1T01875 - T.E. Computer Science & Enginering (Artificial Intelligence & Machine Learning) (Choice Based) (R-2019-20'C'
Scheme) SEMESTER - V / 48891 - Computer Network

QP CODE:10014058 DATE: 22/11/2022

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.**

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|---|---|---|---|
| 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 |
| Q 2 | 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 |
| Q 3 | a) | Compare and contrast between<br> i) IPv4 vs IPv6<br> ii) Connection oriented protocol vs Connectionless protocol | 10 |
| | b) | Explain in brief Cisco PPDIOO Network design Methodology | 10 |
| Q 4 | 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 |
| Q 5 | 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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