Sem V (C Scheme) R-2019 "AI & DS" Nov Dec' 2022

Time: 3 hours

Max. Marks: 80

N.B. (1) Question one is Compulsory.
(2) Attempt any 3 questions out of the remaining.
(3) Assume suitable data if required.

Q.1 a) Compare and contrast Circuit switched network and Packet switched network — 05

b) Describe the different guided transmission medias used in the network — 05

c) What is Channel Allocation problem? explain in short pure and slotted ALOHA — 05

d) Obtain the 4-bit CRC code for the data bit sequence 10011011100 using the polynomial $x^4 + x^2 + 1$ — 05

Q2 a) Describe in detail OSI reference model with a neat diagram — 10

b) What is Channel allocation problem? Explain CSMA/CD protocol. A network with CSMA/CD has 10 Mbps bandwidth and 25.6ms maximum propagation delay. What is the minimum frame size? — 10

Q3 a) Compare and contrast between
i) IPv4 vs IPv6
ii) Connection oriented protocol vs Connectionless protocol — 10

b) Explain in brief Cisco PPDIOO Network design Methodology — 10

Q4 a) What is SDN? Explain SDN architecture along with Operations of control and data planes — 10

b) What is Routing? What are desirable characteristics of routing algorithms? Explain distance vector routing with suitable example — 10

Q5 a) Elaborate the architectures of NOX and POX controllers of SDN with their comparison — 10

b) Elaborate Cisco SONA Architecture in detail — 10

Q.6 Write a short note on
a) Sliding Window Protocol — 05
b) OpenFlow messages — 05
c) NAT — 05
d) DHCP — 05

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