



**K20P 0553**

Reg. No. : .....

Name : .....

**II Semester M.C.A. Degree (CBSS-Reg./Suppl./Imp.) Examination, May 2020  
(2014 Admission Onwards)  
MCA2C10 : COMPUTER NETWORKS**

Time : 3 Hours

Max. Marks : 80

**SECTION – A**

Answer **any ten** questions. **Each** question carries **three** marks. **(10×3=30)**

1. What are the five fundamental characteristics data communication system ?
2. Define performance, reliability and security.
3. Define protocol.
4. List the differences between LAN, WAN and MAN networks with examples.
5. State the various components of computer network.
6. What are the four aspects related to the reliable delivery of data ?
7. State the difference between classless and class full addressing.
8. Draw the general format of ICMP messages.
9. What are the uses of ARP and RARP ?
10. Mention the services of network layer.
11. What are the importance of variable sized sliding window in TCP ?
12. What are the design issues of Transport layer ?

**SECTION – B**

Answer **all** questions. **Each** question carries **ten** marks. **(5×10=50)**

13. a) Discuss in details about the layers and its functionalities in TCP/IP model. **10**

**OR**

- b) i) Differentiate between circuit switching, packet switching and message switching. **5**
- ii) What are the applications of computer networks ? Explain in brief. **5**

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14. a) i) What are the design issues in data link layer ? 5  
ii) Explain in detail about the Simplex stop and wait protocol. 5
- OR
- b) Discuss the various types of encoding and modulation techniques used in data communication. 10
15. a) i) What is pure ALOHA and slotted ALOHA ? Mention the advantages of slotted ALOHA. 5  
ii) What are the drawbacks of stop and wait protocol ? How can they overcome by sliding window protocol ? 5
- OR
- b) i) Discuss about CSMA/CD protocol and its basic functions. 5  
ii) What is the significance of bridge ? What are the different types of bridges ? Explain, briefly. 5
16. a) What are the design aspects of routing protocols ? Explain the operation of any two routing algorithms. 10
- OR
- b) Explain the general principles of congestion prevention policies. 10
17. a) i) What are the five basic functions supported in e-mail systems ? Explain briefly. 5  
ii) Comparison between encryption and decryption. 5
- OR
- b) i) List and explain the two fundamental cryptographic principles. 5  
ii) Explain in detail three ways of handshaking for connection establishment in TCP. 5

SECTION - B

Answer all questions. Each question carries ten marks.

13. a) Discuss in detail about the layers and its functionalities in TCP/IP model. 10

OR

b) Differentiate between circuit switching, packet switching and message switching.

ii) What are the applications of computer networks ? Explain in detail.

P.T.O.