DHARMSINH DESAI UNIVERSITY, NADIAD
FACULTY OF TECHNOLOGY

B.TECH. SEMESTER IV [Information Technology]

SUBJECT: (IT 407) Computer And Communication Network

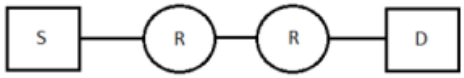
Examination	**: Block**	**Seat No.**	**:**
Date	**: 20/04/2016**	**Day**	**: Wednesday**
Time	**: 11.00 To 12.15 PM**	**Max. Marks**	**: 36**

INSTRUCTIONS:

1. Figures to the right indicate maximum marks for that question.
2. The symbols used carry their usual meanings.
3. Assume suitable data, if required & mention them clearly.
4. Draw neat sketches wherever necessary.

Q.1 Do as directed. **[12]**

(a) Assume that source S and destination D are connected through two intermediate routers labeled R. Determine how many times each packet has to visit the network layer and the data link layer during a transmission from S to D. **[02]**



(A) Network layer – 4 times and Data link layer – 4 times
(B) Network layer – 4 times and Data link layer – 3 times
(C) Network layer – 4 times and Data link layer – 6 times
(D) Network layer – 2 times and Data link layer – 6 times

(b) Explain the difference between TPC and UDP. **[02]**

(c) Explain difference between ARP and RARP. **[02]**

(d) What is the window size at sender and receiver for Stop and wait, Go Back N and Selective repeat techniques? **[02]**

(e) What is Hamming distance? The Hamming distance between 001111 and 010011 is_____ **[02]**

(f) Explain any two functionalities of physical layer. **[02]**

Q.2 Attempt Any Two of following questions. **[12]**

(a) Consider the following routing table of a router. **[06]**

Destination Network	Next hop
192.24.0.0 / 18	D
192.24.12.0 /22	B

Find the next hop for the following four IP addresses.
Clearly show the calculations.

1. 192.24.6.0
2. 192.24.14.32
3. 192.24.54.0
4. 192.26.12.0

(b) What is Domain Name System? Explain Domain Name Space in detail. **[06]**

(c) What is network address translator (NAT)? Explain the working of NAT with suitable figure. **[06]**

Q.3 Attempt following questions **[12]**

(a) Explain OSPF routing protocol in detail with example. **[06]**

(b) Explain different error control techniques at data link layer. **[06]**

OR

Q.3 Attempt following questions **[12]**

(a) Explain TCP connection establishment using Three way handshaking **[06]**

(b) Explain CSMA/CD and CSMA/CA with proper figure. **[06]**