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D 72391 (Pages : 3) Name.....

Reg. No.....

THIRD SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2014

(UG-CCSS)

Computer Science—Core Course

CS 3B 05—FUNDAMENTALS OF OPERATING SYSTEMS

(2012 Admission onwards)

Time : Three Hours Maximum : 30 Weightage

I. Answer the following :—

1 The systems which allows only one process execution at a time, are called :

(a) Uniprogramming systems. (b) Uniprocessing systems.

(c) Unitasking systems. (d) None of the mentioned.

2 The number of processes completed per unit time is known as ————.

3 The scheduling in which CPU is allocated to the process with least CPU burst time is called ————.

4 Mutual exclusion can be provided by the ;

(a) Mutex locks. (b) Binary semaphores.

(c) Both (a) and (b). (d) None of the mentioned.

5 ———— is a technique of improving the priority of processes waiting in queue for CPU allocation.

6 Process synchronization canbe done on :

(a) Hardware level. (b) Software level.

(c) Both (a) and (b). (d) None of the mentioned.

7 The interval from the time of submission of a process to the time of completion is termed as :

(a) Waiting time. (b) Turnaround time.

(c) Response time. (d) Throughput.

8 The memory allocation scheme subject to external fragmentation is ————.

(a) Segmentation. (b) Swapping.

(c) Pure demand paging. (d) Contiguous partition.

9 Which one of the following is the deadlock avoidance algorithm ?

(a) Banker's algorithm. (b) Round-robin algorithm.

(c) Elevator algorithm. (d) Karn's algorithm.

10 Logical memory is broken into blocks of the same size called ———.

(a) Frames. (b) Pages.

(c) Backing store. (d) None of these.

11 To avoid race condition, the maximum number of processes that may be simultaneously insid the critical section is :

(a) 0. (b) 1.

(c) 2. (d) More than 2.

12 The ——— table contains the base address of each page in physical memory.

(a) Process. (b) Memory.

(c) Page. (d) Frame.

(12 × ¼ = 3 weightage

II. Answer *all* questions :

13 What is multiprogramming ?

14 Define context switching.

15 What is meant by system call ?

16 What is meant by physical address ?

17 What is demand paging ?

18 Define a PCB.

19 What is a semaphore ?

20 What are interrupts ? How they are handled by the OS ?

21 What are interactive processes ?

(9 × 1 = 9 weightag

III. Answer any *five* questions :

22 Explain critical section problem ?

23 Write notes on evolution of OS.

24 What is deadlock ? What are the conditions necessary for deadlock ?

25 What is meant by interprocess communication ? Explain the two fundamental models of IP

26 Define deadlocks. Explain necessary conditions for deadlock.

27 How semaphore implement mutual exclusion ?

28 What are the disadvantages of FCFS scheduling algorithm as compared to SJF schedulir algorithm ?

(5 × 2 = 10 weightag

IV. Answer any *two* questions :

29 What is meant by scheduling ? What are the different scheduling criterias ? Explain any pre-emptive and non-pre-emptive scheduling algorithms.

30 Explain deadlock detection, deadlock prevention and deadlock avoidance with necessary algorithms.

31 What is demand paging ? Explain the basic concept and performance of demand paging.

(2 × 4 = 8 weightage)