions in all. All questions carry equal marks.

**(2)M-G43**

**1**

1. (a) Explain basic operation of satellite communication system with its block diagram.  
(b) Mention some of the important applications of satellite.
2. (a) Mention the effect of eclipse on the orbital motion of a satellite.  
(b) Explain different methods for stabilizing a satellite.
3. (a) With the help of block diagram explain telemetry, tracking and command (TT&C) sub-system of a satellite.  
(b) What are the requirements in designing an antenna ? Explain.
4. (a) What is system noise temperature ? How does it affect the C/N and G/T ratios ?

- (b) What are the various interferences that may affect the satellite link performance ? Explain as to how these interference effects are taken into account in the satellite link design ?
5. (a) What are the earth station parameters ?  
(b) Explain working of earth station subsystem transmitter and receiver.
6. (a) How does digital satellite communication differ from its analog counterpart ? Explain the relative merits and demerits of these two methods.  
(b) State advantages and disadvantages of BPSK. Draw the BPSK signal for the following binary signal :  
1 0 1 1 1 0 1 0.
7. (a) What is guard time ? Mention its role in TDMA efficiency.

- (b) Describe the differences among the basic multiple access methods FDMA, TDMA and CDMA. Explain their main properties.
8. (a) What is VSAT system ? How does a VSAT work ? Who uses a VSAT system ?
- (b) What is GPS and what information a GPS signal carries ?