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**3rd Sem. / Computer / I-T / G.E.**

**Subject : Operating System**

Time : 3 Hrs.

M.M. : 100

### **SECTION-A**

**Note:** Objective type questions. All questions are compulsory (10x1=10)

**(Course Outcome/CO)**

- Q.1 Tell one process state. (CO-2)
- Q.2 Give one example of operating system. (CO-1)
- Q.3 Keyboard is an output device (T/F). (CO-6)
- Q.4 FCFS stands for \_\_\_\_\_. (CO-3)
- Q.5 \_\_\_\_\_ is type of System Call. (CO-1)
- Q.6 \_\_\_\_\_ is an example of shared device. (CO-6)
- Q.7 Unix was developed by \_\_\_\_\_. (CO-8)

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Q.8 Paging is used to remove fragmentation(T/F) (CO-6)

Q.9 PCB stands for \_\_\_\_\_. (CO-2)

Q.10 Mutual Exclusion is a condition for deadlock. (T/F). (CO-5)

### **SECTION-B**

**Note:** Very Short answer type questions. Attempt any ten parts 10x2=20

- Q.11 List various preemptive and non- preemptive algorithm. (CO-3)
- Q.12 Describe Process Synchronization. (CO-4)
- Q.13 Describe methods for handling deadlock. (CO-5)
- Q.14 Define Swapping. (CO-6)
- Q.15 List two disadvantages of paging. (CO-6)
- Q.16 List various types of file system. (CO-8)
- Q.17 List two simple filter command in Linux. (CO-9)
- Q.18 What are dedicated devices. (CO-7)

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- Q.19 Define Operating System. (CO-1)
- Q.20 Describe the role of CPU Scheduler. (CO-3)
- Q.21 Define Virtual memory. (CO-7)
- Q.22 Mkdir and Lx command is used for \_\_\_\_\_ and \_\_\_\_\_. (CO-9)

### SECTION-C

**Note:** Short answer type questions. Attempt any eight questions. 8x5=40

- Q.23 Differentiate between dedicated and shared devices. (CO-7)
- Q.24 List various conditions for deadlock to occur. (CO-5)
- Q.25 Explain any four Linux commands. (CO-9)
- Q.26 Write a shell script to find the factorial of a number. (CO-10)
- Q.27 List various operating system services. (CO-1)
- Q.28 Explain various memory allocation techniques. (CO-6)

- Q.29 Describe SPOOLING. (CO-6)
- Q.30 Why paging is used. What are its advantages. (CO-6)
- Q.31 Describe Linux and its Structure. (CO-8)
- Q.32 Explain different types of System Call. (CO-1)

### SECTION-D

**Note:** Long answer type questions. Attempt any three questions. 3x10=30

- Q.33 Define deadlock. What are its conditions to occur. How it can be prevented. (CO-5)
- Q.34 Define Process and process synchronisation. Explain various process states. (CO-2)
- Q.35 Write a note on (a) Fragmentation (b) Scheduling Algorithm. (CO-6)
- Q.36 Why page replacement algorithm are used. Explain any two page replacement algorithm. (CO-6)

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**SECTION-A**

**Note:**Objective type questions. All questions are compulsory (10x1=10)

**(Course Outcome/CO)**

- Q.1 List two operating system. (CO-1)
- Q.2 Define System Software (CO-1)
- Q.3 Expand PCB. (CO-2)
- Q.4 Define Segmentation. (CO-6)
- Q.5 Give one example of shared device. (CO-5)
- Q.6 Hold and wait is a condition for deadlock. (T/F) (CO-5)
- Q.7 Write one example of dedicated device.(CO-4)
- Q.8 \_\_\_\_\_is an example of I/O device. (CO-4)

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Q.9 UNIX is a \_\_\_\_\_ O.S. (GUI/NON GUI) (CO-8)

Q.10 Create process is a \_\_\_\_\_. (CO-2)

**SECTION-B**

**Note:**Very Short answer type questions. Attempt any ten parts 10x2=20

- Q.11 List types of O.S. (CO-1)
- Q.12 Define Virtual Machine. (CO-2)
- Q.13 Differentiate program and process. (CO-2)
- Q.14 Define job scheduler. (CO-3)
- Q.15 Define deadlock. (CO-5)
- Q.16 Define O/I devices. (CO-4)
- Q.17 Define buffering (CO-6)
- Q.18 Write two communication commands of Linux (CO-9)
- Q.19 Write two states of Banker's algorithm. (CO-2)
- Q.20 Define process Synchronization. (CO-2)
- Q.21 Is commands is used for\_\_\_\_\_ (CO-9)
- Q.22 Write two disadvantages of paging. (CO-6)

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## SECTION-C

**Note:** Short answer type questions. Attempt any eight questions. 8x5=40

- Q.23 Write five characteristics of O.S. (CO-1)
- Q.24 Explain in brief operating system structure. (CO-1)
- Q.25 Different process states with diagram. (CO-2)
- Q.26 Explain inter process communication. (CO-4)
- Q.27 Explain different types of file system. (CO-1)
- Q.28 Explain disadvantage of paging. (CO-6)
- Q.29 Write a shell script to find the average of three no. (CO-10)
- Q.30 Explain memory hierarchy in a computer system with the help of a diagram. (CO-6)
- Q.31 Differentiate paging and segmentation. (CO-6)
- Q.32 Differentiate between dedicated devices and shared devices with example. (CO-5)

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## SECTION-D

**Note:** Long answer type questions. Attempt any three questions. 3x10=30

- Q.33 Explain the following Scheduling algorithms:
- (a) FCFS
  - (b) RR
  - (c) SJF (CO-3)
- Q.34 Define deadlock. Explain the conditions for deadlocks. (CO-5)
- Q.35 Why page replacement algorithm are used? Also write five difference between paging & segmentation. (CO-6)
- Q.36 Write a brief note about Linux. Explain structure of linux with the help of diagram. (CO-8)

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**SECTION-A**

**Note:** Objective type questions. All questions are compulsory (10x1=10)

**(Course Outcome/CO)**

- Q.1 Define operating system (CO-1)  
Q.2 List one system cell. (CO-2)  
Q.3 Define FCFS. (CO-3)  
Q.4 Define paging. (CO-6)  
Q.5 Give one example of dedicated device. (CO-5)  
Q.6 Mutual Exclusion is a condition of deadlock. (T/F) (CO-5)  
Q.7 \_\_\_\_\_ is a dedicated device. (CO-4)

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Q.8 \_\_\_\_\_ is an example of memory/storage device. (CO-6)

Q.9 Linux is a \_\_\_\_\_ O.S. (GUI/NON GUI)(CO-8)

Q.10 List two states in banker's algorithm. (CO-2)

**SECTION-B**

**Note:** Very Short answer type questions. Attempt any ten parts 8 10x2=20

- Q.11 Differentiate single user and multiuser OS. (CO-1)  
Q.12 List two O.S. (CO-1)  
Q.13 List one preemptive and one non preemptive scheduling. (CO-3)  
Q.14 Write different process states. (CO-2)  
Q.15 Write two examples of shared devices. (CO-5)  
Q.16 Define spooling. (CO-6)  
Q.17 Define storage device (CO-6)  
Q.18 Write two filter commands of linux. (CO-9)

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- Q.19 Define inter process communication. (CO-4)  
Q.20 MK Dir command is used for \_\_\_\_\_. (CO-9)  
Q.21 Define priority scheduling. (CO-3)  
Q.22 Define file system. (CO-1)

### SECTION-C

**Note:** Short answer type questions. Attempt any five questions. 5x8=40

- Q.23 Write any five O.S services. (CO-1)  
Q.24 Define any five system call. (CO-1)  
Q.25 Explain process synchronization. (CO-4)  
Q.26 Explain three operations on process. (CO-2)  
Q.27 Differentiate logical file system and physical file system. (CO-1)  
Q.28 Explain the concept of virtual memory. (CO-6)  
Q.29 Write a shell script to find factorial of a no. (CO-10)  
Q.30 Explain two memory allocation techniques. (CO-6)

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- Q.31 Define segmentation. Write its advantages. (CO-6)  
Q.32 Explain the concept of spooling. (CO-6)

### SECTION-D

**Note:** Long answer type questions. Attempt any three questions. 2x10=30

- Q.33 Explain inter process communication. Write in brief about shared memory and message passing. (CO-4)  
Q.34 What is deadlock? Explain various conditions to prevent deadlocks. (CO-5)  
Q.35 Explain paging? Explain any two page replacement algorithm. (CO-6)  
Q.36 Explain the following Linux command with examples:- (CO-9)  
i) MK dir      ii) LS      iii) Who  
iv) Chmod      v) Cat

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**SECTION-A**

**Note:** Multiple choice Questions. All questions are compulsory (10x1 = 10)

**(Course Outcome/CO)**

Q.1 Which of the following is an operating system? (CO-1)

- a) Oracle                      b) Unix
- c) MS-access                d) Foxpro

Q.2 How many states of a process are there? (CO-2)

- a) 6                              b) 4
- c) 2                              d) Unlimited

Q.3 Which of the following is not a scheduling algorithm.

- a) First come first serve (CO-3)
- b) Round robin
- c) Shortest remaining time rest
- d) Bakers algorithm

Q.4 A process said to be in \_\_\_\_\_ state if it was waiting for an event that will never occur. (CO-5)

- a) Safe                        b) Unsafe
- c) Starvation                d) Dead lock

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Q.5 Which one of the following is the address generated by CPU? (CO-6)

- a) Physical address      b) Absolute address
- c) Logical address        d) None of the mentioned

Q.6 Memory management technique in which system stores and retrieves data from secondary storage for use in main memory is called: (CO-6)

- a) Fragmentation        b) Paging
- c) Mapping                d) None of the above

Q.7 Which scheduling algorithm allocates the CPU first to the process that request the CPU first? (CO-2)

- a) First-come, first-served scheduling
- b) Shortest: job scheduling
- c) Priority Scheduling
- d) None of the mentioned

Q.8 In priority scheduling algorithm: (CO-3)

- a) CPU is allocated to the process with the highest priority
- b) CPU is allocated to the process with lowest priority
- c) Equal priority process can not be scheduled
- d) None of the above

Q.9 Who developed linux software? (CO-8)

- a) Dennis M. Ritchie      b) Linus torvalds
- c) Bjarne stroustrup      d) Grace Murray Hopper

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Q.10 Which command is used to clear the screen or terminal in linux? (CO-9)

- a) Chsh                      b) Chown  
c) Clear                      d) Clean

### SECTION-B

**Note:** Objective type questions. All questions are compulsory. (10x1 = 10)

Q.11 Linux is purely single user operating system (True/false). (CO-1)

Q.12 Name any two states of process. (CO-2)

Q.13 Name any two output devices. (CO-2)

Q.14 A process have \_\_\_\_ states. (CO-2)

Q.15 The first step in deadlock recovery is to identify \_\_\_\_ process. (CO-5)

Q.16 Worst fit algorithm is the best for selecting free area of memory for partition(T/F). (CO-6)

Q.17 CMOS stands for. (CO-7)

Q.18 Printer is a \_\_\_\_ device. (CO-7)

Q.19 Printer produces \_\_\_\_ copy. (CO-7)

Q.20 \_\_\_\_ is an example of multi user operating system. (CO-9)

### SECTION-C

**Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5 = 60)

Q.21 What do you understand by system call . (CO-1)

Q.22 Explain benefits of virtual machine. (CO-1)

Q.23 What is process control block. (CO-2)

Q.24 Give name of condition for deadlock to occur. (CO-5)

Q.25 What is a physical address . (CO-6)

Q.26 What are the advantages of partitioning. (CO-6)

Q.27 Write short note on paging. (CO-6)

Q.28 What do you understand by virtual memory. (CO-7)

Q.29 What are shared devices. (CO-7)

Q.30 What do you mean by buffering. (CO-7)

Q.31 Explain types and use of scanner. (CO-7)

Q.32 Explain logical file system. (CO-7)

Q.33 Explain C shell in linux. (CO-9)

Q.34 What is the purpose of grep command. (CO-9)

Q.35 What is a light pen. (CO-7)

### SECTION-D

**Note:** Long answer type questions. Attempt any two out of three questions. (2x10 = 20)

Q.36 What are deadlocks? How deadlocks can be avoided. (CO-5)

Q.37 Explain the file structure of linux. (CO-8)

Q.38 Define the term operating system and explain various types of operating systems. (CO-1)

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**Subject : Operating Systems**

M.M. : 100

Time : 3 Hrs.

**SECTION-A**

**Note:** Multiple choice questions. All questions are compulsory (10x1=10)

- Q.1 DOS stand for  
a) Disk Operating System ✓  
b) Disk Operating Signal  
c) Disk Orientation System  
d) Disk Orientational Signal
- Q.2 Which command is used to make the directory in DOS?  
a) Del\*. \*  
b) MD ✓  
c) RD  
d) Erase
- Q.3 Which one of the following is the address generated by CPU?  
a) Physical address  
b) Absolute address  
c) Logical address ✓  
d) None of the mentioned
- Q.4 Run time mapping from virtual to physical address is done by \_\_\_\_\_.  
a) Memory management ✓  
b) CPU  
c) PCI  
d) None of the mentioned

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Q.5 In Unix, Which system call creates the new process? ✓

- a) fork ✓  
b) Create  
c) new  
d) None of the mentioned
- Q.6 Memory management technique in which system stores and retrieves data from secondary storage for use in main memory is called?  
a) Fragmentation  
b) Paging  
c) Mapping ✓  
d) None of the mentioned
- Q.7 A set of process is in deadlock if \_\_\_\_\_.  
a) ✓ each process is blocked and will remain so forever  
b) each process is terminated  
c) all process are trying to kill each other  
d) none of the mentioned.
- Q.8 The processes that are residing in main memory and are ready and waiting to execute are kept on this called \_\_\_\_\_.  
a) job queue  
b) ✓ ready queue  
c) execution queue  
d) process queue
- Q.9 The \_\_\_\_\_ swaps processes in and out of the memory.  
a) ✓ Memory manager  
b) CPU  
c) CPU manager  
d) User
- Q.10 \_\_\_\_\_ is the concept in which a process is copied into the main memory from the secondary memory according to the requirement  
a) Paging  
b) Demand paging  
c) Segmentation  
d) ✓ Swapping

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### SECTION-B

**Note:** Objective type questions. All questions are compulsory. 10x1=10

- Q.11 What is operating system
- Q.12 Define GUI
- Q.13 What is the difference between process and programs?
- Q.14 What is virtual memory?
- Q.15 What is Process Control Block?
- Q.16 What is deadlock? ✓
- Q.17 What is fragmentation?
- Q.18 What is file? ✓
- Q.19 What is spooling?
- Q.20 What is the difference between internal commands and external commands?

### SECTION-C

**Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. 12x5=60

- Q.21 What is interrupt? How it is handled by OS
- Q.22 ✓ What is Short-term scheduler(CPU scheduler) describes with diagram
- Q.23 Differentiate between Shortest Job first (SJF) scheduling and Shortest Remaining Time Next (SRTN) scheduling. <https://www.hsbteonline.com>
- Q.24 Define process. Draw the process life cycle & explain in briefly.
- Q.25 ✓ What is Preemptive CPU scheduling? How it is different from Non Preemptive CPU scheduling.
- Q.26 Explain deadlock detection & recovery.
- Q.27 Write a short note on device controller.
- Q.28 Define Memory mapped I/O

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- Q.29 What are the difference between Real Time System and Timesharing System. ✓
- Q.30 What is Unix ? Write down any four features of UNIX. ✓
- Q.31 What are the different accessing methods of a file?
- Q.32 What are the operations that can be performed on a directory?
- Q.33 Explain time slicing. How its duration affects the overall working of the system.
- Q.34 What is segmentation?
- Q.35 Explain the DMA

### SECTION-D

**Note:** Long answer type questions. Attempt any two questions out of three questions. 2x10=20

- Q.36 What is operating System ? Explain in details the different services provided by the Operating System.
- Q.37 ✓ What is process scheduling & process scheduler? Differentiate between Long term scheduler Short-term scheduler & Mid-term scheduler with diagram. Also discuss the job queue , Ready Queue & Device Queue.
- Q.38 What is Fragmentation? Differentiate between External & Internal fragmentation with example.

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