

# CBCS SCHEME

16/17MCA31

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Third Semester MCA Degree Examination, July/August 2021

## Computer Networks

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions.

- 1 a. Explain the uses of computer networks. (10 Marks)  
b. With a neat diagram, describe the functionalities of each layer in the TCP/IP model. (06 Marks)
- 2 a. With a neat diagram, describe the functionalities of each layer in the OSI model. (10 Marks)  
b. Discuss the co-axial cable with a neat diagram and mention its applications. (06 Marks)
- 3 a. Explain analog transmission and digital transmission. Which is the preferred method of transmission? Why? (10 Marks)  
b. Show the NRZ, NRZI and Manchester encoding for the bit pattern 10000101111. (06 Marks)
- 4 a. Discuss different types of transmission impairments. (10 Marks)  
b. Illustrate the Nyquist bandwidth and Shannon capacity formula. (06 Marks)
- 5 a. Discuss with an example distance vector routing algorithm. (10 Marks)  
b. Discuss IPv6 header format with a neat diagram. (06 Marks)
- 6 a. Discuss IPv4 header format with a neat diagram. (10 Marks)  
b. Explain NAT. (06 Marks)
- 7 a. With a neat diagram, explain TCP header format. (10 Marks)  
b. With a neat diagram, explain UDP header format. (06 Marks)
- 8 a. Explain three way handshake with the help of a neat diagram. (10 Marks)  
b. Explain transport service primitives. (06 Marks)
- 9 a. Discuss the architecture of the email system with a neat diagram. (10 Marks)  
b. Explain DNS. (06 Marks)
- 10 a. Explain server forms and web proxies. (10 Marks)  
b. Write a note on SMTP. (06 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.