Roll No. .....

C

CBB-2947-T

MCA Second Semester

(End Semester)

Examination, 2019

COMPUTER SCIENCE AND APPLICATION

Paper - CSA-CC-224

(Operating System)

Time : Three Hours] [Maximum Marks : 60

Note :– Attempt all sections A, B and C. Follow instructions as given in each section.

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Section-A

(Objective Type Questions) 10×1=10

Note : Choose the correct option.

1. The primary job as the operating system of a computer is to

   (a) Command resources

   (b) Manage resources

   (c) Be use friendly

   (d) None of these

2. In priority based scheduling, the problem of indefinite blockage of low priority is solved by

   (a) Separate queues

   (b) Batch processing

   (c) Aging priority

   (d) None of these

3. The first-fit, best-fit and the wost-fit algorithm can be used for

   (a) Contigaming allocation of memory

   (b) Linked allocation of memory

   (c) Contiguous allocation of memory

   (d) None of these

4. Resources are allocated to the processes on Non-sharable basis is

   (a) Mutual exclusion

   (b) No-preemption

   (c) Hold and wait

   (d) None of these

5. Which of the following does not interrupt a running process?

   (a) Power failure

   (b) Scheduling process

   (c) Device

   (d) None of these

6. Invoking periodically to test for deadlock is one of the way for deadlock.....

   (a) Detection

   (b) Avoidance

   (c) Prevention

   (d) None of these

7. File type can be represented by

(a) File identifier

(b) File extension

(c) File name

(d) None of these

8. File system fragmentation occurs when

(a) Unused space or single file are not contiguous

(b) Multiple files are not contiguous

(c) Used space is not contiguous

(d) None of these

9. Distributed systems have?

(a) High security

(b) Better resource sharing

(c) Better system utilization

(d) None of these

10. In distributed file system, ... is mapping between logical and physical objects.

(a) Migration

(b) Client interfacing

(c) Naming

(d) None of these

Section 'B'

(Short Answer Type Questions) 4×5=20

Note :– Attempt any **four** questions. Each question carries **five** marks.

1. What are the five major activities of an operating system with regard to process management?

2. Define the virtual memory. What are its advantages?

3. When a system is said to be in safe state? Explain.

4. List out five important criteria for file organization.

5. What is distributed operating system? What are the advantages of distributed operating system?

6. Consider the main memory with capacity of 4 available frames (initially all empty). Assume that the pages of a process are referenced in the order as given below-

   1,3, 4, 4, 3, 2, 1, 7, 5, 6, 4, 2, 1, 2.

   Which one is better FIFO or LRU page replacement algorithm and why?

Section 'C'

(Long Answer Type Questions) 3×10=30

Note :– Attempt any **three** questions. Each question carries **ten** mark.

1. Assume you have the following jobs to execute with one processor-

Process	Arrival Time (ms)	Burst Time (ms)
P1	0	80
P2	4	40
P3	10	10

Calculate average turn around time using FCFS and Non-preemptive SJF scheduling alogrithm.

2. Explain paging and segmentation. How they are helpful in removing fragmentation?

3. What is Deadlock problem? What are the four necessary condition for a deadlock to occur?

4. Why directories are needed? Describe how a file directory system can be organised into one level, two level and tree-structured directories.

5. Write short notes on the following:-

   (a) Types of distributed system

   (b) Network topology