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**PRESIDENCY UNIVERSITY
BENGALURU**

**SCHOOL OF ENGINEERING
MID TERM EXAMINATION - MAY 2023**

Semester : Semester IV - B.Tech CSE - 2021
Course Code : CSE2010
Course Name : Sem IV - CSE2010 - Operating System
Program : B.Tech. Computer Science and Engineering

Date : 22-MAY-2023
Time : 10.30 AM - 12.00 PM
Max Marks : 50
Weightage : 25%

Instructions:

- (i) Read all questions carefully and answer accordingly.
 - (ii) Question paper consists of 3 parts.
 - (iii) Scientific and non-programmable calculator are permitted.
 - (iv) Do not write any information on the question paper other than Roll Number.
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PART A

ANSWER ALL THE QUESTIONS

(10 X 1 = 10M)

1. What type of scheduling is round-robin scheduling?
a) Linear data scheduling (CO2) [Knowledge]
b) Non-linear data scheduling
c) Pre-emptive Scheduling
d) Non Pre-emptive Scheduling
2. Command Interpreter is also called as _____ (CO1) [Knowledge]
a) Command Prompt
b) Shell
c) Kernel
d) Command
3. To overcome Starvation in Priority Scheduling which of the following mechanism is used: (CO2) [Knowledge]
a) Paging
b) Aging
c) Casting
d) Flipping

4. A Program is a passive entity then Process is an _____ (CO1) [Knowledge]
a) Command
b) Active Entity
c) Idle
d) Null
5. A mailbox is owned by _____ (CO1) [Knowledge]
a) Operating System
b) Process
c) Both A and B
d) None
6. Linux Operating System is an _____ (CO1) [Knowledge]
a) Private Operating System
b) Open Source Operating System
c) Windows Operating System
d) None of the above
7. In case of any I/O during execution, the process moves to _____ state. (CO2) [Knowledge]
a) Ready
b) New
c) Running
d) Waiting
8. Which of the following does not interrupt the running process? (CO2) [Knowledge]
a) Timer interrupt
b) I/O Device
c) Power Failure
d) Scheduler
9. The layer of computer system between the hardware and the user program is _____ (CO1) [Knowledge]
a) System environment
b) Operating environment
c) Operating System
d) None of the above
10. BIOS is used by _____ (CO1) [Knowledge]
a) Operating System
b) Compiler
c) Interpreter
d) System Programs

PART B

ANSWER ALL THE QUESTIONS

(4 X 5 = 20M)

11. List the advantages and disadvantages of non-simple and layered operating system structures. (CO1) [Comprehension]

12. List and explain the challenges faced by the designers while designing OS. Also, explain in brief about its implementation. (CO1) [Comprehension]
13. What are different operations performed on a process, explain in brief. (CO2) [Comprehension]
14. Discuss the different multithreading models with neat diagrams (CO2) [Comprehension]

PART C

ANSWER ALL THE QUESTIONS

(2 X 10 = 20M)

15. Classify any four operating systems based on their structures with neat diagrams. (CO1) [Application]
16. 1. Consider the following set of processes, assumed to have arrived at time 0. Consider the CPU scheduling algorithms Shortest Job First (SJF) and RR. For RR, assume that the processes are scheduled in the order P1, P2, P3, P4.

If the time quantum for RR is 4 ms, then find the average turnaround times, waiting times and response times(in ms) of SJF .

(CO2) [Application]