DHARMSINH DESAI UNIVERSITY, NADIAD
FACULTY OF TECHNOLOGY
B.TECH. SEMESTER IV [IT]
SUBJECT: (IT407) COMPUTER AND COMMUNICATION NETWORKS

Examination	**: Block**	**Seat No.**	**: _____**
Date	**: 07/04/2018**	**Day**	**: Saturday**
Time	**: 11:00 to 12:15**	**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) One of your classmates, Rahul, has pointed out that it is wasteful to end each frame with a flag byte and then begin the next one with a second flag byte. One flag byte could do the job as well, and a byte saved is a byte earned. Do you agree? **[2]**

(b) How system reacts in cases congestion detected by, Time-out & 3 duplicate ACK? **[2]**

(c) Which transport layer protocol is responsible for controlling the size of segments and the rate at which segments are exchanged between a web client and a web server? **[1]**

(d) What are two benefits of using a layered network model? (Choose two.) **[2]**

It assists in protocol design.	It speeds up packet delivery.
It prevents designers from creating their own model.	It prevents technology in one layer from affecting other layers.
It ensures a device at one layer can function at the next higher layer.	

(e) What addresses are mapped by ARP? **[1]**

(f) Which two functions are primary functions of a router? **[2]**

(g) List out the service primitives and their meaning to implement connection oriented system. **[2]**

Q.2 Attempt the following questions. **[12]**

(a) Station A uses 32 byte packets to transmit messages to Station B using a sliding window protocol. The round trip delay between A and B is 80 milliseconds and the bottleneck bandwidth on the path between A and B is 128 kbps. What is the optimal window size that A should use? **[6]**

(b) What is the remainder obtained by dividing x7+x5+1 by the generator polynomial x3+1? **[6]**

Q.3 (a) The routing table of a router is shown below : **[6]**

Destination Network	Subnet Mask	Interface
128.75.43.0	255.255.255.0	Eth 0
128.75.43.0	255.255.255.128	Eth 1
192.12.17.5	255.255.255.255	Eth 3
0.0.0.0	Default	Eth 2

On which interface will the router forward packets addressed to destinations 128.75.43.16 and 192.12.17.10 respectively?

(b) What is DNS stand for? Why do we need it? What is difference between iterative and recursive resolver? **[6]**