Reg. No.															

B.Tech. DEGREE EXAMINATION, DECEMBER 2017
Fifth Semester

CS1011 – OPERATING SYSTEMS
(For the candidates admitted during the academic year 2013 – 2014 and 2014 -2015)

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. Which is not a basic element of computer systems?
   (A) Processor registers (B) Memory
   (C) I/O communication techniques (D) Applications

2. An interrupt occurs while another interrupt is being processed is called _____.
   (A) Multiple interrupt (B) Disable interrupt
   (C) 2-way interrupt (D) Nested interrupt

3. Which is not an important constraint of memory?
   (A) Amount (B) Speed
   (C) Expense (D) Sharing

4. _____ memory is an invisible memory to operating system.
   (A) Cache (B) Secondary
   (C) Primary (D) Main

5. The system which allows only one process execution at a time are called
   (A) Uniprogramming systems (B) Uniprocessing systems
   (C) Unitasking systems (D) Multiprogramming system

6. In unix, which system call creates the new process?
   (A) new (B) create
   (C) fork (D) insert

7. A set of processes is in deadlock if
   (A) Each process is blocked and will remain so forever (B) Each process is terminated
   (C) All processes are trying to kill each other (D) Each process is suspended

8. Which system call returns the process identifier of a terminated child?
   (A) exit (B) wait
   (C) fork (D) get

9. Which one of the following is not a principle of concurrency in operating system?
   (A) Mutual exclusion (B) Semaphore
   (C) Monitor (D) Input output functions

10. The race condition occurs when
   (A) Multiple processes or threads read and write data items (B) Disorder the input output
   (C) Relocating data items (D) Changing order of statements

11. Which is not a possible condition for deadlock?
   (A) Mutual exclusion (B) Direct method
   (C) Hold and wait (D) No pre-emption

12. Round robin scheduling falls under the category of
   (A) Non pre-emptive scheduling (B) Pre-emptive scheduling
   (C) Time scheduling (D) Job scheduling

13. When a memory is divided into several fixed size partitions, each partition may contain _____.
   (A) Exactly one process (B) Atleast one process
   (C) Two processes at a time (D) Multiple processes at once

14. A solution to the problem of external fragmentation is
   (A) Compaction (B) Large memory space
   (C) Smaller memory space (D) Random memory space

15. Physical memory is broken into fixed size of blocks called _____.
   (A) Pages (B) Frames
   (C) Backing stores (D) Internal stores

16. Each entry is a segment table has a
   (A) Segment peak (B) Segment base limit
   (C) Segment value (D) Segment address

17. A _____ is a collection of electronics that can operate a port, a bus, or a device
   (A) Driver (B) Host
   (C) Controller (D) Bus

18. In _____ information is recorded magnetically on platters
   (A) Magnetic disks (B) Electronic disks
   (C) Assemblers (D) Cylinders

19. If a process needs I/O to or from disk and if drives or controller is busy then
   (A) The request will be placed in the queue of pending requests for that drive (B) The request will be processed and will be ignored completely
   (C) The request will be placed (D) The request will be in hold state

20. The-program initializes all aspects of the system, form CPU registers to device controllers and the contents of main memory and starts OS.
   (A) Main (B) Bootloader
   (C) Bootstrap (D) ROM

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

21. Summarize the concept of cache memory.

22. What are the functions of process control block?

23. Write short notes on 'Symmetric multiprocessing'.

24. Distinguish between FCFS and Round Robin scheduling algorithm.

25. Define semaphores. Why do you need them?

26. Mention the function of partitioning.

27. Write briefly about disk scheduling.

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

28. a. Discuss about an evolution of an operating system.

(OR)

b. Describe memory hierarchy with neat sketch.

29. a. Explain in detail about process description.

(OR)

b. List various threads and explain each in detail.

30. a. What is deadlock? Discuss deadlock prevention and avoidance.

(OR)

b. Enumerate all types of scheduling algorithms and discuss any two of them.

31. a. Write short notes on the following
   (i) Memory partitioning
   (ii) Paging and segmentation

(OR)

b. Describe the memory management of LINUX and windows.

32. a. Explain the concept of the following
   (i) Operating system design issues
   (ii) I/O buffering
   (iii) Disk cache

(OR)

b. Explain in detail about file management in operating systems.

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