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

The figure in the margin indicates full marks.

Answer from both the groups as directed.

GROUP - A
(Objective Type Questions - Compulsory)

Q.No. 1. Choose the correct answer of the following: 

2 x 10 = 20

1. Which mode of transmission requires a clock?
   a) Serial
   b) Parallel
   c) Serial-parallel
   d) None of the above

2. Which is the process in which two or more signals are combined?
   a) Multiplexing
   b) De-multiplexing
   c) Both a) and b)
   d) None of the above

3. The throughput of pure ALOHA.
   a) 18.1%
   b) 18.2%
   c) 18.4%
   d) 18.9%

4. UDP runs over ............
   a) IPv6
   b) TCP
   c) IPv4
   d) None of the above
Optical fiber is based on the principle of ...........

a) Reflection
b) Refraction
c) Total internal reflection
d) None of the above

6. A noiseless 3-khz channel transmits binary signals at the rate of ...........

a) 6kbp
b) 5kbp
b) 4kbp
d) 2kbp

7. 25) The address reserved for private networks is ...........

a) a) 172.16.255.0
b) b) 173.15.256.1
c) c) 173.15.258.2
d) None of the above

8. ARP is defined in ...........

a) RFC 826
b) RFC 827
c) RFC 829
d) RFC 286

9. Inter NIC is known as ...........

a) International Net Information Communication
b) Inter Network Information Command
c) International Network Institute Center
d) International Network Information Center

10. The number of the levels in digital signal is ...........

a) One
b) Two
c) Four
d) Ten

GROUP - B

(Long Answer Type Questions)

Answer any four questions. Each question carries 15 marks.

Q.No. 2. What are the five service primitives for implementing a simple connection oriented service? Explain them. Also explain the two types of transmission technology.

Q.No. 3. Explain about store-and-forward packet switching. Also write short notes on routing for mobile hosts.
Q.No. 4. Explain with examples, error detecting and correcting codes. Also explain in detail on pure ALOHA system.

Q.No. 5. Explain ARQ protocol with its various functions. Also write difference between TDM and FDM.

Q.No. 6. What is modulation? Explain AM, FM and PM with waveforms. Also explain physical topologies with diagram.

Q.No. 7. Explain PCM with block diagram. Also discuss Data link, Network and Transport layer in detail.

Q.No. 8. Write short notes on the following:
   (i) MPLS  
   (ii) RSVP

Q.No. 9. Write and explain frame format of IPV6.