23ITU525

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2025
(Fifth Semester)

Branch – **INFORMATION TECHNOLOGY**

COMPUTER NETWORKS

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 of the OSI model is responsible for data encapsulation and addressing?
   (i) Physical layer (ii) Data Link layer
   (iii) Network layer (iv) Transport layer

2. What is the primary purpose of the Data Link Layer in the OSI model?
   (i) To route data packets between different networks
   (ii) To provide error detection and correction in data frames
   (iii) To encrypt data for secure transmission
   (iv) To manage the physical connection between devices

3. Which is the main goal of congestion control algorithms in networking?
   (i) To prevent data loss due to network failures
   (ii) To manage the timing of data transmission
   (iii) To avoid network congestion and ensure efficient data flow
   (iv) To encrypt data for secure transmission

4. Which of the following is a key element of transport protocols?
   (i) Error detection and correction (ii) Flow control and congestion control
   (iii) Data encryption (iv) Frame synchronization

5. Which protocol is commonly used to send email over the Internet?
   (i) HTTP (ii) FTP
   (iii) SMTP (iv) IMAP

SECTION - B (15 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** Marks (5 x 3 = 15)

6. a) Explain about the Network Software.
   OR
   b) Discuss the usage of Communication satellites.

7. a) Explain the Data link Protocols in detail.
   OR
   b) Describe about the Channel Allocation Problem in the Medium access layer.

8. a) Explain the Congestion Control Algorithms.
   OR
   b) Write short notes about the Quality of service in the Network Layer.

9. a) Summarize the Elements of Transport Protocols.
   OR
   b) Write short notes about the Performance Issues in TCP.

Cont...

10. a) Explain about the E-Mail Security.

OR

b) Discuss about the WWW in detail.

SECTION -C (30 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks (5 x 6 = 30)

11. a) Explain in detail about the Wireless Transmission.

OR

b) Discuss about the Reference Models in detail.

12. a) Describe the Error Detection and Correction in the data link layer.

OR

b) Explain about the Sliding Window protocols.

13. a) Explain the Internetworking in the Network layer.

OR

b) Discuss about the Routing Algorithms in brief.

14. a) Analyze the TCP in detail.

OR

b) Discuss about the UDP in brief.

15. a) Explain the uses of Multimedia in detail.

OR

b) Classify the DNS.

Z-Z-Z END