

IMSC (CS) (Old) Sem.-5 Examination
Advanced Networking
December-2025

Time : 3.00 Hours]

[Max.Marks :70

Instructions:

- Write both the Sections in the separate answer book.
- Both Sections having equal weightage.
- Draw Diagrams wherever necessary.
- Make Assumptions wherever necessary.

SECTION – I

- Q-1 Do as directed (any 5): [15]
- a. Write a short note on Networking Topologies.
 - b. State any 3 networking devices and its uses
 - c. Explain the following networking commands : ping, arp, ipconfig
 - d. Give the difference between IP address and MAC address
 - e. Give the difference between UDP and TCP
 - f. Write a brief note on wireless technologies

- Q-2 Attempt the following : [10]
- a. Calculate the subnet mask for Class B address with 16 subnets.
 - b. Discuss any 5 flags used in TCP packet.

OR

- Q-2 Attempt the following :
- a. Discuss the role of Network Layer of OSI Model
 - b. Discuss any 5 fields of IP Header

- Q-3 Attempt the following : [10]
- a. Write a short note on Networking Media (cables)
 - b. Discuss types of wireless technologies with example

OR

- Q-3 Attempt the following:
- a. Write a short note on ICMP
 - b. Discuss functioning of DNS

SECTION – II

- Q-4 Do as directed (any 5): [15]
- a. Discuss the main components of Ethernet Frame.
 - b. Discuss the Confidentiality, Integrity & Availability of CIA triad.
 - c. State the role of port no. in networking giving few examples of well known port numbers.
 - d. Explain FDMA, TDMA and CDMA in brief
 - e. Discuss how satellites are used in communications.
 - f. State the role of following protocols in brief:
SMTP, TELNET, DHCP

- Q-5 Attempt the following : [10]
- a. Write a short note on CIDR notation. Discuss how first IP, last IP and total no. of IP addresses can be estimated with an example.
 - b. Write a short note on security measures for Networks

OR

- Q-5 Attempt the following :
- a. Write a brief note on working of Wireshark software and its utility.
 - b. Discuss error handling in TCP with reference to timeout and retransmission.

- Q-6 Attempt the following : [10]
- a. Write a short note on Classful IP Addressing
 - b. Discuss Email protocols in detail.

OR

- Q-6 Attempt the following:
- a. Discuss CSMA/CD in detail
 - b. Discuss congestion control technique in TCP