

- iv) RZ stands for
- a) Return to zero
 - b) Return to zero position
 - c) Return to zero multipolar
 - d) None of these.
- v) Which of the following can be determined from a frequency domain graph of a signal ?
- a) Bandwidth
 - b) Phase
 - c) Power
 - d) None of these.
- vi) Power gain can be represented as
- a) $20 \log_2 (P_2/P_1)$
 - b) $10 \log_2 (P_2/P_1)$
 - c) $\log_2 (P_2/P_1)$
 - d) none of these.
- vii) ASK, PSK, FSK are the examples of
- a) Digital to digital
 - b) Digital to analog
 - c) Analog to analog
 - d) None of these.
- viii) Synchronous transmission does not have
- a) a start bit
 - b) a stop bit
 - c) gaps between bits
 - d) none of these.
- ix) IEEE stands for
- a) Institute of electrical and electronic engineers
 - b) Institute of electronics and electrical engineers
 - c) International electrical and electronic engineers association.
 - d) None of these.
- x) Most popular cable used in communication nowadays is
- a) Coaxial cable
 - b) Twisted pair cable
 - c) Fibre optic cable
 - d) None of these.

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GROUP - B

(Short Answer Type Questions)

Answer any *three* of the following. $3 \times 5 = 15$

2. a) How does graded index multimode optical fibre transmission minimize data loss ? 3
- b) What is Burst Error ? 2
3. Given a 10 bit sequence 1011001001 and a divisor of 1011, find the CRC.
4. a) What is the significance of twisting in a twisted pair cable ? 3
- b) What is Trellis coding ? 2
5. What are the advantages of IPv6 over IPv4 ?
6. What are the functions of Gateway and Repeater ? 2 + 3

GROUP - C

(Long Answer Type Questions)

Answer any *three* of the following. $3 \times 15 = 45$

7. a) Draw the digital signal encoding format for NRZI, NRZL, RZ Manchester Code and Differential codings for the digital signal 01001100011 and also write down the procedure in brief. 10
- b) In QPSK modulation data rate is 9600 bps. Calculate baud rate. 2
- c) An analog signal carries 4 bits in each signal element. If 1000 signal elements are sent per second, find baud rate and bit rate. 3
8. a) Why do we need use of layered protocol ? 5
- b) Give three differences between OSI reference model and TCP/IP model. 4

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- c) The bit pattern 01011001 is to be transmitted using the following techniques :
- i) ASK
 - ii) FSK
 - iii) PSK 6
9. a) Write down the names of different multiple access protocols. Compare FDMA, TDMA and CDMA. 3 + 5
- b) State Nyquist theorem. 2
- c) Write a short note on CSMA/CD. 5
10. a) Draw the block diagram of stop-and-wait ARQ protocol and explain it. 3 + 3
- b) Explain the Sliding window. What is Piggy backing ? 6 + 3
11. a) What do you mean by congestion ? Why does congestion occur in the network layer ? 5
- b) Describe the concept of Leaky Bucket for controlling congestion. 6
- c) Explain the terms 'Bridging' and 'Routing'. 4
12. Write short notes on any *three* of the following : 3 × 5
- a) Safe IP
 - b) Public key and private key
 - c) Circuit switched and packet switched networks
 - d) 802.3 LAN
 - e) X.25 protocol.