Reg. No.															

B.Tech. DEGREE EXAMINATION, MAY 2018

15CS302J – OPERATING SYSTEMS

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 x 1 = 20 Marks)

Answer **ALL** Questions

1. _____ contains the address of an instruction to be fetched.
   (A) Stack pointer (B) Program counter
   (C) Index register (D) Instruction register

2. _____ contains the most frequently used functions in the operating system, at a given time other portions of the operating system currently in use
   (A) Scheduling (B) Setup time
   (C) Kernel (D) Fixes

3. The central are behind the simple batch processing scheme was the use of a piece of software known as
   (A) Interrupts (B) Timer
   (C) Memory protection (D) Monitor

4. _____ contains the instruction most recently fetcher
   (A) Instruction register (B) Data register
   (C) Address register (D) Index register

5. When the operating system creates a process at the explicit request of another process, the action is referred to as
   (A) Process creation (B) Process termination
   (C) Process batch (D) Process spawning

6. When one process spawns another, the former is referred to as the parent process and the spawned process is referred to as the
   (A) Induced process (B) Log process
   (C) Child process (D) Batch process

7. _____ consists of the contents of processor registers
   (A) Processor state information (B) Processor block information
   (C) Processor control information (D) Processor word information

8. With a _____ the operating system determine if the error or exception condition is fatal.
   (A) Interrupt (B) Fault
   (C) Mode (D) Trap

9. _____ situation in which 2 or more processes are unable to proceed because each is waiting for one of the others to do something.
(A) Dead lock (B) Saturation
(C) Enter critical (D) Exit critical

10. A _____ semaphore may only take on the values 0 and 1
(A) Strong (B) Weak
(C) Binary (D) Hexadecimal

11. A situation in which a runnable process is over looked indefinitely by the schedules although it is able to proceed, it is never choses is referred as
(A) Dead lock (B) Mutual exclusion
(C) Par begin (D) Starvation

12. The process that has been blocked the longest is released from the first, a semaphore whose definition includes this policy is called as
(A) Strong semaphore (B) Wait semaphore
(C) Binary semaphore (D) Primitive semaphore

13. Partitions are created dynamically, so that each process is loaded into a partition of exactly the same size as that process, this technique is
(A) Paging (B) Dynamic partitioning
(C) Fixed partitioning (D) Simple paging

14. As time goes in, memory becomes more and more fragmental and memory utilization declines and this phenomenon is referred as
(A) Segmentation (B) Paging
(C) Exclusion (D) External fragmentation

15. One technique for overcoming external fragmentation is _____.
(A) Placement (B) Paging
(C) Compaction (D) Fragmentation

16. _____ is an actual location is main memory
(A) Physical address (B) Logical address
(C) Net address (D) Primary address

17. _____ module controls the exchange of data between main memory and an I/O module.
(A) I/O function (B) Direct memory access
(C) I/O programmer (D) Local memory access

18. _____ devices stores information in blocks that are usually of fixed, and transfers are made one block at a time
(A) Stream oriented (B) File system
(C) Buffering (D) Block oriented

19. A process now transfers data to one buffer while the operating system empties the other, this technique is referred as
(A) Double buffering (B) Single buffering
(C) Multi buffering (D) Uni buffering

20. _____ devices transfer data in and out as a stream of bytes, with no block structures
(A) Single buffer (B) Stream oriented
(C) Double buffer (D) Circulated buffering

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

21. List out the structural elements of a computer to execute a program.

22. With a flow chart explain how a simple interrupt processing is processed.

23. List out any four reasons for process creation.

24. Explain about scheduling and state information which is an attribute of process control information.

25. List out the three degrees of awareness between processes.

26. Identify the difference between page and segment.

27. Define seek time and rotational latency.

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

28. a. Theorize in detail about interrupts and its types.

(OR)

b. Compare multiprocessing batch system and time sharing systems.

29. a. With its transition diagram explain in detail about five state model.

(OR)

b. List out the attribute of process control information and explain in detail.

30. a. Explain the challenges faced by operating system in achieving concurrency in multiprogramming and multiprocessing.

(OR)

b. Theorize the semaphore mechanism and explain briefly with an example.

31. a. List out the memory partitioning techniques and explain in detail.

(OR)

b. Discuss how logical to physical address translation is happening is paging and explain in detail about paging with example.

32. a. What is buffering? List out the various I/O buffering schemes and discuss in detail.

(OR)

b. Identify the criteria for choosing a file organization and outline the fundamental file organization in detail.

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