Seat No:_____ **Enrollment No:_____**

PARUL UNIVERSITY

FACULTY OF IT & COMPUTER SCIENCE

BCA/IMCA Winter 2018-19 Examination

Semester: 3 **Date: 25/10/2018**
Subject Code: 05101202/05301202 **Time: 10:30 am to 1:00 pm**
Subject Name: Data Communication and Computer Networks **Total Marks: 60**

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 Answer the followings.

A. Write short notes. **(05)**

1. What is an internet?
2. What is supernetting?
3. Give one difference between Coaxial and fiber optic cables.
4. Give an example of IPv6 and IPv4 addresses.
5. Expand MAC and TCP.

B. Do as Directed. **(10)**

1. In TCP/IP protocol suite, which one of following is NOT part of the IP header?
[A] Fragment Offset
[B] Source IP address
[C] Destination IP address
[D] Destination port number

2. Class A Priority (Fixed)bit is
[A] 0
[B] 10
[C] 110
[D] 1110

3. ICMP is primarily used for?
[A] Error and diagnostic functions
[B]Addressing
[C] Forwarding
[D] None of the above

4. A notebook computer used in a hotel room – is an application of Mobile and Wireless. (T/F)

5. How long PORT address is in bits?
[A] 16
[B] 32
[C] 48
[D] 128

6. One of the headers field in an IP datagram is the Time to Live (TTL) field. Which of the following statements best explains need for this field?
[A] It can be used to prioritize packets.
[B] It can be used to reduce delays.
[C] It can be used to optimize throughput.
[D]It can be used to prevent packet looping.

7. Dijkstra's algorithm is used in which routing algorithm to construct shortest path tree?
[A]Distance Vector
[B]Link State
[C]PathVector
[D]None of the above

8. A World Wide Web is the example of a distributed system. (T/F)

9. An Ethernet is most widely used WAN network for data transmission. (T/F)

10. FDDI is an example of a RING network. (T/F).

Q.2 Answer the followings. [Attempt Any 5] **(15)**

1. What is subnet mask? Write default subnet mask for class A, class B, class C.

2. What is Transmission media? Write advantages and disadvantages of fiber optics.

3. Give short description for flow control protocol in data link layer.

4. What is Multiplexing? Explain any one multiplexing technique.

5. Expand OSPF, UDP, BGP, ICMP, IPv6 and ARP.

6. List and explain in brief the protocols for Application Layer.

Q.3 Answer the following. [Any three] **(15)**

1. What is Firewall? Explain SMTP in details.

2. Explain TCP transport protocol?

3. What is Switching? Enlist different Switching technique. Explain any one Switching technique.

4. What is error? Explain CRC error detection method with example.

Q.4 Answer the following.

A. Explain Hamming Code error correction method with example. **(05)**

B. What is Router? Explain Distance Vector algorithm with example. **(10)**

OR

B. Explain OSI reference model with diagram. **(10)**