

PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)

MSc DEGREE EXAMINATION DECEMBER 2023  
(Second Semester)

Branch – COMPUTER SCIENCE

TCP / IP PROTOCOL SUITE

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

- 1 Which layer in the TCP/IP stack is equivalent to the Transport layer of the OSI model?  
(i) Application (ii) Host to Host  
(iii) Internet (iv) Network Access
- 2 Which of the following protocols uses both TCP and UDP?  
(i) FTP (ii) SMTP  
(iii) Telnet (iv) DNS
- 3 During error reporting, ICMP always reports error messages to \_\_\_\_\_  
(i) Destination (ii) Source  
(iii) Next Router (iv) Previous Router
- 4 How many bytes are reserved for target hardware address in ARP message format?  
(i) 4 bytes (ii) 6 bytes  
(iii) 8 bytes (iv) 16 bytes
- 5 The length of Port address in TCP/IP is \_\_\_\_\_  
(i) 4 Bit Long (ii) 16 Bit Long  
(iii) 32 Bit Long (iv) 8 Bit Long

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

- 6 a Identify the three different types of address in Network and give an example.  
OR  
b Elucidate the architecture of ARCNET.
- 7 a Explain the Unicast, Multicast and Broadcast with example.  
OR  
b Compare static and dynamic routing process.
- 8 a Brief about the IGMP package with suitable diagram.  
OR  
b Describe ICMP messages and functions.
- 9 a Write a short note on ARP Packet format.  
OR  
b Illustrate the RARP packet format.
- 10 a Explain the UDP package format with suitable diagram.  
OR  
b Analyze the Stream Control Transmission Protocol packet format.

Cont...

**SECTION -C (30 Marks)**

Answer **ALL** questions

**ALL** questions carry **EQUAL** Marks

(5 x 6 = 30)

- 11 a Elaborate on the OSL model and its functions with an example.  
OR  
b Describe different types of Ethernet connections used in networking.
- 12 a Discuss multicast routing of source-based tree and group shared tree approaches with suitable diagram.  
OR  
b Discuss the concept of the MBONE (Multicast Backbone) and its significance in supporting multicast applications and services.
- 13 a Discuss about the IGMP operation with suitable diagram.  
OR  
b Explain the types of ICMP messages and their purposes in network communication.
- 14 a Discuss the operation of ARP over ATM (Asynchronous Transfer Mode) networks.  
OR  
b Summarize the ARP package components with example in detail.
- 15 a Justify the flow control and error control techniques in TCP connection with neat diagram.  
OR  
b Describe the services of the Stream Control Transmission Protocol (SCTP).

**Z-Z-Z**

**END**