AC-235614

M.Sc. (Semester-III)
Examination, Dec.-Jan. (2025-26)

COMPUTER SCIENCE

(Data Communication and Computer Networks)

Time Allowed : Three Hours

Maximum Marks : 70

Note : This question paper is divided into **four** sections. Attempt questions from **all four** sections as per given direction. Distribution of marks is given in each section.

SECTION-A

(Objective Type Questions)

Note : Attempt **any ten** questions. Each question carries **1** mark.   [10×1=10]

1. (i) Which of the following is a networking device?

   (a) Repeater

   (b) Amplifier

   (c) Bridge

   (d) All of the above

   (ii) In mesh topology total no. of ports will be?

   (a) $(n+1)*n$

   (b) $(n-1)^2$

   (c) $(n-1)*n$

   (d) $(n-1)*n^2$

   (iii) Mobile is associated with:

   (a) simplex

   (b) Half Duplex

   (c) Full Duplex

   (d) Both (a) and (b)

   (iv) Heart of OSI model is:

   (a) Network Layer

   (b) Transport Layer

   (c) Data link Layer

   (d) Session Layer

   (v) In OSI model S/W layer consist of:

   (a) Network Layer

   (b) Data link Layer

   (c) Physical Layer

   (d) Application Layer

   (vi) Error detection method is:

   (a) 2D Panty check

   (b) CRC

   (c) Both (a) and (b)

   (d) None of the above

(vii) Which of the following is Address class is multicast?

(a) Class A

(b) Class B

(c) Class C

(d) Class D

(viii) IP v 6 associated with:

(a) 32 bit

(b) 64 bit

(c) 128 bit

(d) 256 bit

(ix) Network Layer is responsible for:

(a) Node to node delivery

(b) End to end delivery

(c) Source to destination delivery

(d) All of the above

(x) VSAT stand for----------?

(xi) Application Layer consist of :

(a) DNS

(b) HTTP

(c) FTP

(d) All of the above

(xii) URL stand for----------

(a) Uniform Resource Location

(b) Unform Resource Locator

(c) Universal Resource Location

(d) Unity Resource Locator

SECTION-B

(Very Short Answer Type Questions)

Note: Attempt **any five** questions. Each question carries **2** marks.(Maximum word limit : 25-30 words): [5×2=10]

2. (i) What is Internet?

(ii) What is security goals in network security?

(iii) Write about key.

(iv) What is ATM?

(v) Write works of bridge in computer networks.

(vi) Define protocol.

(vii) Write need of OSI reference model.

SECTION-C

(Short Answer Type Questions)

Note: Attempt **any five** questions. Each question carries **4** marks.(Maximum word limit : 250 words)   [5×4=20]

3. (i) Write about FOC with its diagram.

(ii) Write difference between connection oriented and connection less networks.

(iii) What is ISDN? Describe its types.

(iv) Write difference between passive attack and active attack in network security.

(v) Explain DNS in details with examples.

(vi) Describe various network topology.

(vii) In CRC checksum method assumes that given frame for transmission is 1101011011 and the generator polynomial is $G(x) = x^4 + x + 1$. After implementing CRC encoder calculate encoded word sent from sender.

SECTION-D

(Essay Type Questions)

Note: Attempt **any three** questions. Each question carries **10** marks.(More than : 500 words)   [3×10=30]

4. (i) Distinguish among LAN, MAN and WAN with its technology, range, transmission speed, area, ownership, maintenance and error rate.

(ii) Explain flow control mechanism in details with diagram.

(iii) Describe CSMA and CSMA/CD in details.

(iv)   What is logical addressing? Explain in details.

(v)   Write about TCP with its header.

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