

=====

Third Year Computer Networks Question Paper

=====

SECTION 1: MULTIPLE CHOICE QUESTIONS (10 Questions, 1 Marks each)

Bloom's Taxonomy Level: 1

Topic: Application Layer

Subtopic: SMTP (Overview, Message Formats)

Q1: Which of the following port numbers is the standard port used by SMTP for sending email messages?

- (a) 25
- (b) 80
- (c) 110
- (d) 143 (1 Marks)

Q2: In an SMTP message, which header field specifies the email address of the sender?

- (a) To:
- (b) From:
- (c) Subject:
- (d) Date: (1 Marks)

Q3: What does the `DATA` command in SMTP signify?

- (a) Start of the email message body.
- (b) End of the email message body.
- (c) Initiation of the SMTP connection.
- (d) Termination of the SMTP connection. (1 Marks)

Subtopic: Telnet, SSH

Q4: Which of the following protocols provides a secure, encrypted connection for remote login and other network services?

- a) Telnet
- b) SSH
- c) FTP

d) HTTP (1 Marks)

Q5: Telnet transmits data in which form?

a) Encrypted

b) Plain text

c) Compressed

d) Hashed (1 Marks)

Topic: Transport Layer

Subtopic: TCP and UDP

Q6: **Question 1 (1 mark):** (1 Marks)

Q7: Which of the following transport layer protocols provides connection-oriented communication?
(1 Marks)

Subtopic: Relationship Between Transport and Network Layer

[Error generating questions: 429 Resource has been exhausted (e.g. check quota).]

Subtopic: Multiplexing and Demultiplexing

Q8: In the transport layer, the process of combining data segments from multiple applications on a sending host into a single stream of segments for transmission over the network is known as:

a) Demultiplexing

b) Multiplexing

c) Encapsulation

d) Decapsulation (1 Marks)

SECTION 2: DESCRIPTIVE (10 Questions, 2 Marks each)

Bloom's Taxonomy Level: 2

Topic: Application Layer

Subtopic: SMTP (Overview, Message Formats)

Q9: Describe the general structure of an SMTP email message, clearly differentiating between the header and the body sections and providing two examples of typical header fields. (2 Marks)

Q10: Explain the role of the MAIL FROM and RCPT TO commands in the SMTP communication process, highlighting how they contribute to email routing and delivery. (2 Marks)

Q11: Outline the key differences between the SMTP commands used for initiating and terminating

an email transmission session, and explain how these commands ensure reliable delivery. (2 Marks)

Subtopic: Telnet, SSH

Q12: Briefly explain the primary difference between Telnet and SSH in terms of security, and how this difference impacts their practical application in managing network devices. (2 marks) (2 Marks)

Q13: Describe two key functionalities offered by both Telnet and SSH, and explain why these functionalities are important for remote administration of computer systems. (2 marks) (2 Marks)

Topic: Transport Layer

Subtopic: TCP and UDP

[Error generating questions: 429 Resource has been exhausted (e.g. check quota).]

Subtopic: Relationship Between Transport and Network Layer

Q14: Explain how the Transport Layer utilizes the services provided by the Network Layer to ensure reliable end-to-end communication between two applications. (2 marks) (2 Marks)

Q15: Describe the key differences in addressing schemes used by the Network Layer and the Transport Layer, and explain how these differences contribute to the overall functionality of the network communication model. (2 marks) (2 Marks)

Subtopic: Multiplexing and Demultiplexing

Q16: Explain how multiplexing and demultiplexing processes at the transport layer enable multiple applications on a host to share a single network connection, clearly differentiating between the roles of source and destination port numbers in these processes. (2 Marks)