Krishna Kanta Handiqui State Open University
MCA 4th Sem. Examination, 2016
Data Communication and Computer Networks

Time : 3 Hrs. *Full Marks : 80*

1. Answer *any five* from the following questions : 2×5=10
   (a) What is the significance of framing ?
   (b) What is frequency hopping ? What are the factors by which bandwidth is affected ?
   (c) What is the function of ARP ?
   (d) Name the six flag bits in TCP header.
   (e) Why is DNS used for Internet services ?
   (f) What is DTE and DCE ? Give suitable examples.

2. Answer *any three* from the following questions : 4×3=12
   (a) Discuss the advantages and disadvantages of peer-to-peer network ?
   (b) Why is Hamming code needed in error detection and correction ?
   (c) What are the significant characteristics of Broadband and Baseband LANs ?
   (d) What do you understand by channel bandwidth and throughput ? Discuss using a suitable example.

3. Answer *any three* from the following questions : 6×3=18
   (a) What is virtual LANs ? What are its characteristics ?
   (b) Why is switching required ? What are the different types of switching techniques ? Discuss any two of them.

(c) What are the two features of User Datagram Protocol ? When should we use UDP instead of TCP ? Give reasons.

(d) Discuss briefly the following :

Telnet, FTP and SMTP.

4. Answer *any four* from the following questions : 10×4=40

(a) What are the goals of layered protocol ? Briefly discuss the responsibilities of each layer of ISO-OSI model ?

(b) Explain the various transmission modes. Also discuss the role of router and gateway when data signals travel through the medium.

(c) What do you understand by flow and error control ? Explain stop and wait ARQ which is processed in data link protocol.

(d) What is Dotted Decimal Notation ? How are IPv4 addresses classified ? Discuss briefly the five address classes of IPv4 address.

(e) What are the layers of TCP protocol ? Explain the TCP Three-Way-Handshake mechanism.

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