Printed Pages: 02   **Sub Code: EEC 809**

Paper Id: **131240**   Roll No. [   ]

B TECH
(SEM–VIII) THEORY EXAMINATION 2018-19
DATA COMMUNICATION NETWORKS

Time: 3 Hours   *Max. Marks: 100*

Note: Be precise in your answer. In case of numerical problem assume data wherever not provided.

SECTION-A

1. **Attempt all of the following questions:**   **(2×10=20)**

(a) How TCP differ from sliding window protocol?

(b) What is Layered Architecture?

(c) What is Line coding?

(d) What is Packet Switching?

(e) Define Multiplexing.

(f) What are the different layers of OSI reference Model?

(g) Write different components of Communication System.

(h) What are advantages of Distributed processing?

(i) What are Deterministic and Stochastic Signals?

(j) How is a Hub different from a Bridge?

SECTION-B

2. **Attempt any three of the following questions:**   **(3×10=30)**

(a) Define and explain the various frame type in HDLC. Design a three stage 200 X switch with K=4 nad n=20**.**

(b) How long does it take a packet of length 1,000 bytes to propagate over a link of distance 2,500 km propagation speed 2.5*108 m/s, and transmission rate 2 Mbps? More generally, how does it take a packet of length L to propagate over a link of distance d' propagation speed s and transmission rate R bps? Does this delay depend on packet length? Does this delay depend on transmission rate? Explain.

(c) What are different types of error detection methods? Explain the CRC error detection technique using generator polynomial X^4+X^3+1 and Data 11100011.

(d) What is CSMA/CD? Consider building a CSMA/CD network running at 1Gbps over a 1 km cable with no repeaters. The signal speed in the cable is 2,00,000 km/sec. What is the minimum frame size?

(e) Discuss Ethernet in detail.

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SECTION – C

3. **Attempt any one of following questions:**   **(1×10=10)**
(a) Describe the specification and characteristics and application of the following devices: (i) Routers, (ii) Bridge, (iii) Repeaters, (iv) Switches.

Also show diagrammatically where are these devices are placed in a network setup.

(b) Explain the differences and similarities with specific applications of Packet switching and circuit switching.

4. **Attempt any one of following questions:**   **(1×10=10)**

(a) Discuss the following:-
   (i) WDM Access protocols
   (ii) WLAN protocols
   (iii) Limited-Contention protocols
(b) Discuss IEEE Standard 802.3.

5. **Attempt any one of following questions:**   **(1×10=10)**

(a) What do you mean by intradomain and interdomain routing techniques? Explain link state routing.

(b) Discuss HDLC protocol in detail.

6. **Attempt any one of following questions:**   **(1×10=10)**

(a) What is Cryptography? Differentiate between symmetric key cryptography and asymmetric key cryptography

(b) What do you understand by ATM? Explain cell header format in ATM and briefly describe the four services classes of ATM.

7. **Attempt any one of following questions:**   **(1×10=10)**

(a) What is the use of bit stuffing in data? Explain the features of pipelining with suitable diagram.

(b) What are the main characteristics of DNS? Explain the functions of HTTP.

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