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**ANNA UNIVERSITY :: CHENNAI – 600 025**

**MODEL QUESTION PAPER**

**VI SEMESTER**

**B.E. ELECTRONICS AND COMMUNICATION ENGINEERING**

**EC343 - COMPUTER COMMUNICATION & NETWORKS**

**Time: Three Hours**

**Maximum: 100 Marks**

**Answer All Questions**

**PART – A (10 x 2 = 20 Marks)**

1. Explain the difference between asynchronous and synchronous transmission modes.
2. What are the error correcting capabilities of CRC – 16?
3. In what situation would you recommend statistical multiplexing? Explain.
4. Which of the ISO layer handles each of the following:
  - (a) Breaking the transmitted bit streams into frames.
  - (b) Routing a packet from one node to another.
  - (c) Providing synchronization points and
  - (d) Encryption and decryption.
5. Illustrate the operation of a bridge between two LAN segments and give its functions.
6. Differentiate between connectionless and connection oriented services in Data networks.
7. Describe the merits and demerits of flooding technique in data networks.
8. When do you apply bit stuffing? If a bit string 011100111111101 is subjected to bit stuffing. What would be the output string?
9. List the transmission used in data networks and compare them.
10. What do you understand by M/D/n queue? Explain.

**PART – B (5 x 16 = 80 Marks)**

11. Explain the ISO-OSI seven layer network architecture giving the functions of each layer.
- 12.a) Compare and explain the following IEEE-802 MAC layer protocols.  
(i) CSMA/CD bus (ii) Token ring and (iii) Token bus

**(OR)**

- 12.b) What do you understand by RS232C/V.24 data interface? Explain the handshaking procedure of the above interface?
- 13.a) Derive the expressions for link utilization of  
(i) Stop and wait and (ii) Sliding window ARQ protocols.

**(OR)**

- 13.b) Explain Transmission Control Protocol (TCP) by giving the functions of each header in the frame format. Also compare M/G/1 queuing system.
- 14.a) For M/M/1 queuing systems, obtain the expressions for total waiting time and the total number of customers. Also explain M/G/1 queuing system.

**(OR)**

- 14.b) Distinguish between random and fixed media access protocols. Derive expressions for throughput for pure and slotted ALOHA protocols and explain.
- 15.a) Give the characteristics and elements of routing techniques for packet switching networks and explain. Also explain random routing technique.

**(OR)**

- 15.b) Write notes on the following:  
(i) Public Key Cryptography (ii) Priority queuing systems.

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