Enrollment No: _____   Exam Seat No:_____

C. U. SHAH UNIVERSITY
Winter Examination-2019

Subject Name : Advanced Operating System

Subject Code : 4CS03AOS1   **Branch: M.Sc.C.A. & I.T. (Integrated)**

Semester: 3   **Date: 17/10/2019**   **Time: 02:30 To 05:30**   **Marks: 70**

Instructions:
   (1) Use of Programmable calculator & any other electronic instrument is prohibited.
   (2) Instructions written on main answer book are strictly to be obeyed.
   (3) Draw neat diagrams and figures (if necessary) at right places.
   (4) Assume suitable data if needed.

Q-1   Attempt the following MCQs: (14)

1)   Which of the following is not the state of a process?
       a) New   b) Old
       c) Waiting   d) Running

2)   A process can be :
       a) single threaded   b) multithreaded
       c) both single threaded and multithreaded   d) none of the mentioned

3)   A single thread of control allows the process to perform:
       a) only one task at a time   b) multiple tasks at a time
       c) only two tasks at a time   d) all of the mentioned

4)   The model in which one kernel thread is mapped to many user-level threads is called :
       a) Many to One model   b) One to Many model
       c) Many to Many model   d) One to One model

5)   In the Many to One model, multiple threads are unable to run in parallel on multiprocessors because :
       a) only one thread can access the kernel at a time

       b) many user threads have access to just one kernel thread

       c) there is only one kernel thread
       d) none of the mentioned

6)   Which one of the following is the address generated by CPU?
       a) physical address   b) absolute address
       c) logical address   d) none of the mentioned

7)   Program always deals with

a) logical address   b) absolute address
c) physical address   d) relative address

8) Logical memory is broken into blocks of the same size called _____
a) frames   b) pages
c) backing store   d) none of the mentioned

9) Memory management technique in which system stores and retrieves data from secondary storage for use in main memory is called
a) fragmentation   b) paging
c) mapping   d) none of the mentioned

10) Physical memory is broken into fixed-sized blocks called _____
a) frames   b) pages
c) backing store   d) none of the mentioned

11) External fragmentation exists when :
a) enough total memory exists to satisfy a request but it is not contiguous
b) the total memory is insufficient to satisfy a request
c) a request cannot be satisfied even when the total memory is free
d) none of the mentioned

12) To create a file :
a) allocate the space in file system
b) make an entry for new file in directory
c) allocate the space in file system & make an entry for new file in directory
d) none of the mentioned

13) A FIFO replacement algorithm associates with each page the _____
a) time it was brought into memory
b) size of the page in memory
c) page after and before it
d) all of the mentioned

14) A page fault occurs when :
a) a page gives inconsistent data
b) a page cannot be accessed due to its absence from memory
c) a page is invisible
d) all of the mentioned

Attempt any four questions from Q-2 to Q-8

Q-2   **Attempt all questions**

a) Explain process states with suitable diagram.   **07**
b) What is PCB? Explain in brief.   **07**

Q-3   **Attempt all questions**

	a)	What is multithreading? Explain the benefits of multithreading.	**07**
	b)	Explain models of multithreading.	**07**

Q-4 **Attempt all questions**

a)	Explain computer system architecture with diagram.	**07**
b)	What is file? What are the differences between file and directory? Explain various file attributes and file operations in brief.	**07**

Q-5 **Attempt all questions**

a)	Explain swapping with suitable diagram.	**07**
b)	Explain types of partition of memory.	**07**

Q-6 **Attempt all questions**

a)	Explain internal and external fragmentation.	**07**
b)	What is segmentation? Explain with example.	**07**

Q-7 **Attempt all questions**

a)	What is paging? Explain with example.	**07**
b)	Explain types of scheduling.	**07**

Q-8 **Attempt all questions**

a)	What is Virtual Memory? Write short note on Demand Paging with suitable example	**07**
b)	Discuss about performance of First Come First Serve and Least Recently Used page replacement algorithms with example.	**07**