

Roll No

EC-702**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.
