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TMC–203

M. C. A. (SECOND SEMESTER) END SEMESTER EXAMINATION, JULY/AUG. 2022

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 question carries 10 marks.

1. (a) Discuss the switching techniques and differentiate them with neat and clean diagrams. (CO1)

(b) Discus the various types of transmission media with proper diagram. (CO1)

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(b) A bit stream 11001001 is transmitted using the standard CRC method. The generator polynomial is $x^3 + 1$. (CO5)

(i) What is the actual bit string transmitted ?

(ii) Assume the fifth bit from the right is inverted during transmission. How will the receiver detect this error ?

(c) Discuss all the analog modulation techniques in detail with proper diagrams. (CO5)

(c) Discuss the various types of networking devices along with their advantages and disadvantages. (CO1)

2. (a) Explain the cookies and proxy server with neat and clean diagram. (CO2)

(b) Explain the FTP working and HTTP message format with proper diagrams. (CO2)

(c) Discuss the functions of the application layer and the working of the email system. (CO2)

3. (a) Discuss stop and wait, Go Back N, selective Repeat protocols with neat and clean diagrams. (CO3)

(b) Explain the connection management at the transport layer. Also, discuss the 3-way handshaking in TCP with proper diagram. (CO3)

(c) Discus the functions of transport layer. also explain the TCP and UDP header format. (CO3)

4. (a) A IP address is given as 177.190.160.82. Find the following : (CO4)

(i) Number of hosts

(ii) Network IP address

(iii) First host IP address

(iv) Last host IP address

(v) Broadcast IP address

(b) Discuss the IPV4 and IPV6 header format. And explain the methods to move IPv4 and IPv6. (CO4)

(c) Explain the various routing algorithm with neat and proper diagrams. (CO4)

5. (a) Convert the given binary data into digital signals from RZ, NRZ-L and NRZ-I and Manchester and Differential Manchester methods. (CO5)

(i) 11100000

(ii) 10101000