

34051 – Advanced Communication Systems

1. Radar And Navigational Aids

Part – A

1. Mention two types of aircraft landing system.
2. State the features of ISDN.
3. What is radar? State any one application of it.
4. Define IOC.
5. What is video phone?
6. What is fax?

Part –B

1. State any three applications of RADAR.
2. Draw a simple ISDN architecture diagram.
3. What is radar range equation. State the factors influencing maximum range.
4. Draw basic pulsed radar block diagram.
5. Explain about electronic switching system.

Part – C

1. Draw the block diagram of basic pulsed RADAR system and explain.
2. Draw and explain cylindrical scanning used in FAX communication system.
3. Explain ISDN architecture with neat diagram.
4. Explain direct recording with neat block diagram.
5. Explain about an instrument landing system.
6. Explain electronic switching system.
7. Explain briefly A-scope display.

2. Digital Communication

Part – A

1. State the different digital codes used in digital communication system.
2. State the different modulation techniques used in digital communication.
3. State any two error correction codes.
4. What is bending loss?
5. What are redundant codes?
6. What is ASCII code?
7. What is equalizer?
8. Define FSK modulation.
9. What is crosstalk?

Part – B

1. Define any two characteristics of data transmission circuits.
2. Draw the block diagram of ASK demodulator.
3. Define cross talk and distortion in digital communication.
4. State the different types of digital modulation techniques.
5. Explain any one of the digital modulation techniques.

Part – C

1. Explain any three characteristics of data transmission circuits.
2. Draw and explain PSK modulator and demodulator.
3. Draw a neat block diagram of digital communication system and explain.
4. Explain hamming code with an example.
5. Explain the block diagram and operation of FSK modulation and demodulation techniques.
6. Explain EBCDIC code.

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3. Optical Communication

Part – A

1. State the various light sources used in optical communication.
2. State any two applications of optical fiber.
3. What is a single mode fiber?
4. What is splicing?
5. State the various types of absorption losses.
6. What is connector in optical communication system?

Part – B

1. Differentiate single mode and multimode fiber.
2. Define step index and graded index fiber.
3. Explain the differences between PIN and APD diodes.
4. State any three advantages of optical fiber communication system.
5. State the different types of losses in optical fiber.

Part – C

1. State the different types of optical fiber.
2. Explain fiber optic receiver with diagram.
3. Draw a block diagram of optical communication system and explain.
4. Explain any two applications of optical fiber with necessary diagrams.
5. Describe about the principle of light transmission through fiber using ray theory.
6. Explain the operating principle of LASER as a fiber optic light source.
7. Explain different types of couplers used in optical communication.
8. With neat diagram, explain LED as an optical source.

4. Satellite Communication & Microwave Communication

Part – A

1. What is apogee and perigee?
2. State any two microwave devices.
3. List the different types of satellite orbit.
4. Define Geostationary orbit.
5. What is active satellite?
6. What is station keeping?
7. State the use of TWT amplifier.

Part – B

1. Draw a microwave transmitter block diagram.
2. Draw the block diagram of a satellite transponder.
3. Explain about Kepler's laws.
4. Explain about GPS.

Part – C

1. Explain about geostationary synchronous satellites. State its advantages and disadvantages.
2. With neat block diagram explain microwave link repeater.
3. Explain with necessary block diagram transmit, receive earth station.
4. Explain (i) Earth eclipse of a satellite (ii) Station keeping.
5. Explain the structure of satellite communication system with neat block diagram.
6. Draw and explain MSAT services.
7. (i) Explain different types of satellite orbits.
(ii) State the advantages of geostationary orbits.
8. (i) Explain with block diagram microwave transmitter.
(ii) Draw the block diagram of microwave receiver.

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5. Mobile Communication

Part – A

1. What is TDMA and FDMA?
2. What is adjacent channel interference?
3. What is co-channel interference?
4. Define interferences in mobile communication.
5. What is roaming?
6. What are the major interconnected systems of GSM?
7. State the types of satellite multiple access techniques.

Part – B

1. Name the important sub-systems of GSM architecture.
2. Draw a diagram to show how TDMA works.
3. Mention about frequency reuse in cellular system.
4. Mention about the basics of GPRS.
5. Draw a basic diagram to illustrate FDMA system.

Part – C

1. (i) What is roaming?
(ii) Explain how hand-off takes place with neat diagram in four steps.
2. Explain GSM architecture with neat diagram.
3. Draw and explain simplified cellular telephone system.
4. Explain with diagrams how cell splitting and sectoring are used to improve cellular communication system.
5. Explain the basics of Bluetooth technology.
6. Explain TDMA and FDMA with necessary diagrams.