03-06-2026 TE CSE-AIML SEM-V C SCHEME CN QP CODE:20011659

(3 hours) **Total Marks: 80**

N.B. 1. Question **No. 1** is compulsory
2. Attempt any **three** questions from remaining five questions
3. Assume suitable data if **necessary** and justify the assumptions
4. Figures to the **right** indicate full marks

Q1		**Solve any Four out of Five**	**20**
	A	Enlist and explain in brief different design issues in data link layer.	**05**
	B	Describe the different guided transmission media used in the network.	**05**
	C	Compare and contrast Circuit switched network and Packet switched network.	**05**
	D	4-bit data bits with binary value 1011 is to be encoded using even parity Hamming code. What is the binary value after encoding?	**05**
	E	Explain different classes of IPv4 addressing technique.	**05**
Q2	A	Compare layers of OSI model and TCP/IP model with a neat diagram.	**10**
	B	Explain IPv4 header with a neat diagram.	**10**
Q3	A	What is Routing? What are desirable characteristics of routing algorithms? Explain distance vector routing with suitable example.	**10**
	B	Write steps to compute CRC code. Obtain the 4-bit CRC code for the data bit sequence 10011011100 using the polynomial $x^4 + x^2 + 1$	**10**
Q4	A	Elaborate the architecture of NoX and PoX controller of SDN with their comparison.	**10**
	B	What is channel allocation problem? Explain Pure ALOHA and Slotted ALOHA in detail.	**10**
Q5	A	Explain in brief Cisco PPDIOO network design methodology.	**10**
	B	Explain three-way handshaking technique in TCP.	**10**
Q6		Write short notes on:	**20**
	A	Cisco SONA Architecture	
	B	File Transfer Protocol	
	C	Sliding Window Protocol	
	D	TCP Timers	

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