Code No.: R22AI601PC

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CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS
III–B.TECH–II–Semester End Examinations (Supply) - December- 2025
COMPUTER NETWORKS
(CSM)

[Time: 3 Hours] **[Max. Marks: 60]**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 10 marks. Answer all questions in Part A.
Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART-A **(10 Marks)**

1. a)	In the TCP/IP protocol suite, what are the identical objects at the sender and the receiver sites when we think about the logical connection at the application layer?	[1M]
b)	Define Error Detection and Correction. Mention the types of errors.	[1M]
c)	What is meant by flow control?	[1M]
d)	What is a sliding window protocol? Where is it used?	[1M]
e)	What are the goals and characteristics of routing algorithms?	[1M]
f)	List the design issues of network layer.	[1M]
g)	What is the function of Transport Layer?	[1M]
h)	The following is a dump of a UDP header in hexadecimal format. CB84000D001C001C, What is the destination port number?	[1M]]
i)	Write short note on WWW.	[1M]
j)	What is the purpose of DNS?	[1M]

PART-B **(50 Marks)**

2.	Make a comparison between the TCP/IP and OSI Models.	[10M]
	OR	
3.a)	Explain the original ARPANET design.	[5M]
b)	With neat sketch explain twisted pair cables, connectors of twisted pair cables.	[5M]
4.	A slotted ALOHA network transmits 200-bit frames using a shared channel with a 200-kbps bandwidth. Find the throughput if the system (all stations together) produces i. 1000 frames per second. ii. 500 frames per second. iii. 250 frames per second	[10M]
	OR	
5.	Make a comparison of the channel utilization versus load for various random access protocols.	[10M]
6.a)	Explain the quality of service.	[5M]
b)	Discuss the congestion control in virtual circuit subnets.	[5M]
	OR	
7.	With an example explain the Flooding, Hierarchical routing algorithms used in computer networks.	[10M]
8.a)	Compare and contrast the two TCP/IP transport protocols: TCP and UDP, in terms of de multiplexing, reliability and flow control.	[5M]
b)	Explain the principles of inter-networking.	[5M]
	OR	
9.	Explain the various fields of TCP header with the help of a neat diagram.	[10M]

10. Write a short note on the following; [10M]
i) SNMP
ii) HTTP

OR

11. Explain the e-mail architecture and services. [10M]

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