

Total No. of printed pages = 3

MCA 182301

Roll No. of candidate

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BINA CHOWDHURY CENTRAL LIBRARY
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Azara, Halkhawa para,
Guwahati - 781017

M.C.A. 3rd Semester Final Examination

OPERATING SYSTEM

(New Regulation w.e.f. 2017-18)

(New Syllabus w.e.f. 2018-19)

Full Marks –70

Time – Three hours

The figures in the margin indicate full marks
for the questions.

Answer question No. 1 and any *four* from the rest.

1. Choice the appropriate answer : (10 × 1 = 10)
- (i) In a time sharing operating system when time slot given to a process is completed, process next phase is
- (a) Blocked State
 - (b) Ready State
 - (c) Suspend State
 - (d) Terminal State
- (ii) In a multiprogramming environment
- (a) Processor executes more than one process at a time
 - (b) Programs developed by more than one person
 - (c) More than one process reside in memory
 - (d) A single user executes multiple programs.
- (iii) Condition when a process executing in critical section no other process allowed to execute is called
- (a) Mutual Exclusion
 - (b) Critical Section
 - (c) Synchronous exclusion
 - (d) Asynchronous Exclusion

[Turn over

- (iv) Which one of following is a synchronization tool
- (a) Thread
 - (b) Pipe
 - (c) Semaphore
 - (d) Socket
- (v) In a FIFO page replacement policy algorithm
- (a) Oldest page is chosen
 - (b) Newest page is chosen
 - (c) Random Page is chosen
 - (d) None of the mentioned
- (vi) A program in execution is called
- (a) Paging
 - (b) A process
 - (c) Virtual Memory
 - (d) None of mentioned
- (vii) Compaction algorithm is used for overcoming problem of
- (a) Internal Fragmentation
 - (b) External Fragmentation
 - (c) Page faults
 - (d) Swapping
- (viii) Direct Memory Access (DMA)
- (a) Relieve CPU for other works
 - (b) Engage CPU continuously for data transfer
 - (c) Used for process allocation
 - (d) None of mentioned
- (ix) Device driver program is
- (a) Device dependent
 - (b) Device independent
 - (c) Partially device dependent
 - (d) None of mentioned
- (x) Multithreading models are defined as
- (a) Many to one
 - (b) One to many
 - (c) Many to many
 - (d) All of mentioned

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2. (a) Explain how operating system can be viewed as an extended machine and resource manager. (6)
- (b) State the differences of sequential and concurrent processing. Using an example at your own show how concurrent processing is more efficient than sequential processing. (9)
3. (a) What is PCB? How it keeps track of different informations. (5)
- (b) Give distinct features of three different types of schedulers. (5)
- (c) Explain working of Round Robin or SRTN scheduling algorithm. (5)
4. (a) How contiguous and non contiguous memory allocation differ? What are the problems of internal and external fragmentation? (4)
- (b) State the features of Dynamic memory allocation with reference to compaction, protection and sharing. (9)
- (c) What is the swapping technique used in memory management? (2)
5. (a) Explain the process of DMA transfer. (5)
- (b) What are the different functions performed by four layers of input / output Software. (10)
6. (a) State the basic idea behind disk space management in operating systems. (5)
- (b) Explain how I-node structure is implemented for file storage. (5)
- (c) What is Protection Domain? How it is implemented with Protection Matrix? (5)
7. Write short notes (any *three*) : (3 × 5)
- (a) LRU/FIFO page replacement policy
- (b) Bankers algorithm for multiple resource
- (c) Paging
- (d) Batch operating systems
- (e) Multithreading.

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