Time: 2½ hrs.   Marks:75

Note:
1. All questions are compulsory with internal choice.
2. Draw neat diagrams wherever necessary.
3. Figures to the right indicate full marks.

Q.1   Answer the following (any Three)   (15)
(a) Explain data representation in detail.
(b) Explain BUS topology and MESH topology.
(c) Explain what is OSI reference model also explain Data link layer and Session layer.
(d) Explain Transmission impairments with it's causes.
(e) Explain Data flow with its types.
(f) Explain components of data communication along with diagram.

Q.2   Answer the following (any Three)   (15)
(a) Explain Switch and Router with diagram.
(b) If 7-bit hamming code received by a receiver is 1011011 assuming the even parity state whether the received code is correct or wrong. If wrong locate the bit in error.
(c) Generate the CRC code for the data word of 110010101 the divisor is 10101.
(d) Explain what is flow control? Describe stop and wait protocol.
(e) Explain Go-back-N-ARQ .
(f) Explain Digital signal with its characteristics.

Q.3   Answer the following (any Three)   (15)
(a) Draw and explain IPv6 header format.
(b) Find the error if any in the following IPv4 addresses.
   a) 151.56.045.78   b) 221.34.7.8.20   c) 75.45.505.14   d) 1101010010.23.14.67
(c) Explain FDM and TDM.
(d) Find the class of following dotted decimal IPv4 addresses.
   a) 168.168.1.0   b) 10.10.200.6   c) 255.15.165.1   d) 230.10.65.30
(e) Draw IPv4 header format.
(f) Differentiate between IPv4 and IPv6.

Q.4   Answer the following (any Three)   (15)
(a) Draw header format of TCP and give it's features.
(b) Draw flow diagram of 3 way handshaking method of TCP.
(c) Write a note on Wi-Fi.
(d) Write a note on Bluetooth.
(e) Compare Bluetooth and Wi-Fi.
(f) Draw header format of UDP and write it's features.

Q.5   Answer the following (any Three)   (15)
(a) Explain HTTP protocol.
(b) Explain ICMP protocol.
(c) Compare UDP & TCP.
(d) Explain File Transfer Protocol.
(e) Explain SMTP and POP protocol.
(f) Explain with header format ARP protocol.

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