

Roll No

EC-702

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B.E. VII Semester

Examination, December 2015

Satellite Communication**Time : Three Hours****Maximum Marks : 70**

- Note :** i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.
 ii) All parts of each question are to be attempted at one place.
 iii) All questions carry equal marks, out of which part A and B (Max.50 words) carry 2 marks, part C (Max.100 words) carry 3 marks, part D (Max.400 words) carry 7 marks.
 iv) Except numericals, Derivation, Design and Drawing etc.

Unit - I

1. a) Name some services provided by satellites.
- b) List the frequency band designations in common use for satellite services.
- c) Discuss Kepler's Third law.
- d) What are the effects of a non spherical earth?

OR

Discuss briefly about the inclined orbits.

Unit - II

2. a) What are the three pieces of information that are needed to determine the look angles for the geostationary orbit?
- b) What are antenna look angles?
- c) Determine the angle of tilt required for a polar mount used with an earth station at altitude 49 degrees north. Assume a spherical earth of mean radius 6371 km and ignore earth station altitude.

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- d) Discuss Antenna polarization.

OR

Explain about Ionospheric depolarization.

Unit - III

3. a) What is meant by disturbance torques of satellite?
- b) What is the need of station keeping?
- c) Explain briefly about transponder.
- d) Write short note on advanced Tiros - N space craft.

OR

Explain about the receive only home TV systems.

Unit - IV

4. a) What is equivalent Isotropic Radiated Power?
- b) The range between a ground station and a satellite is 42,000 km. Calculate the free space loss at a frequency of 6 GHz.
- c) Write the link power budget equation and explain its different terms.
- d) Calculate the combined uplink and downlink C/N ratio.

OR

Explain Interference between satellite circuits.

Unit - V

5. a) What is meant by DBS Television and Radio?
- b) What are the access control protocols of VSAT system?
- c) How to error control in digital DBS-TV?
- d) Calculate the link budget of a DBS TV system.

OR

Give an overview and network architecture of VSAT systems.

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