

2021

Computer Science

[M. Sc]

(CBCS)

(M.Sc. First Semester End Examination-2021)

PAPER- CS-103

(Computer Network)

Full Marks: 50

Time: 02 Hrs

The figures in the right hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

Illustrate the answers wherever necessary

Group A

- 1. Answer any FIVE questions of the following: 5x2=10**
- a) What do you mean by classfull and classless addressing.
 - b) How many links are needed for mesh topology explain briefly.
 - c) What is bit rate and baud rate.
 - d) What is the default subnet mask for network 201.0.0.1/26?
How many host can be added in this network.
 - e) What is congestion? What are the factors that affects congestions.
 - f) What is the role of firewall in network security.

(2)

- g) Name some services provided by the application layer in ISO-OSI reference model.
- h) Discuss the concept of redundancy in error detection.

Group B

Answer any FOUR questions of the following: 5x4 = 20

- 2. Using CRC error detection technique find the codeword where the generator polynomial x^4+x+1 and the value of message will be your roll number. 5
- 3. What do you mean by Transmission impairment explain different types of it.
Explain the difference between static and dynamic ip address 3+2
- 4. What do you mean by switched network. Compare between packet and circuit switched network.
- 5. Briefly describe Manchester line coding technique to convert binary data to digital signal with a suitable example.
- 6. a) What is the advantage of QAM over ASK?
b) Draw two different constellation diagrams of a 16-QAM signal with two and three amplitudes levels respectively
- 7. With a suitable example, explain why the size of the sender window must be less than 2^m in Go-Back-N-ARQ.

(3)

Group C

Answer any ONE questions of the following: 10x1 = 10

- 8. a) Given the IP address 18.250.31.14 and the subnet mask 255.240.0.0, determine the subnet address.
b) What do you mean by Network Address Translation(NAT)?
- 9. a) Briefly describe the procedure of CSMA/CD for multiple access.
b) With a suitable example, discuss hierarchical routing algorithm in brief.
