5. (a) A bit stream 1101011011 is transmitted using the standard CRC method. The generator polynomial is $x^4 + x + 1$. What is the actual bit string transmitted ? (CO5)

(b) Discuss ASK, PSK and FSK with appropriate examples. (CO5)

(c) Differentiate between CSMA/CD and CSMA/CA techniques with appropriate examples. (CO5)

H

Roll No. ....

TMC–203

M. C. A. (SECOND SEMESTER) END SEMESTER EXAMINATION, June, 2023
COMPUTER NETWORKS
Time : Three Hours
Maximum Marks : 100

Note : (i) All questions are compulsory.

(ii) Answer any *two* sub-questions among (a), (b) and (c) in each main question.

(iii) Total marks in each main question are **twenty**.

(iv) Each sub-question carries 10 marks.

1. (a) Differentiate between OSI and TCP/IP model. Explain the function of physical layer and network layer of OSI model.

(CO1)

P. T. O.

(b) What is transmission media ? Why is it used ? Explain different types of transmission media with example of each type.	(CO1)

(c) Discuss how the message is transmitted in telephone networks. Compare and contrast circuit switching, message switching and packet switching.	(CO1)

2. (a) Explain the responsibilities of application layer in detail.	(CO2)

(b) Differentiate between 'client/server' and 'peer to peer' architecture. Draw the diagrams for both the architectures. (CO2)

(c) What are mail access protocols ? Explain any *two* protocols with diagram.	(CO2)

3. (a) Explain the function of transport layers in detail.	(CO3)

(b) What is error control mechanism ? Explain the working of Go back-N protocol with appropriate diagram.	(CO3)

(c) Differentiate between connection oriented and connection less services with suitable example.	(CO3)

4. (a) Differentiate between virtual circuit and datagram networks in detail.	(CO4)

(b) An IP packet of size 1600 bytes passes through network segment before it reaches its destination. The header size of this packet is 30 bytes. The maximum size of an IP packet in intermediate network (MTU) is 1400 bytes. How the IP packet would be fragmented in a router ? Find all the information for each fragment. (CO4)

(c) For the following IP addresses :

(i) 10.15.20.60

(ii) 200.1.10.100

(iii) 10.15.20.60

Identify the class, Network IP Address, Direct broadcast address and limited broadcast address of each IP Address.

	(CO4)