Tribhuvan University Bachelor in computer Application (BCA) Course

Title: Operating System Semester 4th Time: 3 hours

Full Mark 60 Pass Mark 24

MODEL SET I

Group A

Attempt all the questions.
[10x1 = 10]

Circle (O) the correct answer.

A
is a collection of electronics that can operate a port, a bus, or a device? **(a) Controller** (b) Driver (c) Host (d) Bus The hardware mechanism that allows a device to notify the cpu is called (a) Polling **(b) Interrupt** (c) Driver

(d) Controlling iii. What is us**ed to protect network** from outside internet access?

(a) A trusted Antivirus (b) 24 hours sacanning for virus **(c) Firewall to seprate trusted and un-trusted network** (d) Deny users access to websites which can potentially causes security leak. How do viruses avoid basic pattern match of antivirus? (a) They are encrypted (b) They act with special permissions **(c) They modify themselves** (d) None of the mentioned What will happen in the two level directory structure?

(a) Each user has his/her own user file directory (b) The system doesnot its own master file directory (c) All of the mentioned (d) None of the mentioned

in fixed size partition, the degree of multiprogramming is bounded by **(a) The number of partitions** (b) The cpu utilizations (c) The memory size

(d) All of the mentioned vii. A solution to the problem of external fragmentation is

(a) Compaction

viji.
(b) Larger memory space (c) Smaller memory space (d) None of the mentioned The circular wait condition can be prevented by **(a) Defining a linear ordering of resource types** (b) Using thread (c) Using pipes (d) All of the mentioned Which one of

the following is the dead lock avoidance algorithm? **(a) Banker's algorithm** (b) Round-robin algorithm (c) Elevator algorithm (d) Karn's algorithm What is the drawback of bankers algorithm? (a) In advance process rarely know howmuch resources they will need (b) The number of process change as time progress (c) Resource once available can disappear **(d) All of the mentioned**

A

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MODEL SET II

Group A

Attempt all the questions.
[10x1 = 10]

Circle (O) the correct answer.

iii.

The cpu hardware has a write called
that the cpu Sense after executing every instruction.

(a) Interrupt request line (b) Interrupt bus (c) Interrupt receive line

(d) Interrupt sense line The data structure used for file directory is called __?

(a) Mount table **(b) Hash table** (c) File table

(d) Process table In distributed systems, what will the transaction coordinator do?

(a) Starts the execution of transaction (b) Breaks the transaction into number of sub transactions (c) Coordinates the termination of the transaction

(d) All of the mentioned What is not an important part of security Protection?

(a) Large amount of RAM to support antivirus (b) Strong **paswords** (c) Audit log periodically

(d) Scan for unauthorized programs in system directories What will happen in the single level directory?

(a) All directories must have unique names **(b) All files must have unique names** (c) All files must have unique owners

(d) All of the mentioned External fragmentation will not occur when?

(a) First fit is used (b) Best fit is used (c) Worst fit is used
iv.

V.

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vii.

viii.

(d) No Matter which algorithm is used, it will always occur For an effective operating system, when to check for deadlock?

(a) Every time a resource request is made (b) At fixed time interval **(c) Every time a resource request is made at fixed time intervals.**

(d) None of the mentioned To avoid deadlock

(a) There must be a fixed number of resources to allocate (b) Resource allocation must

be done only once (c) All deadlocked process must be aborted

(d) Inversion technique can be used. The request and release of resources are _ _?

(a) Command line **statements** (b) Interrupts **(c) System calls**

(d) Special programs For a deadlock to arise, which of the following conditions must hold simultaneously?

(a) Mutual Exclusion (b) No Preemption (c) Hold and wait **(d) All of the mentioned**
IX.

Notes Nepal

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MODEL SET lll

Group A

Attempt all the questions.
[10x1 = 10

Circle (O) the correct answer.

In which types of allocation method each file occupy a set of contiguous block on the disk? **(a) Contiguous allocation** (b) Dynamic storage allocation (c) Linked allocation (d) Indexed allocation

The DMA transfers are performed by a control circuit called as? (a) Device interface **(b) DMA Controller** (c) Data Controller (d) Over-looker In distributed systems, a logical clock is associated with (a) Each instruction

LA **(b) Each process** (c) Each register (d) None of the mentioned For proper synchronization in distributed systems (a) Prevention from the deadlock is must (b) Prevention from the starvation is must **(c) Prevention from the deadlock & starvation is must** (d) None of the mentioned The larger the block size, the

the internal fragmentation. **(a) Greater** (b) Lesser (c) Same (d) None of the mentioned For a direct access file_ (a) There are restrictions on the order of reading and writing **(b) There are no restrictions on the order of reading and writing** (c) Access is restricted permission wise (d) Access is not restricted permission wise The data structure used for file directory is called

Vi.

vii.

viii.

(a) Mount table (b) Has**h table** (c) File table (d) Process table In which type of allocation method each file occupy a set of contiguous block on the disk? **(a) Contiguous allocation** (b) Dynamic storage allocation (c) Linked allocation (d) Indexed allocation Deadlock preventation is a set of methods **(a) To ensure that at least one of the necessary conditions cannot hod** (b) To ensure that all of th**e necessary c**onditions donot hold (c) To decide if t**he requested resource for a process have to b**e given or not (d) To recover from a deadlock Environment in which programs of the computer system are executed is called **(a) Operating system** (b) Nodes (c) Clus**tered system** (d) Both a and b

Notes Nepal

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MODEL SET IV

Group A Attempt all the questions.

[10x1 = 10

Circle (O) the correct answer.

After the completion of DMA transfer the processor is notifed by. **(a) Acknowledge Signal (b) Interrupt signal** (c) WMFC signal (d) None of mentioned What is inter-process communication? (a) Communication with in the process (b) Communication **between two process** (c) Communication **between two threads of same process** (d) None of the mentioned The controller use to help with the transfer when handling network interfaces **(a) Input buffering storage** (b) Signal enhancers (c) Bridge Circuits (d) All of the mentioned Is the semaphore value is negative **(a) Its magnitude is the number of process waiting on that semaphore** (b) Its is invalid (c) No operation can be further performed on it until the signal operation is

performed on it (d) None of the mentioned An 1/0 bound program will typically have (a) A few very short CPU bursts (b) Many very short I/O bursts **(c) Many very short CPU bursts** (d) A few very short 1/0 bursts The switching of the cpu from one process or thread to another is called? (a) Process switch (b) Task switch (c) Context switch

 (d) All of the mentioned vii. In the layered approach of operating system (a) Bottom layer (0) is the user interface

viii.

(b) Highest layer (N) is the user interface (c) Bottom layer (N) is the Hardware (d) Highest Layer (N) is the hardware The kernel is of user threads (a) A part of (b) The creator of **(c) Unaware of** (d) Aware of **System resources of co**muter system can be utilized better in (a) Single program environment (b) Dual program environment (c) Core environment **(d) Multi program environment**

BCA

Notes Nepal

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MODEL SET V

Group A Attempt all the questions.

[10x1 = 10)

Circle (O) the correct answer.

Which system call returns thee process identifier of a terminated child? **(a) Wait** (b) Exit (c) Fork (d) Get Semaphore is a/an

to sole the critical section problem. (a) Hardware for a system (b) Special pro**gram for system (c) Intiger variable** (d) None of the mentioned Because the kernel thread management is done by the operating system its self. (a) Kernel t**hreads are faster to create than user threads (b) Kernel threads are slower to create than user threads** (c) Kernel threads are easier to manage as well as create then user threads (d) None of the mentioned If a kernel thread performs a b blocking system call **(a) The kernel can schedule another thread in the application for execution** (b) The kernel cannot schedule another thread in the same application for execution (c) The kernel must schedule another thread of a different application for execution (d) The kernel must schedule another thread for the same application on a different

processor. Interfaces of the operating system provides (a) Optimization (b) Designing (c) Reusability (d) Portability Environment for execution of programs is provided by (a) Inputs (b) Outputs **(c) Operating system** (d) Memory What is true about memory management. (a) Memory management keeps track of each and every memory location

vii.

viii .

(b) It decides which process will get memory at what time (c) It tracks whenever somememory gets freed or unallocated and correspondingly it

updates the status. **(d) All of the above.** The set of all physical addesses corresponding to these logical addresses is referred to as? (a) Logical address space **(b) Physical address space** (c) MMU Address space (d) Virtual address space. Swapping is also known as a (a) Techni**que for memory management (b) Technique for memory compaction** (c) Technique **for memory addresse** (d) Technique for dynamic linking How many types of fragmentation are there? **(a) 2** (b) 3 (c) 4 (d) 5

MODEL SET VI

Group A The controller use to help with the transfers when handling network interfaces.

(a) Input buffer storage (b) Signal enhancers (c) Bbridge circuits (d) All of the mentioned The capacity of a sy**stem to adapt the increased service load is ca**lled ...... **(a) Scalability** (b) Tolerance (c) Capacity (d) None of the mentioned Internet provides ____for remote login **(a) telnet** (b) http (c) ftp (d) rpc **when an entire committed transaction is completed_**

(a) it is stored in the memory **(b) it is removed from the log file** (c) it is redone (d) none of the mentioned A state is safe, if---------

(a) The system doesnot crash due to deadlock occurrence **(b) The system can allocated resource to each process in some order and still avoid a deadlock** (c) The state keeps the sy**stem protected and safe** (d) All of the mentioned vi. A process can be terminated due to -------> (a) Normal exit (b) Fatal error (c) killed by another process (d) All of **the mentioned** vii. All unsafe states are viii. Deadlocks **(a) Not deadlocks** (b) Fatal (c) None of the mentioned İX: A system is in the safe state is **(a) The system can allocate resourcces to each process in some order and still avoid a deadlock** (b) There exist a safe sequence (c) All of the mentioned (d) None of the mentioned

MODEL SET VII

Group A The set of track that's a**re at one arm position make up a** (a) Magnetic disks (b) Electrical disks (c) Assemblies **(d) Cylinders** The time taken to move the disk arm to the desired cylinder is called th**e** (a) Positioning time (b) Random access time **(c) Seek time** (d) Rotational latency Network operating system runs on a**) server b) Every system in the network** c) Both server and every system in the network d) None of the mentioned Which routing technique is used in a distributed system (a) Fixed routing (b) Virtual routing (c) Dynamic routing **(d) All of the mentioned**

iv.

V. In the distributed system, link and site failure is detected by----- (a) Polling **(b) Handshaking** (c) Token passing (d) None of the mentioned vi. File type can be represented by-------- (a) File name **(b) File extension** (c) File identifier (d) None of the mentioned vii. What is the mounting of file system? (a) Crating of a file system (b) Deleting a file system **(c) Attaching portion of the file system into a directory structure** (d) Removing the portion of the file system into a directory structure viii. Once the changes are written to the log, they are condifered to be **(a) Committed** (b) Aborted (c) Completed (d) None of the mentioned İx. The initial program that is run when the comuter is powered up is called (a) Boot Program (b) Boot loader (c) Initialize **(d)**

Bootstrap program x. How does the software trigger an interrupt? (a) Sending signals to CPU through bus **(b) Executing a secial operation called system call** (c) Executing a special program call**ed system program.**

Group A Why is one time password safe? (a) It is easy to generated (b) It cannot be shared **(c) It is different for every access** (d) It is comlex encrypted password Which happens firist authorization or authentication? **(a) Authorization** (b) Authentication (c) authorization or authentication are same (d) none of the mentioned . . . .is a unique tag, usually a number identifies the file within the file system.

(a) File identifier (b) File name (c) File type

(d) None of the mentioned **iv. To create** a file. (a) Allocate the sace in file system (b) Make an entry for new file in directory **(c) Allocate the space in file system, & make an entry for new file in directory.** (d) None of the mentioned V. The set of tracks that are at one arm position make up a (a) Magnetic disks (b) Electrical disks (c) Assemblies **(d) Cylinders vi**. The time taken to move the disk arm to the desired cylinder is called the ? (a) Positioning time (b) Random access time **(c) Seek time** (d) Rational latency **vii**. Operating system maintains the page table for __? **(a) Each process** (b) Each thread (c) Each instruction (d) Each address **viii.** In contigious memory allocation **(a) Each process is contained in a single contiguous section of memory** (b) All processes are contained in a single contiguous section of **memory** (c) The memory space is contiguous (d) None of the mentioned **ix.** In which type of fragmentation , memory block assigned to process is bigger some portion of

memory is left unused as it cannot be used y another process. (a) External fragmentation **(b) Internal fragmentation** (c) Both A and B (d) None of the above

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pus memory allocation

X.
is a memory management technique in which process address space is broken into blocks of the same size.

A. Fragmentation B. Frames **C. Paging** D. Address Translation

MODEL SET IX

Group A How does an antivirus of today identify viruses. **(a) Previously known patterns** (b) It can detect unknown patterns (c) It can take high priority to increase scanning speed (d) None of the mentioned ii. What is are two safe comutiing practices? **(a) Not to open software from unknown vendors** (b) Open and execute programs in admin leve/root (c) Open and execute programs in presence of antivirus (d) None of the mentioned iii. The OS maintatins allPCBs in? **(a) Process Scheduling Queues** (b) Job queue (c) Ready Queue (d) Device Queue iv. Repeated Question V. Which is not a type of schedulers? (a) Long term scheduler (b) Short term schedulers (c) Medium-term schedulers (d) None of the above vi. When the suspended process is moved to the secondary storage. This process is called (a) Process mix **(b) Swapping** (c) Swap-in (d) Swap-out vii. Which of the following information is stored when the process is switched ? (a) 1/0 state information (b) Accounting information (c) Base and limit rregister value **(d) All of the above**

Viji. If the disk head is located initially a 32, find the number of disk moves required with FCFS if the disk queue of 1/0 block requests are 98,37,14,124,35,37

(a) 239 (b) 310 **(c) 321** (d) 325 viii.

Group A

Attempt all the questions.
[10x1 = 10]

Circle (O) the correct answer.

1. To access the services of operating system, the interface is provided by the

a. System calls

c. Library b. API

d. Assembly instruction 2. Which of the following does not contain process control block (PCB)?

a. Code

c. Stack **b. Bootstrap program**

d. Data 3. Which of the following is not state of process ?

a. Running

b. Old c. New

d. Waiting 4. Which process can be affected by other processes executing in the system?

a. Cooperating process

c. Parent process b. Init Process

d. Child Process 5. When several processes access the same data concurrently and the outcome of the execution

depends on the particular order in which the access takes place, is called a. Dynamic condition

c. Race Condition b. Critical condition

d. Static Condition 6. Which one of the following is synchronization tool?

a. Thread

c. Pipe **b. Semaphore**

d. Socket 7. When high priority task is indirectly preempted by medium priority task effectively

inverting the relative priority of the two tasks, the scenario is called. **a. Priority inversion**

c. Priority removal b. Priority exchange

d. priority modification 8. Which of the following do not belong to queues for process?

a. Job queue

c. PCB queue b. Device queue

d. Ready queue 9. Which module gives control of the CPU to the process selected by the short-term scheduler?

a. Dispatcher

c. interrupt b. Scheduler

d. processor 10. The interval from the time of submission of a process to the time of

completion is termed as..….

a. Waiting time

c. Turnaround time b. Response time

d. Throughput