

--	--	--	--	--	--	--	--	--	--



P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

Eighth Semester, B.E. - Electronics and Communication Engineering

Semester End Examination; May/June - 2018

Satellite Communication

Time: 3 hrs

Max. Marks: 100

Note: Answer FIVE full questions, selecting ONE full question from each unit.

UNIT - I

- | | | |
|------|---|----|
| 1 a. | Explain the various frequency bands used and various services provided by a satellite. | 10 |
| b. | What are the orbit perturbations that take place because of non-spherical nature of earth? | 10 |
| 2 a. | State and explain Kepler's law of planetary motion with neat diagram and necessary equations. | 10 |
| b. | Briefly explain the launching of orbits in geostationary satellite. | 6 |
| c. | What is side real time? | 4 |

UNIT - II

- | | | |
|------|--|----|
| 3 a. | Explain attitude control of a satellite. | 7 |
| b. | Explain how station keeping is done in satellite? | 7 |
| c. | With the help of a neat diagram, explain wideband receiver of a transponder. | 6 |
| 4 a. | Explain the 'receive-only' home TV system. | 13 |
| b. | Explain a master antenna TV system with a neat diagram. | 7 |

UNIT - III

- | | | |
|------|--|----|
| 5 a. | What is meant by pre-assigned FDMA? With a neat diagram, explain single channel per carrier. | 10 |
| b. | Explain briefly different types of satellite access. | 10 |
| 6 a. | Explain the frame and burst formats for a TDMA system. | 10 |
| b. | Explain in detail the working of code division multiple accesses. | 10 |

UNIT - IV

- | | | |
|------|--|----|
| 7 a. | Explain the following transmission losses : | 10 |
| | i) Feeder losses ii) Antenna misalignment losses | |
| b. | Model an expression for downlink of satellite circuit. | 10 |
| 8 a. | With a neat diagram, explain the bent pipe relay architecture. | 10 |
| b. | With a neat diagram, explain the TCP/IP satellite link spoofing configuration. | 10 |

UNIT - V

- | | | |
|-------|--|----|
| 9 a. | Explain in detail the working of MPEG-2 encoder paths. | 10 |
| b. | With a block schematic, explain the home receiver In Door Unit [IDU]. | 10 |
| 10 a. | Describe the main feature iridium system in detail with diagram and application. | 10 |
| b. | Explain in detail GPS along with a block diagram of GPS services. | 10 |