



DHARMSINH DESAI UNIVERSITY, NADIAD
FACULTY OF TECHNOLOGY
B.TECH. SEMESTER V [Information Technology]
SUBJECT: (IT-505) Computer And Communication Network

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| Examination | : Third Sessional | Seat No. | : |
| Date | : 9/10/2014 | Day | : Thursday |
| Time | : 11:15 to 12:30 | 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.
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Q.1 Do as directed.

- A** Which of the following system calls results in the sending of SYN packets? [2]
(A) socket (B) bind (C) listen (D) connect
- B** In the slow start phase of the TCP congestion control algorithm, the size of the congestion window [2]
(A) does not increase (B) increases linearly (C) increases quadratically (D) increases exponentially
- C** A client process P needs to make a TCP connection to a server process S. [2]
Consider the following situation: the server process S executes a socket (), a bind () and a listen () system call in that order, following which it is preempted. Subsequently, the client process P executes a socket () system call followed by connect () system call to connect to the server process S. The server process has not executed any accept () system call. Which one of the following events could take place?
(A) connect () system call returns successfully (B) connect () system call blocks
(C) connect () system call returns an error (D) connect () system call results in a core dump
- D** Which one of the following is not a client server application? [2]
(A) Internet chat (B) Web browsing (C) E-mail (D) Ping
- E** Define Karn's algorithm. [2]
- F** The maximum payload of a TCP segment is 65,495 bytes. Why such a strange number is chosen? [2]

Q.2 Attempt ANY TWO.

- a** Write a short note on: (I) DNS (II) FTP [6]
- b** Explain Three-Way Handshake Mechanism used by TCP to terminate a Session. [6]
- c** Explain TCP transmission policy with silly window syndrome problem and its solutions. [6]

- Q.3(a)** Let the size of congestion window of a TCP connection be 32 KB when a timeout occurs. [6]
The round trip time of the connection is 100 msec and the maximum segment size used is 2kB. What is the time taken (in msec) by the TCP connection to get back to 32KB congestion Window?

- Q.3(b)** Briefly explain the following terms : (I) Encryption (II) Authentication (III) Confidentiality [6]

-OR-

- Q.3(a)** (I) Consider the effect of using slow start on a line with 10 ms roundtrip time and no congestion. The receive window is 24KB and maximum segment size is 2KB. How long does it take before the first full window can be sent? [6]

(II) Suppose that the TCP congestion window is set to 18KB and a timeout occurs. How big will the window be if next four transmission bursts are all successful? Assume the maximum segment size is 1KB.

- Q.3(b)** Explain TCP Timer management. [6]

