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**Question Paper Code : 80457**

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2021.

Sixth Semester

Electronics and Communication Engineering

EC 2352/EC 62/10144 BME 41/10144 EC 603 — COMPUTER NETWORKS

(Common to Seventh Semester Biomedical Engineering)

(Regulations 2008/2010)

(Also Common to PTEC 2352 - Computer Networks for B.E. (Part-Time) Fifth Semester – Electronics and Communication Engineering - Regulations 2009)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is the role of DSL modem?
2. What is a protocol?
3. Define the characteristics of frame relay.
4. What are the advantages of Bluetooth?
5. Define ICMP.
6. Write the keys for understanding the distance vector routing.
7. Suppose a TCP connection is transferring a file of 5000 bytes. The first byte is numbered 10,001. What are the sequence numbers for each segment if data are sent in five segments, each carrying 1000 bytes?
8. What is SYN flooding attack?
9. What kinds of file types can FTP transfer?
10. Mention the significance of the digital signature.

PART B — (5 × 16 = 80 marks)

11. (a) Explain the layered architecture of a network and explain their roles in detail. (16)

Or

- (b) (i) Explain the various classes of IP addressing. (12)  
(ii) State the need for an IP address. (4)
12. (a) Describe the architecture of HDLC with relevant sketch. (16)

Or

- (b) (i) A pure ALOHA network transmits 200-bits frames on a shared channel of 200 kbps. What is the throughput if the system produces (1) 1000 fps, (2) 500 fps and (3) 250 fps. (12)  
(ii) Write short note on Token Passing. (4)
13. (a) Write short notes on ICMP, ARP, RARP and IGMP.

Or

- (b) (i) If a router has 15 entries in its group table, should it send 15 different queries periodically or just one? Explain your answer. (6)  
(ii) An organization is granted the block 130.56.0.0/16. The administrator wants to create 1024 subnets. Find the subnet mask, number of addresses in each subnet, first and last addresses in subnet 1 and first and last addresses in subnet 1024. (10)
14. (a) Explain the congestion control technique in TCP. (16)

Or

- (b) Explain the segment formats for TCP and UDP. (16)
15. (a) Explain in detail about symmetric key algorithms with neat sketch. (16)

Or

- (b) Explain in detail about communication security and authentication with neat example. (16)