Reg. No.															

B.Tech. DEGREE EXAMINATION, NOVEMBER 2017
Third/ Fourth /Fifth Semester

15CS302J – OPERATING SYSTEMS
(For the candidates admitted during the academic year 2015 – 2016 onwards)

Note:
(i) **Part - A** should be answered in OMR sheet within first 45 minutes and OMR sheet should be handed over to hall invigilator at the end of 45th minute.
(ii) **Part - B** and **Part - C** should be answered in answer booklet.

Time: Three Hours Max. Marks: 100

PART – A (20 × 1 = 20 Marks)
Answer **ALL** Questions

1. To access the services of operating systems, the interface is provided by the
   (A) System calls (B) API
   (C) Library (D) Assembly instructions

2. Which one of the following is not a real time operating system?
   (A) Vx works (B) Windows CE
   (C) RT Linux (D) Palm OS

3. In Linux, which system call creates the new process?
   (A) fork (B) create
   (C) new (D) initiate

4. Which is responsible for maintaining all the important abstractions of the operating system?
   (A) Kernel (B) System libraries
   (C) System utilities (D) Daemons

5. Which facility dynamically adds probes to a running system, both in user processes and in the kernel?
   (A) Dadd (B) DLocate
   (C) DTrace (D) DMap

6. The OS X has
   (A) Monolithic kernel (B) Hybrid kernel
   (C) Micro kernel (D) Monolithic kernel with modules

7. A process stack does not contain
   (A) Function parameters (B) Local variables
   (C) Return addresses (D) PID of child process

8. The event for which a state 'thread is blocked' occurs is when
   (A) thread moves to the ready queue (B) thread remains blocked
   (C) thread completes (D) a new thread is provided

9. _____ is a condition in which there is a set of concurrent processes, only one of which is able to access a given resource or perform a given function at any time.
   (A) Mutual exclusion (B) Busy waiting
   (C) Deadlock (D) Starvation

10. Semaphore is a/an _____ to solve the critical section problem.
   (A) Hardware for a system (B) Special program for a system
   (C) Integer variable (D) Decimal value

11. The two atomic operations permissible on semaphores are
   (A) Wait and signal (B) Stop and wait
   (C) Hold and signal (D) Wait and move

12. The wait operation of semaphore basically works on the basic _____ system call .
   (A) stop ( ) (B) block ( )
   (C) hold ( ) (D) wait ( )

13. The CPU fetches the instructions from memory according to the value of _____.
   (A) Program counter (B) Status register
   (C) Instruction register (D) Program status word

14. The address of the page table in memory is pointed by
   (A) Stack pointer (B) Page table base register
   (C) Page register (D) Program counter

15. The page table contains
   (A) Base address of each page in physical memory (B) Page offset
   (C) Page size (D) Page address

16. First Linux kernel which supports hardware was
   (A) Linux 0.1 (B) Linux 1.0
   (C) Linux 1.2 (D) Linux 2.0

17. On systems where there are multiple operating systems, the decision to load a particular one is done by
   (A) Boot loader (B) Boot strap
   (C) Process control block (D) File control block

18. The set of tracks that are at one arm position makeup a _____.
   (A) Magnetic disks (B) Electrical disks
   (C) Assemblies (D) Cylinders

19. The data-in register of I/O port is
   (A) Ready by host to get input (B) Ready by controller to get input
   (C) Written by host to send output (D) Written by host to start a command

20. Which buffer holds the output for a device?
   (A) Spool (B) Output
   (C) Status (D) Magic

PART – B (5 × 4 = 20 Marks)
Answer **ANY FIVE** Questions

21. State the concept of memory hierarchy.

22. Explain the working principle of program control block.

23. Enumerate various types of threads.

24. Write about semaphores.

25. Define deadlock and explain with an example.

26. Describe about paging and segmentation.

27. Paraphrase I/O buffering.

PART – C (5 × 12 = 60 Marks)
Answer **ALL** Questions

28. a. Categorize and explain various interrupts.

(OR)

b. Explain in detail about the evolution of an operating system.

29. a. Enumerate various process states and explain each.

(OR)

b. Write a detail description about process and process threads.

30. a. Illustrate mutual exclusion with an example.

(OR)

b. What is scheduling? Classify and explain any two scheduling techniques.

31. a. Define memory partitioning. Describe any two partitioning methods.

(OR)

b. Explain in detail about linux memory management.

32. a. Describe about the concept of disk scheduling.

(OR)

b. Write a detailed description about file management.

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