Seat No:_____   Enrollment No:_____

PARUL UNIVERSITY
FACULTY OF IT & COMPUTER SCIENCE
BCA / IMCA, Winter 2017 – 18 Examination

Semester: 3   Date: 26/12/2017
Subject Code: 05101202/05301202   Time: 2:00 pm to 4:30 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 A. Answer the followings. (05)

1. What is a network?
2. What are subnets?
3. Give one difference between Coaxial and fiber optic cables.
4. Give an example of IPv6 and IPv4 addresses.
5. Expand OSI and UDP.

B. Multiple choice type questions and True/False questions (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 D Priority (Fixed)bit is
   [A] 1100   [B] 1110
   [C] 1111   [D] 1100
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 MAC address is in bits?
   [A] 24   [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 BUS network (T/F).

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

1. Explain functions of Data link layer.
2. Enlist switching techniques and explain packet switching.
3. Give short description for flow control protocol in data link layer.
4. Compare the fiber optics and copper wire communication mediums.
5. Expand IGRP, OSPF, BGP, ICMP, IPv6 and IGMP.
6. List and explain in brief the protocols for Application Layer.

Q.3   **Answer the following. [Attempt Any 3]**   **(15)**
        1. Write short note on DNS.
        2. Explain TCP transport protocol.
        3. List and explain all the different types of transmission media.
        4. What is error? Explain CRC error detection method with example.

Q.4   **Answer the following.**
  A. Explain telephone system structure in details with a diagram.   **(05)**
  B. What is multiplexing? Explain TDM, FDM in detail along with diagram.   **(10)**

<div align="center">OR</div>

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