**Question Bank**

**Subject: Communication principles**

**Class : S.Y.B.Sc(C.S.)**

**5 Marks Que.(Chapter 1)**

1. Draw the block diagram of communication system? Explain the role of each element.
2. Describe synchronous communication compare it with ?Compare it with Asynchronous
3. State limitations of Asynchronous data communication
4. Draw the block diagram and explain elements of communication system also state the relation between channel and signal bandwidth for error free communication.
5. Define s/n ratio channel bandwidth, bit rate, baud rate then signal bandwidth, channel bandwidth.
6. State and explain Nyquist theorem
7. Explain the serial mode of data transmission? State its merit and demerits?
8. Explain the Parallel mode of data transmission? State its merit and demerits?
9. State and explain Shannon’s Theorem

**One Marks Que (Chapter 1)**

1. State various elements of communication system?
2. Give the names of types of communication system?
3. What is synchronous system?
4. Define half duplex communication system?
5. Write the expression for maximum data rate using Shannon’s Theorem
6. Define full duplex Communication system
7. Give the expression for Shannon’s Channel capacity
8. What are the drawbacks of synchronous data communication
9. Give one example of simplex and full duplex communication system
10. State whether paging services and Radar are simplex, half duplex or full duplex
11. State Shannon’s theorem
12. State Nyquist Theorem
13. Why a synchronous transmission is not suitable for communicating a bulk of data.
14. What is baud rate?

 **5 Marks Que (Chapter 2)**

1. Define modulation? Explain the concept of amplitude modulation?
2. What is data modulation with the help wave forms explain the delta modulation
3. Explain the concept of QPSK modem
4. Explain the concept of Pulse Code modulation
5. With the help of phasor diagram? Explain the concept QPSK modulation
6. What is modem? Draw block diagram and explain FSK modem
7. With the help of suitable block diagram and wave forms explain pulse amplitude modulation.
8. Explain PCM concept and PCM system. Also mention any two limitations of PCM
9. Explain AM with respect to definition AM wave forms, frequency spectrum, modulation index, Disadvantages
10. Explain the working of Diode demodulator for an amplitude modulated wave form.
11. What is Keying? What are the principles of ASK & FSK? Draw the output wave forms for sending data 01110101 using ASK?
12. Explain working of Diode modulator with suitable Circuit Diagram?
13. What is the principle of BPSK modem? Draw the output wave forms for sending data 10101110 using BPSK module?
14. Explain the working of QPSK modulator?
15. Draw an explain the functional block diagram of FSK modem
16. What is constellation diagram ? Draw it for QAM how can these technique be use for increasing the speed of data communication?
17. State 5 important differences between AM & FM?
18. Give the classification of modem based on data rates? State modulation technique use for each type?

**1 mark question (Chapter 2)**

1. Define modulation index of amplitude modulation
2. Define base band communication
3. What is the function of demodulator
4. Give any two drawbacks of amplitude modulation
5. Name the type of modulation used in high speed modem’s
6. Representation the case of over modulation in amplitude modulation with suitable wave form
7. Draw the phasor diagram of QPSK
8. Give any two advantages of FM and AM
9. Which type of modulation technique is used in medium speed modem
10. Explain the term quantization with respect to PCM
11. Which type of modulation technique is used in low speed modem
12. What is the need of modulation
13. What is ASK
14. For a noiseless channel find the channel capacity for a channel bandwidth of 3.1 KHZ
15. Give any two application of AM
16. State the relationship between RC time constant and periodic time of carrier for a diode de-modulator.
17. What is over modulation?
18. A telephone channel has bandwidth from 300HZ to 3KHZ .What is the minimum sampling rate requires for it.

 **Chapter 3(5 marks que)**

1. Compare TDM and FDM
2. What is TDM? Differentiate between synchronous and asynchronous TDM
3. What is the need guard band in FDM
4. Explain the concept of FDM for broadband communication.
5. Explain the grouping the concept in frequency multiplexing and what is the use of FDM in telephony system
6. Explain how TDM can be use for sending several base band channels on a single transmission line
7. What is FDM explain the formation of 12 channel group
8. Write a note on code division multiplexing and space division multiplexing
9. Explain TDMA
10. Compare FDMA,TDMA & CDMA
11. Explain CDMA
12. State and explain the types of spread spectrum techniques
13. Explain the principle of SDMA

 **1 mark QUE**

1. What is guard band
2. Name various multiple access method
3. What is Spread spectrum technique
4. State features of FDMA
5. State advantages and disadvantages of TDMA
6. State the full forms FDM & MDF

**5 marks que(Chapter 4)**

1. Explain the concept of antenna
2. Write in detail about parameters of antenna
3. Explain in detail multi element antenna
4. Explain micro strip antenna
5. With the proper block diagram explain simple network model
6. Explain ADHOC network
7. List the different protocols used in communication system and explain RFID
8. What is an antenna array give its significance

 **1 marks Que.**

1. What is an antenna?
2. Define radiation pattern of an antenna
3. Define directive gain
4. Define power gain
5. Define directivity
6. Define radiation resistance
7. Define beam width of an antenna
8. Define antenna impedance
9. Give the application of yagi antenna
10. What is antenna reciprocity?
11. Define isotropic antenna
12. Define antenna array
13. What is major lobe?
14. How does the signal coming from back side of yagi antenna suppressed?
15. How the directors and reflectors make the yagi antenna more directional?
16. What is radio paging?
17. What is based station?

**5marks (chapter 5)**

1. State and explain advantages of mobile communication
2. Define the following terms with respect to mobile communication
3. Based Station
4. Control channel
5. Forward channel
6. Voice channel
7. Explain how cellular telephone call is made?
8. Draw and explain the basic block diagram of cellular unit.
9. Describe the GSM system interface with neat diagram
10. Describe the GSM System architecture with block diagram
11. Write a detail note on Bluetooth.
12. Explain the call routing in mobile phone system.
13. Explain the basic principle of cellular system.
14. Explain the concept of cell splitting
15. Explain the handoff procedure in cellular system
16. Explain the principle of GPRS system
17. Explain the architecture of Bluetooth
18. Explain the RTS-CTS protocol with example.

 **1 mark questions:**

1. What is MTSO?
2. Define cell and cluster
3. State the frequencies use in cellular telephony
4. What is frequency reuse?
5. What is cell splitting?
6. Define GSM
7. What is CDMA?
8. State the advantages and disadvantages of CDMA.
9. State the functions and advantages of MTSO
10. Define piconet and scatter nets.
11. Give the applications of Bluetooth
12. What is mobile communication?
13. What are the limitations of conventional mobile telephone system
14. List the salient features of GSM
15. What are the advantages of Handover
16. List the characteristics of GSM standards.
17. What is RTS- CTS protocol?
18. What is GPRS, write its salient features?