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Roll No.

PAPER ID—11132

B. Tech. EXAMINATION, 2024

(Fifth Semester)

COMPUTER SCIENCE AND ENGINEERING

(ARTIFICIAL INTELLIGENCE)

Computer Networks

Time : 3 Hours

Maximum Marks : 70

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting *one* question from each Section. Q. No. 1 is compulsory. All questions carry equal marks.

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P.T.O.

1. Write the following :

7×2=14

- (a) Differentiate between connection oriented and connectionless oriented services.
- (b) Differentiate between logical address and physical address.
- (c) What are the range of IPv4 addresses in class A, B, C and D ?
- (d) Explain the term Internet in detail.
- (e) What are the different types of attack in network security ?
- (f) What is IPv6 addressing ?
- (g) What do you mean by modulation ?

Section A

- 2. (a) What is packet switching and write down the advantages of packet switching over circuit switching. 7
- (b) Explain in detail about OSI reference model in detail. 7

3. (a) What is network topology ? Explain the different network topologies with suitable examples. 7
- (b) What is meant by data communication ? What are the components of data communication ? 7

Section B

4. (a) Discuss pure aloha and slotted aloha. How CSMA/CD protocol is used to avoid the collision in network ? 7
- (b) Describe classful and classless addressing in detail. 7
5. (a) Explain various types of sliding window protocols at data link layer and illustrate the working of each with suitable example. 7
- (b) Explain the working of ICMPV4, ARP and RARP. 7

Section C

6. Compare UDP and TCP protocol giving their frame structure. 14
7. (a) Differentiate between link state and distance vector routing. 7
- (b) What do you mean by Routing ? Explain the terms repeater, hub, switch. 7

Section D

8. (a) How does congestion control works in computer networks ? 7
- (b) Explain in detail about firewalls. 7
9. Write short notes on the following : 14
- (a) Symmetric and asymmetric key ciphers
- (b) HTTP
- (c) FTP.