Reg. No. : | | | | | | | | | | |

Question Paper Code: 93023

B.E./B.Tech. DEGREE EXAMINATION, DEC 2020

Third Semester

Computer Science Engineering

19UCS305 - OPERATING SYSTEMS

(Regulation 2015)

Duration: One hour Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

1. For reading input, which of the following system call is used? CO1- R

   (a) write (b) rd (c) read (d) change.

2. The state of a process is stored in its _____ CO1- R

   (a) Registers (b) PCB (c) Source code (d) Memory.

3. List of free holes: 12MB, 22MB, 18MB, 8MB, 14MB, 36MB, the size of the data to be inserted is 15MB. Identify in which hole the memory block will be inserted in best fit algorithm CO2- U

   (a) 36MB (b) 22MB (c) 18MB (d) 12MB

4. In which type sender can consciously send data without waiting for anyone_____. CO2- U

   (a) Blocking send (b)) Non-blocking send

   (c) Blocking receive (d) Non blocking receive

5. With relocation and limit registers, each logical address must be _____ the limit register. CO3- R

   (c) less than (b) equal to (c) greater than (d) none of the mentioned

6. The aim of creating page replacement algorithms is to _____ CO4- R

   (a) replace pages faster (b) increase the page fault rate

   (c) decrease the page fault rate (d) to allocate multiple pages to processes

7. Which of the following conditions must be satisfied to solve the critical section problem? CO5- R

(a) Mutual Exclusion (b) Progress

(c) Bounded Waiting (d) All of the mentioned

8. For a deadlock to arise, which of the following conditions must hold simultaneously? CO5- R

(a) Mutual exclusion (b) No preemption

(c) Hold and wait (d) All of the mentioned

9. _____ is a unique tag, usually a number identifies the file within the file system. CO6- R

(a) File identifier (b) File name (c) File type (d) None of the mentioned

10. File type can be represented by _____ CO6- R

(a) file name (b) file extension (c) file identifier (d) none of the mentioned

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

11. An user has 20 processes to execute and get output. He is in search of a good operating system. Provide solution to his problem by comparing multiprogramming system and time sharing system. CO1-App (8)

12. Assume an operating system maps user-level threads to the kernel using the many-to-many model where the mapping is done through LWPs. Furthermore, the system allows the developers to create real-time threads. Is it necessary to bound a real-time threads to an LWP? CO2 - App (8)

13. The order of pages needed is given identify the page fault of the following algorithms. (i) FIFO (ii) Optimal (iii) LRU CO4- App (8)

Pages needed: 7 0 1 2 0 3 0 4 2 3 0

Page frame is 3

14. Consider there is a buffer which can store maximum of 5 processes. The Instruction which is producing the process and the CPU which is consuming the process at the same time. Explain its functionality with pseudo code. CO5-App (8)

15. Compare the functionalities of FCFS, SSTF, CSAN and C-LOOK disk scheduling algorithms with an example for each. CO5- App (8)