Total number of printed pages: **1** **PG/1st/PCSE201**

2023

Advanced Computer Networks

Full Marks : 100

Time : Three hours

The figures in the margin indicate full marks for the questions.

*Answer **any five** questions.*

1.	a)	Explain the concept of Quality of Service (QoS) and its importance in advanced computer networks.	10
	b)	Explain the concept of CSMA/CD and CSMA/CA and its importance in the advanced computer networks..	10
2.	a)	Discuss the different types of routing protocols used in advanced computer networks. Explain the working principle of OSPF with an example.	15
	b)	How is 5G different from 4G communication ?	5
3.	a)	What are the concepts of hidden terminal and exposed terminal in wireless communication, and how do they impact the performance of a wireless network? What is the possible solution ?	15
	b)	What are different addresses used in the computer network? Discuss their roles?	5
4.	a)	What are the responsibilities of the IP layer? Discuss all in detail.	10
	b)	Suppose you are assigned the IP address block 172.16.0.0/16. Create eight subnetworks of equal size from this block. Calculate the subnet addresses and subnet masks for each subnet.	10
5.	a)	If you have an IP address of 10.0.0.50/28, what is the first address and last address in this subnet?	15
	b)	If you have a subnet mask of 255.255.255.224 (/27), what is the number of usable IP addresses in this subnet?	05
6.		Compare and contrast the User Datagram Protocol (UDP) and Transmission Control Protocol (TCP) in terms of their features, reliability, and use cases.	20
7.		Write short notes on (i) SDN (ii) NDN (iii) CDN (iv) IoT	20