KINGS

COLLEGE OF ENGINEERING
DEPARTMENT OF INFORMATION TECHNOLOGY

QUESTION BANK

Subject code/ Name: IT1351/ Telecommunication Systems
Year/ Sem : III/V

UNIT – 1
METHODS OF COMMUNICATION
PART-A (2 MARKS)

1. Define transmission line.
2. State the classification of transmission line.
3. Define unbalanced line with an example.
4 Define balanced line with an example.
5. State the relation between wavelength and frequency.
6. Define velocity factor.
7. Define characteristic impedance.
8. Define standing waves.
9. Define standing wave ratio.
10. Define polarization
11. Define antenna.
12. What are the modes of radio wave propagation?
13. Define ground waves and what is the frequency range of ground waves?
14. What is sky wave?
15. What is ionosphere?
16. What are the layers in ionosphere?
17. Define space waves.
18. State the function of repeater?
19. State the challenges of microwaves.
20. What are the applications of microwaves?
21. Define resonant cavity.

22. Define velocity modulation.

23. State the applications of Reflex Klystron.

24. What are the applications of magetron?

25. State the application of TWT.

26. Define Doppler Effect.

27. State the applications of Radar.

PART – B

1. Explain the different types of transmission lines with suitable diagrams.	**(16)**
2. Explain about the generation of standing waves under different conditions.	**(16)**
3. Explain the different types of low frequency antennas with suitable diagrams.	**(16)**
4. Explain the different types of antenna arrays with suitable diagrams.	**(16)**
5. Explain the modes of radiowave propogation.	**(16)**
6. Explain the challenges and applications of microwaves.	**(16)**
7. Explain the construction and operation of Klystron amplifier.	**(16)**
8. Explain the construction and operation of ReflexKlystron Oscillator.	**(16)**
9. Explain the construction and operation of magnetron and TWT.	**(16)**
10. Explain the operation of pulsed radar with suitable Block Diagram	**(16)**

UNIT-2
INTRODUCTION TO SATELLITE COMMUNICATIONS
PART-A(2 MARKS)

1. Define orbit.

2. State the basic function of satellite transponder.

3. List the satellite orbits.

4. Define inclined orbit.

5. Define polar orbit.

6. Define geostationary orbit.

7. Define geosynchronous orbit.

8. Compare geostationary & geosynchronous orbits.

9. Define perigee and apogee.

10. Define sidereal and synodic periods.

11. Define angle of inclination and angle of elevation.

12. State the uplink frequency and downlink frequency.
13. What is the bandwidth of a communication satellite?
14. What are the techniques for increasing channel capacity?
15. What are the major subsystems in a communication satellite?
16. Write short notes on telemetry tracking and control subsystem.
17. What is the basic transponder configuration?
18. State the major subsystems in a satellite earth station.
19. What is the function of a diplexer?
20. List the applications of a satellite

PART-B

1. Explain different satellite orbits with suitable diagrams. (16)
2. Explain operation of common satellite with satellite block diagrams. (16)
3. Explain the function of satellite earth station with suitable block diagrams. (16)
4. Describe the applications of satellite. (16)

UNIT-3
INTRODUCTION TO FIBER OPTIC COMMUNICATION
PART-A (2 MARKS)

1. State the frequency range of optical fiber communication.
2. List the optical sources used for optical fiber communication.
3. List the optical detectors.
4. State the applications of optical fibers.
5. List the advantages of optical fiber systems.
7. Define refractive index.
8. Define critical angle.
9. Define total internal reflection.
10. Describe the construction of optical fiber cable.
11. Define mode.
12. What is single mode fiber and multimode fiber?
13. What is meant by modal dispersion?
14. List the reasons for the losses in optical fiber cable.
15. Define absorption.

16. What is the reason for absorption?

17. Define scattering.

18. State the expression for attenuation in optical fiber cable.

19. Write short notes on cable splicing and connectors.

PART- B

1. Explain different types of optical fiber cables. (16)

2. Explain different optical transmitters and receivers. (16)

3. Explain different fiber optic data communication system. (16)

UNIT-4
THE TELEPHONE AND APPLICATIONS
PART-A (2 MARKS)

1. Define Local Loop.

2. What is meant by DTMF system?

3. What is the frequency response of the local loop?

4. State the ringing voltage and ringing frequency.

5. State the function of automatic level adjustment.

6. What is the function of MPU in electronic telephone?

7. State the elements in MPU.

8. What are the main units in a cordless telephone?

9. State the frequencies of cordless telephone.

10. What is the power rating of cordless phones?

12. Define CCD.

13. Define pixel.

14. Define data compression.

15. Define modem.

16. State FAX standards.

17. State the scanning rate of FAX machines.

18. Define cell.

19. Define Hand off.

20. What is meant by GSM system?

PART- B

1. Explain the operation of a telephone circuit. (16)
2. Explain the construction and operation of the electronic telephone and cordless phones with suitable diagrams. (16)
3. Explain the operation of fax machine with suitable diagrams. (16)
4. Explain the operation of cellular telephone unit. (16)
5. Explain the construction and operation of paging system. (16)
6. Explain in detail about ISDN. (16)

UNIT-5
CELLULAR RADIO
PART –A (2 MARKS)

1. What is meant by air interface?
2. What is a base station controller?
3. Define blank-an burst signaling.
4. What is meant by call blocking?
5. State the principle behind the CDPD method of data transmission.
6. What is CMAC?
7. What is the use of Digital color code?
8. What is a dropped call?
9. What is meant by ESN?
10. What is a fast associated control channel?
11. What is a forward channel?
12. What is meant by handoff?
13. What is an IMTS?
14. What is a mobile identification number?
15. What is a mobile switching center?
16. Define NAM.
17. What is a reverse channel?
18. What do you mean by a ‘roamer’?
19. What is a supervisory audio tone?
20. Define telepoint.

PART- B

1. Explain AMPS system. (16)
2. Explain AMPS control system. (16)
3. Explain the operation of analog cell phone with suitable block diagram. (16)
4. Explain in detail about cell – site equipment. (16)
5. How Fax and data communications are performed using cellular phone. (16)
6. Explain digital cellular systems. (16)
7. Explain AMPS system. (16)
8. Explain AMPS control system. (16)
9. Explain the operation of analog cell phone with suitable block diagram. (16)
10. Explain in detail about cell – site equipment. (16)
11. How Fax and data communications are performed using cellular phone. (16)
12. Describe the function of IS-95 CDMA PCS system with suitable diagrams Channels. (16)