

# **Department of Computer Science**

## *Gujarat University*



## *Certificate*

Roll No: 13

Seat No: \_\_\_\_\_

*This is to certify that Mr./Ms. Makhija Rakesh Jeramdas student of MCA Semester – III has duly completed his/her term work for the semester ending in December 2020, in the subject of Operating System towards partial fulfillment of his/her Degree of Masters in Computer Applications.*

10/12/2020  
Date of Submission

*Internal Faculty*

*Head of Department*

Department Of Computer Science  
Rollwala Computer Centre  
Gujarat University

MCA – 3

**Subject:** - Operating system

Name: - Makhija Rakesh Jeramdas

**Roll No.: - 13**      **Exam Seat No.: - \_\_\_\_\_**

## Assignment :- 1

### 1) Base Address.

- An address that is used as the origin in the calculation of addresses in the execution of a computer program.

### 2) Batch Processing.

- Pertaining to the technique of executing a set of computer programs such that each is completed before the next program of the set is started.

### 3) Binary semaphore.

- A semaphore that takes on only the values 0 and 1. A binary semaphore allows only one process or thread to have access to a shared critical resource at a time.

### 4) Block.

- 1) A collection of contiguous records that are recorded as a unit; the units are separated by interblock gaps.
- 2) A group of bits that are transmitted as a unit.

### 5) B-tree.

- A technique for organizing indexes. In order to keep access time to a minimum, it stores the data keys in a balanced hierarchy that continually realigns itself as items are inserted and deleted. Thus, all nodes always have a similar number of keys.

### 6) Busy waiting.

- The repeated execution of a loop of code while waiting for an event to occur.

7) Cache memory.

- A memory that is smaller and faster than main memory and that is interposed between the processor and main memory. The cache acts as a buffer for recently used memory locations.

8) CPU (Central Processing Unit).

- That portion of a computer that fetches and executes instructions. It consists of an Arithmetic and Logical Unit (ALU), a control unit, and registers. Often simply referred to as a processor.

9) Cluster.

- A group of interconnected, whole computers working together as a unified computing resource that can create the illusion of being one machine. The term whole computer means a system that can run on its own, apart from the cluster.

10) concurrent.

- Pertaining to processes or threads that take place within a common interval of time during which they may have to alternately share common resources.

11) consumable resource.

- A resource that can be created (produced) and destroyed.

(consumed). When a resource is acquired by a process, the resource ceases to exist. Examples of consumable resources are interrupts, signals, messages, and information in I/O buffers.

#### 12) Database.

- A collection of interrelated data, often with controlled redundancy, organized according to a schema to serve one or more applications; the data are stored so that they can be used by different programs without concern for the data structure or organization. A common approach is used to add new data and to modify and retrieve existing data.

#### 13) Deadlock.

- (1) An impasse that occurs when multiple processes are waiting for the availability of a resource that will not become available because it is being held by another process that is in a similar-wait state.
- (2) An impasse that occurs when multiple processes are waiting for an action by or a response from another process that is in a similar wait state.

#### 14) Deadlock avoidance.

- A dynamic technique that examines each new resource request for deadlock. If the new request could lead to a deadlock, then the request is denied.

#### 15) Deadlock detection.

- A technique in which requested resources are always granted when available. Periodically, the operating system tests for deadlock.
- 16) Deadlock prevention.
- A technique that guarantees that a deadlock will not occur. Prevention is achieved by assuring that one of the necessary conditions for deadlock is not met.
- 17) Demand paging.
- The transfer of a page from secondary memory to main memory storage at the moment of need. Compare Prepaging.
- 18) Device drivers.
- An operating system module (usually in the kernel) that deals directly with a device or I/O module.
- 19) Direct Access.
- The capability to obtain data from a storage device or to enter data into a storage device ~~or to control data~~ in a sequence independent of their relative position, by means of addresses that indicate the physical location of the data.
- 20) DMA (Direct Memory Access)
- A form of I/O in which a special module, called a DMA module, controls the exchange of data between main memory and an I/O device. The processor sends a request

for the transfer of a block of data to the DMA module and is interrupted only after the entire block has been transferred.

21) Disabled Interrupt.

- A condition, usually created by the operating system, during which the processor will ignore interrupt request signals of a specified class.

22) Disk allocation table.

- A table that indicates which blocks on secondary storage are free and available for allocation to files.

23) Distributed operating system.

- A common operating system shared by a network of computers. The distributed operating system provides support for interprocess communication, process migration, mutual exclusion, and the prevention or detection of deadlock.

24) Dispatch.

- To allocate time on a processor to jobs or tasks that are ready for execution.

25) Dynamic relocation.

- A process that assigns new absolute addresses to a computer program during execution so that the program may be executed from a different area of main storage.

26) Enabled interrupt.

- A condition, usually created by the operating system, during which the processor will respond to interrupt request signals of a specified class.

27) External fragmentation.

- Occurs when memory is divided into variable-size partitions corresponding to the blocks of data assigned to the memory (e.g., segments in main memory), as segments are moved into and out of the memory, gaps will occur between the occupied portions of memory.

28) File.

- A set of related records treated as a unit.

29) Field.

- (1) Defined logical data that are part of a record.
- (2) The elementary unit of a record that may contain a data item, a data aggregate, a pointer, or a link.

30) FAT (File allocation table).

- A table that indicates the physical location on secondary storage of the space allocated to a file. There is one file allocation table for each file.

31) File management system.

- A set of system software that provides services to users and applications in the use of files, including file access, directory maintenance, and access control.

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32) File organization.

The physical order of records in a file, as determined by the access method used to store and retrieve them.

33) FCFS (First come First served).

- A queuing technique in which the next item to be retrieved is the item that has been in the queue for the longest time.

34) FIFO (First In First Out).

- A queuing technique in which the next item to be retrieved is the item that has been in the queue for the longest time.

35) Hash file.

- A file in which records are accessed according to the values of a key field. Hashing is used to locate a record on the basis of its key value.

36) Hashing.

- The selection of a storage location for an item of data by calculating the address as a function of the contents of the data. This technique complicates the storage allocation function but results in rapid random retrieval.

37) Hit ratio.

- In a two-level memory, the fraction of all memory accesses that are found in the faster memory (e.g., the cache).

38) Indexed Access.

- Pertaining to the organization and accessing of the records of a storage structure through a separate index to the locations of the stored records.

39) Indexed File.

- A file in which records are accessed according to the value of key fields. An index is required that indicates the location of each record on the basis of each key value.

40) Indexed sequential access.

- Pertaining to the organization and accessing of the records of a storage structure through an index of the keys that are stored in arbitrarily partitioned sequential files.

41) Indexed sequential file.

- A file in which records are ordered according to the values of a key field. The main file is supplemented with an index file that contains a partial list of key values; the index provides a lookup capability to quickly reach the vicinity of a desired record.

42) Instruction cycle.

- The time period during which one instruction is fetched from memory and executed when a computer is given an instruction in machine language.

43) Internal fragmentation.

- occurs when memory is divided into fixed-size partitions.

(e.g., page frames in main memory, physical blocks on disk). If a block of data is assigned to one or more partitions, then there may be wasted space in the last partition. This will occur if the last portion of data is smaller than the last partition.

#### 44) Interrupt.

- A suspension of a process, such as the execution of a computer program, caused by an event external to that process and performed in such a way that the process can be resumed.

#### 45) Interrupt handler.

- A routine, generally part of the operating system. When an interrupt occurs, control is transferred to the corresponding interrupt handler, which takes some action in response to the condition that caused the interrupt.

#### 46) Job.

- A set of computational steps packaged to run by a unit.

#### 47) Kernel.

- A portion of the operating system that includes the most heavily used portions of software. Generally, the kernel is maintained permanently in main memory. The kernel runs in a privileged mode and responds to calls from processes and interrupts from devices.

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#### 48) Kernel mode.

- A privileged mode of execution reserved for the kernel of the operating system. Typically, kernel mode allows access to regions of main memory that are unavailable to processes executing in a less-privileged mode, and also enables execution of certain machine instructions that are restricted to the kernel mode. Also referred to as system mode or privileged mode.

#### 49) LIFO (Last In First Out).

- A queuing technique in which the next item to be retrieved is the item most recently placed in the queue.

#### 50) Liveloop.

- A condition in which two or more processes continuously change their state in response to changes in the other process(es) without doing any useful work. This is similar to deadlock in that no progress is made, but it differs in that neither process is blocked or waiting for anything.

#### 51) Logical Address.

- A reference to a memory location independent of the current assignment of data to memory. A translation must be made to a physical address before the ~~memory~~ memory access can be achieved.

#### 52) Logical record.

- A record independent of its physical environment; portion

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of one logical record may be located in different physical records or several logical records or parts of logical records may be located in one physical record.

### 53) Main memory

- Memory that is internal to the computer system, is program addressable, and can be loaded into registers for subsequent execution or processing.

### 54) Malicious software.

- Any software designed to cause damage to or use up the resources of a target computer. Malicious software (malware) is frequently concealed within or masquerades as legitimate software. In some cases, it spreads itself to other computers via e-mail or infected disks. Types of malicious software include viruses, Trojan horses, worms, and hidden software for launching denial-of-service attacks.

### 55) Memory cycle time.

- The time it takes to read one word from or write one word to memory. This is the inverse of the rate at which words can be read from or written to memory.

### 56) Memory partitioning.

- The subdividing of storage into independent sections.

### 57) Microkernel.

- A small privileged operating system core that provides

process scheduling, memory management, and communication services and relies on other processes to perform some of the functions traditionally associated with the operating system kernel.

58) multiprocessor.

- A mode of operation that provides for parallel processing by two or more processors of a multiprocessor.

59) multiprogramming.

- A mode of operation that provides for the interleaved execution of two or more computer programs by a single processor. The same as multitasking, using different terminology.

60) multiprogramming level.

- The number of processes that are partially or fully resident in main memory.

61) multitasking.

- A mode of operation that provides for the concurrent performance or interleaved execution of two or more computer tasks. The same as multiprogramming, using different terminology.

62) mutual exclusion.

- A condition in which there is a set of processes, only one of which is able to access a given resource or perform a given function at any time.

### (63) Operating System.

- Software that controls the execution of programs and that provides services such as resource allocation, scheduling, input/output control, and data management.

### (64) Page.

- In virtual storage, a fixed-length block that has a virtual address and that is transferred as a unit between main memory and secondary memory.

### (65) Page fault.

- Occurs when the page containing a referenced word is not in main memory. This causes an interrupt and requires that the proper page be brought into main memory.

### (66) Page frame.

- A fixed-size contiguous block of main memory used to hold a page.

### (67) Paging

- The transfer of pages between main memory and secondary memory.

### (68) Physical Address.

- The absolute location of a unit of data in memory. (e.g. word or byte in main memory, block on secondary memory)

### (69) Pipe.

- A circular buffer allowing two processes to communicate

on the producers-consumers model. Thus, it is a first-in-first-out queue, written by one process and read by another. In some systems, the pipe is generalized to allow any item in the queue to be selected for consumption.

#### f) preemption.

- Reclaiming a resource from a process before the process has finished using it.

#### f1) Prepaging.

- The retrieval of pages other than the one demanded by a page fault. The hope is that the additional pages will be needed in the near future, conserving disk I/O. ~~compared to~~

#### f2) Process.

- A program in execution. A process is controlled and scheduled by the operating system.

#### f3) Process-control Block.

- The manifestation of a process in an operating system. It is a data structure containing information about the characteristics and state of the process.

#### f4) Process state.

- All of the information that the operating system needs to manage a process and that the processor needs to properly execute the process. The process state includes the contents of the various processor registers, such as the program

counter and data registers; it also includes information of use to the operating system, such as the priority of the process and whether the process is waiting for the completion of a particular I/O event.

#### 75) Processor.

- In a computer, a functional unit that interprets and executes instructions. A processor consists of at least an instruction control unit and an arithmetic unit.

#### 76) Program counters.

- Instruction address registers.

#### 77) Programmed I/O.

- A form of I/O in which the CPU issues an I/O command to an I/O module and must then wait for the operation to be complete before proceeding.

#### 78) Real time system.

- An operating system that must schedule and manage real-time tasks.

#### 79) Real-time task.

- A task that is executed in connection with some process or function or set of events external to the computer system and that must meet one or more deadlines to interact effectively and correctly with the external environment.

## 80) Registers

- High-speed memory internal to the CPU. Some registers are visible that is, available to the programmers via the machine instruction set, other registers are used only by the CPU, for control purposes.

## 81) Relative address.

- An address calculated as a displacement from a base address.

## 82) Response time.

- In a data system, the elapsed time between the end of transmission of an enquiry message and the beginning of the receipt of a response message, measured at the enquiry terminal.

## 83) Round robin

- A scheduling algorithm in which processes are activated in a fixed cyclic order; that is, all processes are in a circular queue. A process that cannot proceed because it is waiting for some event (e.g., termination of a child process or an input/output operation) returns control to the scheduler.

## 84) Scheduling.

- To select jobs or tasks that are to be dispatched. In some operating systems, other units of work, such as input/output operations, may also be scheduled.

## 85) Secondary memory.

- Memory located outside the computer system itself; that is, it cannot be processed directly by the processor. It must first be copied into main memory. Examples include disk and tape.

## 86) Segment.

- In virtual memory, a block there has a virtual address. The blocks of a program may be of unequal length and may even be of dynamically varying lengths.

## 87) Segmentation.

- The division of a program or application into segments as part of a virtual memory scheme.

## 88) Semaphore.

- An integer value used for signaling among processes. Only three operations may be performed on a semaphore, all of which are atomic: initialize, decrement, and increment. Depending on the exact definition of the semaphore, the decrement operation may result in the blocking of a process, and the increment operation may result in the unblocking of a process. Also known as a counting semaphore or a general semaphore.

## 89) Sequential file.

- A file in which records are ordered according to the values of one or more key fields and processed in the same sequence from the beginning of the file.

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90) Shell.

- The portion of the operating system that interprets interactive user commands and job control language commands. It functions as an interface between the user and the operating system.

91) Stack.

- An ordered list in which items are appended to and deleted from the same end of the list, known as the top. That is, the next item appended to the list is put on the top, and the next item to be removed from the list is the item that has been in the list the shortest time. This method is characterized as last in first out.

92) Starvation.

- A condition in which a process is indefinitely delayed because other processes are always given preference.

93) Strong semaphore.

- A semaphore in which all processes waiting on the same semaphore are queued and will eventually proceed in the same order as they executed the wait (P) operations (FIFO order).

94) Swapping.

- A process that interchanges the contents of an area of main storage with the contents of an area in secondary memory.

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95) SMP (Symmetric multiprocessing).

- A form of multiprocessor that allows the operating system to execute on any available processor or on several available processors simultaneously.

96) Synchronous operation.

- An operation that occurs regularly or predictably with respect to the occurrence of a specified event in another process. For example, the calling of an input/output routine that receives control at a pre-coded location in a computer program.

97) Synchronization.

- Situation in which two or more processes coordinate their activities based on a condition.

98) System bus.

- A bus used to interconnect major computer components (CPU, memory, I/O).

99) Thread.

- A dispatchable unit of work. It includes a processor context (which includes the program counter and stack pointer) and its own data area for a stack (to enable subroutine branching). A thread executes sequentially and is interruptible so that the processor can then go to another thread. A process may consist of multiple threads.

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100) Thread switch.

- The act of switching processor control from one thread to another within the same process.

101) Time sharing.

- The concurrent use of a device by a number of users.

102) Time slice.

- The maximum amount of time that a process can execute before being interrupted.

103) Trap.

- An unprogrammed conditional jump to a specified address that is automatically activated by hardware; the location from which the jump was made is recorded.

104) Trojan horse.

- Secret undocumented routine embedded within a useful program. Execution of the program results in execution of the secret routine.

105) User mode.

- The least-privileged mode of execution. Certain regions of main memory and certain machine instructions cannot be used in this mode.

106) Virtual Address.

- The address of a storage location in virtual memory.

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107) virtual memory.

- The storage space that may be regarded as addressable main storage by the user of a computer system in which virtual addresses are mapped into real addresses. The size of virtual storage is limited by the addressing scheme of the computer system and by the amount of secondary memory available and not by the actual number of main storage locations.

108) virus.

- Secret undocumented routine embedded within a useful program. Execution of the program results in execution of the secret routine.

109) weak semaphore.

- A semaphore in which all processes waiting on the same semaphore proceed in an unspecified order (i.e., the order is unknown or indeterminate).

110) word.

- An ordered set of bytes or bits that is the normal unit in which information may be stored, transmitted, or operated on within a given computer. Typically, if a processor has a fixed-length instruction set, then the instruction length equals the word length.

111) worm

- Program that can travel from computer to computer across network connections. May contain a virus or bacteria.

## Assignment : 2 Bunker's Algorithm.

Process	Allocation	Max	(work)	(max-allocation) need
			available	
P <sub>0</sub>	A B C 0 1 0	A B C 7 5 3	A B C 3 3 2	
P <sub>1</sub>	2 0 0	3 2 2		
P <sub>2</sub>	3 0 2	9 0 2		
P <sub>3</sub>	2 1 1	2 2 2		
P <sub>4</sub>	0 0 2	4 3 3		

→ Process	Allocation	Max	Available	(max-allocation) Need
	A B C	A B C	A B C	A B C
P <sub>0</sub>	0 1 0	7 5 3	3 3 2	7 4 3
P <sub>1</sub>	2 0 0	3 2 2		1 2 2
P <sub>2</sub>	3 0 2	9 0 2		6 0 0
P <sub>3</sub>	2 1 1	2 2 2		0 1 1
P <sub>4</sub>	0 0 2	4 3 3		4 3 1

⇒ Need & work = work = work + Allocation.

P<sub>0</sub> 343 { 332 ✗ condition fails.

P<sub>1</sub> 122 { 332 • condition tries.

we work + allocation.

$$= 332 + 200$$

$$= 532$$

P<sub>2</sub> Need { work

600 { 532 • condition false.

P<sub>3</sub> Need 4 work

0 1 1 & 5 3 2

condition true

$$W = W + \text{allocation}$$

$$= 532 + 2 \cdot 11$$

$$= 743$$

P<sub>4</sub> Need 2 work

4 3 1 & 3 4 3

$$\Rightarrow W = W + \text{allocation}$$

$$= 343 + 002$$

$$= 745$$

P<sub>5</sub> Need 2 work

3 4 3 & 3 4 5

$$\Rightarrow W = 745 + 010$$

$$= 755$$

P<sub>6</sub> = 600 & 755

$$\Rightarrow 755 + 342$$

$$= 1097$$

\* FIFO

7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 0, 3, 2, 1, 2, 0, 1, 7, 0

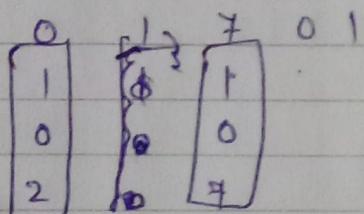
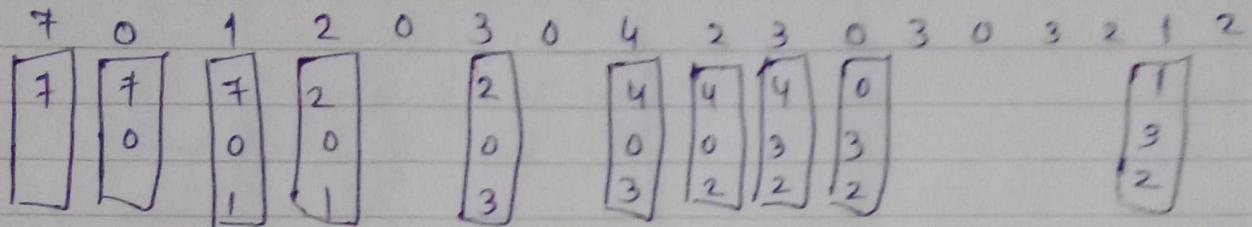
7	0	1	2	0	3	0	4	2	3	0	3	0	3	2	1
7	0	1	2	0	3	0	4	2	3	0	3	0	3	2	1

2	0	1	7	0	1
0	1	2	7	1	7
1	2	1	0	0	1
2	1	2	1	0	1

page fault = 15, no of frames = 3.

• LRU

7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 0, 3, 2, 1, 2, 0, 1, 3, 0, 1

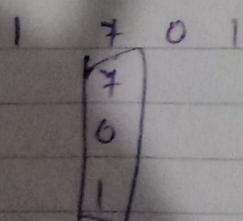
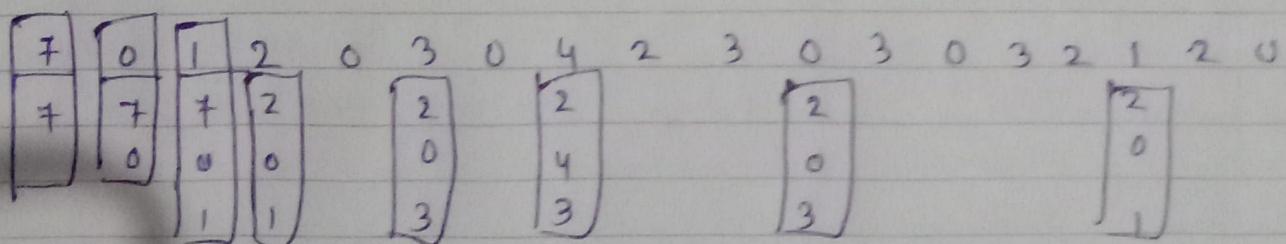


no. of frames = 3

page fault = 12.

• Optimal :-

7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 2, 1, 2, 0, 1, 7, 0, 1

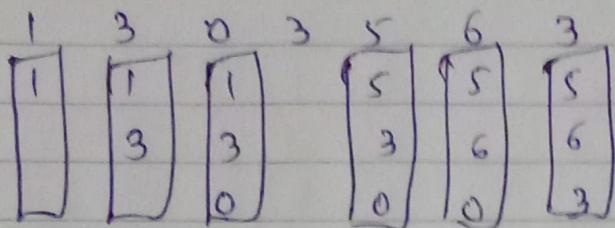


No. of frames = 3

page fault = 9.

→ FIFO

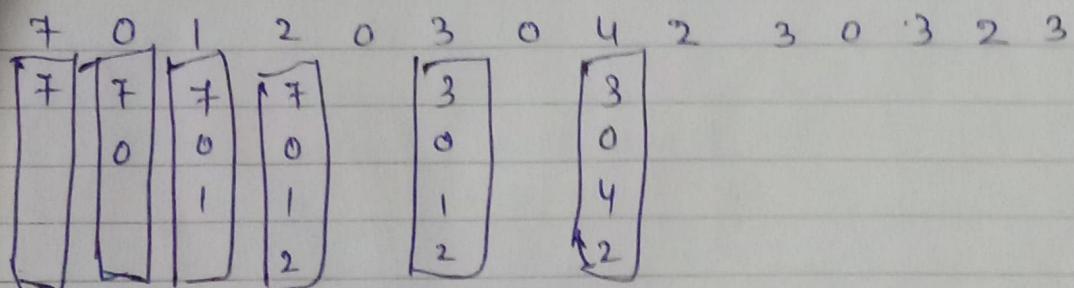
1, 3, 0, 3, 5, 6, 3



page fault = 6,  
no. of frames = 3.

→ Optimal :-

7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 2, 3.



page fault = 6,  
No. of frames = 4.

**DEPARTMENT OF COMPUTER SCIENCE  
ROLLWALA COMPUTER CENTRE  
GUJARAT UNIVERSITY  
M.C.A. – 3**

**ROLL NO : 13**

**NAME : Makhija Rakesh Jeramdas**

**SUBJECT : Operating System (OS)**

<b>NO.</b>	<b>TITLE</b>	<b>PAGE NO.</b>	<b>DATE</b>	<b>SIGN</b>
<b>1</b>	<b>Basic salary of a person is input through the keyboard. His dearness allowance is 40% of basic salary and house rent is 20% of basic salary. Write a program to calculate the gross pay.</b>			
<b>2</b>	<b>The distance between two cities is input through the keyboard. (in km). Write a program to convert this distance into metres, feet, inches and centimeters and display the results.</b>			
<b>3</b>	<b>The length and breadth of a rectangle and radius of a circle are entered through the keyboard, calculate the perimeter and area of rectangle and area and circumference of the circle.</b>			
<b>4</b>	<b>If a five digit number is entered through the keyboard, calculate the sum of its digits.</b>			
<b>5</b>	<b>The file /etc/passwd contains info about all users. Write a program which would receive the logname during execution, obtain information about it from the file and display the information on screen in some appropriate format. (Hint : use cut) eg. Logname : , UID : , GID : , Default working directory : , Default working shell :</b>			
<b>6</b>	<b>The script will receive the filename or filename with its full path, the script should obtain information about this file as given by "ls -l" and display it in proper format. eg. Filename : , File access permissions : , Number of links : , Owner of the file : , Group to which belongs : Size of file : , File modification date : , File modification time :</b>			
<b>7</b>	<b>If cost price and selling price of an item are entered through the keyboard, write a program to determine whether the seller has made profit or loss. Also determine how much profit/loss is made.</b>			
<b>8</b>	<b>Check whether the entered no. is odd or even.</b>			
<b>9</b>	<b>Check whether the entered no. is prime or not.</b>			
<b>10</b>	<b>Check whether the entered year is a leap year or not.</b>			
<b>11</b>	<b>The script receives two file names as arguments, the script must check whether the files are same or not, if they are similar then delete the second file.</b>			

**D E P A R T M E N T O F C O M P U T E R S C I E N C E**  
**ROLLWALA COMPUTER CENTRE**  
**GUJARAT UNIVERSITY**  
**M.C.A. – 3**

**R O L L N O : 13**

**N A M E : Makhija Rakesh Jeramdas**

**S U B J E C T : Operating System (OS)**

<b>12</b>	<b>Write a script which will display whether your friend has logged in or not, if he has logged in then send him some message.</b>		
<b>13</b>	<b>While executing a shell script, either the logname or uid is supplied at the command prompt, write a shell script to find out at how many terminals has this user logged in.</b>		
<b>14</b>	<b>Write a shell script to display the date with the format :- 25th October 2005 is a Tuesday.</b>		
<b>15</b>	<b>Write a shell script to display the appropriate message like : Good Morning / Good Afternoon / Good Evening</b>		
<b>16</b>	<b>Write a shell script to display the menu driven interface :- 1) list all files of the current directory 2) print the current directory 3) print the date 4) print the users otherwise display "Invalid Option".</b>		
<b>17</b>	<b>Create a menu driven calculator which asks for two integers and perform basic arithmetic operations.</b>		
<b>18</b>	<b>Find the factorial of any number.</b>		
<b>19</b>	<b>Display the fibonacci series upto some number.</b>		
<b>20</b>	<b>Two numbers are entered through the keyboard, find the power, one number raised to another.</b>		
<b>21</b>	<b>Write a script which has the functionality similar to head and tail commands.</b>		
<b>22</b>	<b>Write a script which reports name and size of all files in a directory. whose sizes exceed 1000. The filenames should be printed in the descending order of their sizes. The total no. of files must be reported.</b>		
<b>23</b>	<b>A friend of yours has promised to log in a particular time. You want to contact him as soon as he logs in, write a script which checks after every minute whether the friend has logged in or not. The logname should be supplied at command prompt. (hint : use sleep)</b>		
<b>24</b>	<b>Print the prime nos. from 1 to 300.</b>		
<b>25</b>	<b>Program must display all the combinations of 1, 2, and 3.</b>		
<b>26</b>	<b>Write a script for renaming each file in the directory such that it will have the current shell PID as an extension. The shell script should ensure that the directories do not get renamed.</b>		
<b>27</b>	<b>A file called wordfile consists of several words. Write a shell script which will receive a list of filenames, the first of which would be wordfile. The shell script should report all occurrences of each word in wordfile in the rest of the files</b>		

**DEPARTMENT OF COMPUTER SCIENCE  
ROLLWALA COMPUTER CENTRE  
GUJARAT UNIVERSITY  
M.C.A. – 3**

**R O L L N O : 13**

**N A M E : Makhija Rakesh Jeramdas**

**S U B J E C T : Operating System (OS)**

	<b>supplied as arguments.</b>			
<b>28</b>	<b>Write a shell script which deletes all the lines containing the word "unix" in the files supplied as arguments to it.</b>			
<b>29</b>	<b>The word "unix" is present in only some of the files supplied as arguments to the shell script. You script should search each of these files in turn and stop at the first file that it encounters containing the word unix. The filename should be displayed on the screen.</b>			
<b>30</b>	<b>A shell script receives even number of filenames. Suppose four filenames are supplied then the first file should get copied into second file, the third file should get copied into fourth and so on.. If odd number of filenames are supplied display error message.</b>			
<b>31</b>	<b>The script displays a list of all files in the current directory to which you have read, write and execute permissions.</b>			
<b>32</b>	<b>The script receives any number of filenames as arguments. It should check whether every argument supplied is a file or directory. If it is a directory it should be reported. If it is a filename then name of the file as well as the number of lines present in it should be reported.</b>			
<b>33</b>	<b>A script will receive any number of filenames as arguments. It should check whether such files already exist. If they do, then it should be reported, if not then check if a subdirectory "mydir" exists or not in the current directory, if it doesn't exist then it should be created and in it the files supplied as arguments should be created.</b>			
<b>34</b>	<b>Accept the marks of 5 subjects and calculate the percentage and grade.</b>			
<b>35</b>	<b>Print armstrog nos. from 1 to 500.</b>			
<b>36</b>	<b>Accept the measure (angles) of a triangle and displa the type of triangle. (eg. acute, right, obtuse)</b>			
<b>37</b>	<b>Display all the numbers from 1 to 100 which are divisible by 7.</b>			
<b>38</b>	<b>Find the largest and smallest of 3 different numbers.</b>			
<b>39</b>	<b>Find HCF and LCM of a given no.</b>			
<b>40</b>	<b>Display the dates falling on Sundays of the current month.</b>			