(7 pages)

Reg. No. : ....

Code No. : 5849   Sub. Code : WCSM 22

M.Sc. (CBCS) DEGREE EXAMINATION,
APRIL 2024

Second Semester

Computer Science – Core

ADVANCED OPERATING SYSTEM

(For those who joined in July 2023 onwards)

Time : Three hours   Maximum : 75 marks

PART A — (15 × 1 = 15 marks)

Answer ALL questions.

Choose the correct answer :

1. Operating system is a —————

    (a) application program

    (b) system program

    (c) AI program

    (d) neural network program

2. The process is —————

    (a) an instance of a program in execution

    (b) a program only

    (c) a processor state

    (d) the kernel state

3. A small program which loads OS into the memory is called as —————.

    (a) ROM

    (b) Bootstrap loader

    (c) BIOS

    (d) RAM

4. ————— is a situation where a process or a set of processes is blocked, or waiting for some resource that is held by some other waiting processes.

    (a) Mutual exclusion   (b) Semaphore

    (c) Deadlock   (d) Hold and wait

5. A safe state is —————

    (a) deadlock state

    (b) non- deadlocked state

    (c) polling state

    (d) spooling state

6. Which is not an advantage of distributed systems?

   (a) Resource sharing

   (b) Tight regions

   (c) Communication

   (d) Computational speedup

7. An example for a real time system is _____

   (a) patient ventilator

   (b) moving car

   (c) conveyor belt

   (d) taking printouts

8. In _____ OS, the response time is very critical.

   (a) multitasking   (b) batch

   (c) online   (d) real time

9. Which of the following are single user operating system?

   (a) MS-DOS   (b) UNIX

   (c) LINUX   (d) OS/2

10. The operating system of a computer serves as a software interface between the user and the _____

    (a) hardware   (b) peripheral

    (c) memory   (d) screen

11. The collection of processes on the disk that is waiting to be brought into memory for execution forms the _____

    (a) ready queue   (b) device queue

    (c) input queue   (d) priority queue

12. The mechanism that brings a page into memory only when it is needed is called_____

    (a) segmentation

    (b) fragmentation

    (c) demand paging

    (d) page replacement

13. A kernel code that is executed in response to an interrupt is

    (a) interrupt handler

    (b) interrupt vector

    (c) interval timer

    (d) interrupting clock

14. _____ indicate errors from which the process cannot recover, such as hardware failure.

 (a) Fault   (b) Trap

 (c) Abort   (d) Exception

15. A program in execution is called _____

 (a) message   (b) data

 (c) process   (d) state

PART B — (5 × 4 = 20 marks)

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

Each answer should not exceed 250 words.

16. (a) Elaborate the need of deadlock detection.

Or

 (b) Distinguish between the microprocessor systems and distributed systems.

17. (a) Describe the communication primitives in distributed operating system.

Or

 (b) Highlight the various strategies in deadlock handling.

18. (a) Explain the applications of real time systems.

Or

 (b) Mention the characteristics in real time system.

19. (a) Point out the advantages of handheld operating system.

Or

 (b) Elucidate the technology overview of handheld operating system.

20. (a) What are the processing scheduling in Linux system? Explain.

Or

 (b) Summarize the functions of core OS layer in iOS.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

21. (a) Discuss the concept of inter process communication.

Or

 (b) Compare and construct real time systems and handheld systems.

22. (a) Examine the issues in deadlock detection and resolution.

Or

(b) Outline the uses of Lamports Logical clocks.

23. (a) Illustrate the basic model of real time system.

Or

(b) What is the real time tasks scheduling? Explain.

24. (a) Draw and explain the general architecture of android.

Or

(b) Evaluate the difference between Palm OS and Symbian Operating system.

25. (a) Formulate the architecture and SDK framework for iOS.

Or

(b) Explain the file system in operating system.

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