5. What is multiprogramming? Discuss important memory management strategies.
6. What do you mean by Network Topology? Explain TCP/IP protocol Stack.
7. What is deadlock? Explain necessary conditions for occurring deadlock.
8. Explain Distributed File System, Multicomputer System and Clustering.
9. Write a brief note on Cryptography. Explain different Security attacks.
10. Explain the following:
    (a) Security Attacks
    (b) Secure Communication Protocols
    (c) Virtual Memory
    (d) Redundant Arrays of Independent Disks (RAID)

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2018

Time : 3 hours *Full Marks : 80*

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

The questions are of equal value.

Answer any five questions, in which Q.No. 1 is compulsory.

1. Choose the correct answer of the following:
    (a) Which process can be affected by other processes executing in the system?
        (i) cooperating process
        (ii) child process
        (iii) parent process
        (iv) init process
    (b) When several processes access the same data concurrently and the outcome of the execution depends on the particular order in which the access takes place, is called
        (i) dynamic condition
        (ii) race condition
        (iii) essential condition

P.T.O.

(iv) critical condition

(c) Which module gives control of the CPU to the process selected by the short-term scheduler?

(i) dispatcher

(ii) interrupt

(iii) scheduler

(iv) none of the mentioned

(d) The processes that are residing in main memory and are ready and waiting to execute are kept on a list called

(i) job queue

(ii) ready queue

(iii) execution queue

(iv) process queue

(e) Which of the following condition is required for deadlock to be possible?

(i) mutual exclusion

(ii) a process may hold allocated resources while awaiting assignment of other resources

(iii) no resource can be forcibly removed from a process holding it

(iv) all of the mentioned

(f) A system is in the safe state if

(i) the system can allocate resources to each process in some order and still avoid a deadlock

(ii) there exist a safe sequence

(iii) all of the mentioned

(iv) none of the mentioned

(g) The circular wait condition can be prevented by

(i) defining a linear ordering of resource types

(ii) using thread

(iii) using pipes

(iv) all of the mentioned

(h) Which one of the following is the deadlock avoidance algorithm?

(i) banker's algorithm

(ii) round-robin algorithm

(iii) elevator algorithm

(iv) karn's algorithm

2. What is operating system? Explain functions of operating system.

3. What is Process management? Why is it required? Explain interrupts.

4. What do you mean by thread? Explain different thread operations.