

End Semester Examinations - 2015-16 Even Semester - May 2016

14EC3015 Satellite Communication

Set A

Time : 3 hrs
Total Marks: 100

1. a) what are the effects of orbital perturbation in various orbital parameters (8)
b) List out the satellite orbital elements and brief each one's functionality?(12)

OR
2. a) State and prove Kepler's laws of planetary motion and explain its significance in space(12)
b) From the geometry of GSO satellite, explain how the range and elevation angle to satellite are calculated(8)
3. a) Derive an expression for Fris transmission?(15)
b) A satellite TV signal occupies the full transponder bandwidth of 36MHz, and it must provide C/N ratio at the destination earth station of 22dB. Given that the total transmission losses are 200dB and the destination G/T is 31dB/K, calculate the satellite EIRP required?(5)

OR
4. a) Derive an expression for System noise temperature?(10)
b) Explain about EIRP? (5)
c) An antenna has a noise temperature of 35K and is matched into a receiver which has a noise temperature of 00K. calculate noise power density and noise power for a bandwidth of 36MHz?(5)
5. a) Briefly describe the ways in which demand assignment may be carried out in an FDMA network(10)
b) Comment on any one of the compression technique (5)
c) Explain frequency hopping with an example (5)

OR
6. a) Mention the satellite application in DTH services (10)
b) Explain about GSM with neat diagrams(10)
7. Explain spread spectrum techniques with neat diagrams

OR
8. a) Distinguish between preassigned and demand assigned TDMA traffic in relation to satellite network (15)
b) Explain about GPS services through satellite (5)
9. With neat block diagram explain satellite earth station?

Wishing you All the Best