

K.S.K

COLLEGE OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF
COMPUTER SCIENCE AND ENGINEERING

QUESTION BANK

SUBJECT CODE : CS 6304

SEM / YEAR : III/ II

SUBJECT NAME :ANALOG & DIGITAL COMMUNICATION

UNIT I ANALOG COMMUNICATION**PART-A**

1. Define noise .
2. Define noise figure.
3. What is meant by analog communication system?
4. Define modulation.
5. What are the needs for modulation?
6. What are the advantages of Analog communications?
7. What are the disadvantages of analog communication?
8. Define Frequency modulation.
9. Define Phase modulation.
10. Define modulation index
11. Define percentage modulation .
12. State Carson's rule.
13. Define Deviation ratio.
14. What are the types of analog modulation?
15. Define depth of modulation.
16. What are the degrees of modulation?
17. What is the relation between total power and carrier power?
18. The antenna current of an AM transmitter is 8A when only carrier is sent. It increases to 8.93A when the carrier is modulated by a single sine wave. Find the percentage modulation.
19. A 400W carrier is modulated to a depth of 75 %. Calculate the total power in the modulated wave
20. What is the relation between total power and carrier power?
21. Define demodulation.
22. A transmitter supplies 8 Kw to the antenna when modulated. Determine the total power radiated when modulated to 30%.
23. Define sensitivity.
24. Define selectivity.
25. Define stability.
26. What is called image frequency?
27. What is intermediate frequency?

PART-B

1. Define noise and explain the different types of noise. (16)
2. Define Amplitude modulation (AM) and explain the concept of AM in detail. (16)
3. (i) Define AM power distribution in detail. (8)
(ii). Explain the concept of angle modulation and its waveform in detail. (8)
4. Define SSB modulation and explain the generation and detection of SSB in detail. (16)
5. (i) Compare and contrast Amplitude modulation and frequency modulation. (8)
(ii) Compare frequency modulation and phase modulation. (8)

UNIT II DIGITAL COMMUNICATION**PART -A**

1. Define Digital modulation.
2. What are the advantages of Digital communications?
3. What are the disadvantages of Digital communications?
4. Define bit rate.
5. Define baud rate.
6. Define Amplitude Shift Keying (ASK).
7. Define Frequency Shift Keying (FSK).
8. Define Phase Shift Keying (PSK).
9. Define Minimum Shift Keying (MSK).
10. Define Quadrature Amplitude modulation (QAM).
11. Define bandwidth efficiency.
12. What are the advantages of MSK?
13. What are the advantages of QPSK?

PART-B

1. Explain the concept of ASK in detail (16)
2. Explain FSK in detail (16)
3. Explain MSK in detail (16)
4. Explain the concept of BPSK in detail. (16)
5. Explain QPSK in detail with a necessary block diagrams. (16)
6. With necessary signal space diagram explain briefly about QAM system. (16)
7. (i) Compare the various digital communication techniques. (8)
(ii) Explain the various detection methods of FSK modulation. (8)

UNIT III DATA AND PULSE COMMUNICATION**PART-A**

1. What is meant by data communication
2. What are the applications of data communication?
3. What are the advantages and disadvantages of Parallel communication
4. What are the advantages and disadvantages of series communication
5. What is meant by point to point communication?
6. What is multipoint communication?
7. Define Morse code.
8. What are the different types of error detection techniques?
9. What is meant by Forward Error Correction (FEC)?
10. Define Pulse Amplitude modulation
12. Define Pulse position modulation
13. Define Pulse code modulation
14. Define sampling rate

PART-B

1. Explain the history of data communication (16)
2. Explain in detail about data communication codes. (16)
3. Explain PAM in detail. (16)

4. Explain in detail about PTM . (16)
5. Explain in detail about UART transmitter and receiver with neat diagrams. (16)
6. Explain in detail about serial interface and parallel interface. (16)

UNIT IV SOURCE AND ERROR CONTROL CODING PART-A

1. Define entropy
2. What is meant by variable length coding?
3. Define source encoder
4. Define source encoding theorem
5. Define code redundancy
6. Mention the needs for encoding
7. What are the advantages of Shannon fanocoding
8. Define mutual information
9. Define channel capacity
10. Define channel coding theorem
11. What are the types of error control method?
12. Define linear block codes
13. What are the objectives of cyclic codes

PART-B

1. (i) Describe about linear block codes in detail. (10)
(ii) Explain about Convolutional codes. (6)
2. A $1/3$ rate convolutional encoder has the following generator $g_1=(1\ 0\ 0)$, $g_2=(1\ 0\ 1)$, $g_3=(1\ 1\ 1)$
 - i) Draw the encoder circuit corresponding to this code (3)
 - ii) Draw the code tree (3)
 - iii) Draw the state Diagram (3)
 - iv) Draw the trellis Diagram (3)
 - v) This code is used for transmission over a Awgn channel with hard decision decoder. The output of the demodulation decoder is 1010010111101111. Using viterbi algorithm find the transmitted sequence. (4)
3. Explain Cyclic codes in detail. (16)

UNIT V MULTI-USER RADIO COMMUNICATION

PART-A

1. Define Advanced Mobile Phone Services (AMPS).
2. What is meant by super audio tone (SAT)?
3. What is meant by signaling tone?
4. Define GSM.
5. What is meant by Telephone services in GSM?
6. Name the different types of GSM services
7. Define Subscriber Identity Module (SIM).
8. Define HLR.
9. Define VLR.
10. Define MSC.

11. What is Bluetooth?
12. What are the three orbits of satellite? Low Earth orbit
13. State Kepler's laws of planetary motion
14. What are the links in satellite communication?
15. Define apogee
16. Define perigee
17. Define Handoff.

PART-B

1. Explain the concept of AMPS. (16)
2. Explain the concept of GSM (16)
3. Explain CDMA in detail (16)
4. Define Handoff and explain its types in detail (16)
5. Explain Satellite Communication in detail. (16)