

Reg. No. : .....

de No. : 30519 E Sub. Code : SMCA 61

A.(CBCS) DEGREE EXAMINATION, APRIL 2022

Sixth Semester

Computer Application — Core

OPERATING SYSTEMS

(For those who joined in July 2017 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

\_\_\_\_\_ is a program that acts as an intermediary between the user of a computer and computer hardware.

- (a) Application
- (b) Operating system
- (c) Desktop
- (d) Window

An address generated by the CPU is commonly referred to as a \_\_\_\_\_ address.

- (a) Physical
- (b) Register
- (c) Logical
- (d) Static

The run-time mapping from virtual to physical address is done by a hardware device called the \_\_\_\_\_ unit.

- (a) Register
- (b) Memory-management
- (c) Processor
- (d) Bus

\_\_\_\_\_ is a named collection of related information that is recorded on secondary storage.

- (a) File
- (b) Data
- (c) Page
- (d) Semaphore

Identify the block that contain information needed by the system to boot an OS from that partition

- a) PCB
- b) FCB
- c) Boot control block
- d) Partition block

2. Operating system provides an \_\_\_\_\_ within which other programs can do useful work.

- (a) System
- (b) Resource
- (c) Power
- (d) Environment

3. \_\_\_\_\_ is a program in execution.

- (a) Process
- (b) Section
- (c) Text
- (d) Stack

4. Which state of a process defined? "The process has finished execution".

- (a) New
- (b) Running
- (c) Terminated
- (d) Ready

5. Process synchronization can be done on

- (a) Hardware level
- (b) Software level
- (c) Both (a) and (b)
- (d) User level

6. Which one of the following is the deadlock avoidance algorithm?

- (a) Banker's algorithm
- (b) Round-robin algorithm
- (c) Elevators algorithm
- (d) Karn's algorithm

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PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) What are the main purpose of an operating system?

Or

(b) Distinguish between mainframe computers and personal computers.

12. (a) Describe the state of a process.

Or

(b) Comment on preemptive scheduling.

13. (a) Give a solution to the critical-section problem.

Or

(b) Narrate the necessary conditions for deadlock.

14. (a) Explain the address binding.

Or

(b) Compare first fit, best fit and worst fit storage strategies.

15. (a) What are the operations performed in a file? Explain.

Or

- (b) Illustrate the features of storage area network.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Write note on multiprogramming.

Or

- (b) Describe the advantages of multiprocessor systems.

17. (a) Explain the shortest-job-first scheduling algorithm.

Or

- (b) Illustrate the objectives of process scheduling.

18. (a) Discuss the banker's algorithm for deadlock avoidance.

Or

- (b) Write note on semaphores.

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19. (a) Narrate the multistep processing of a user program.

Or

- (b) Describe the most common techniques used for structuring the page table.

20. (a) Write note on RAID structure.

Or

- (b) Explain the file access methods.

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