## T.Y.B.Sc.(Computer Science) Practical Examination, March/October (2019 Pattern)

#### CS-357 Lab Course-I Operating System-I

**Duration: 3 Hrs** Max. Marks: 35 Q.1 Write the simulation program to implement demand paging and show the page scheduling and total number of page faults according to the LFU page replacement algorithm. Assume the memory of n frames. Reference String: 3,4,5,4,3,4,7,2,4,5,6,7,2,4,6 [15] Q.2 Write a C program to implement the shell which displays the command prompt "myshell\$". It accepts the command, tokenize the command line and execute it by creating the child process. Also implement the additional command 'typeline' as typeline +n filename :- To print first n lines in the file. typeline -a filename :- To print all lines in the file. [15] Q.3. Oral/Viva [05] -----Slip No-1 -----

## T.Y.B.Sc.(Computer Science) Practical Examination, March/October (2019 Pattern)

Duration: 3 Hrs		Max. Mark	s: 35
Q.1 Write the simulation progra			
scheduling and total number	er of page fault	s according the FIFO	page
replacement algorithm. Ass	sume the memo	ory of n frames.	
Reference String : 3, 4	, 5, 6, 3, 4, 7, 3	3, 4, 5, 6, 7, 2, 4, 6	[15]
Q.2 Write a program to impleme	ent the shell. It	should display the co	mmand
prompt "myshell\$". Tokeni	ze the comman	d line and execute the	e given
command by creating the cl	nild process. A	dditionally it should i	nterpret the
following 'list' commands a	as		
myshell\$ list f dirname	:- To print na	mes of all the files in	current
	directory.		
myshell\$ list n dirname	:- To print the	number of all entries i	n the current
	directory	[15]	
Q.3. Oral/Viva			[05]
	Slin No-2		
	511p 1 10 Z		

## T.Y.B.Sc.(Computer Science) Practical Examination, March/October (2019 Pattern)

#### CS-357 Lab Course-I Operating System-I

Max. Marks: 35

**Duration: 3 Hrs** 

Q.1 Write the simulation program to implement demand paging and show the page scheduling and total number of page faults according to the LRU (using counter method) page replacement algorithm. Assume the memory of n frames.

Reference String: 3,5,7,2,5,1,2,3,1,3,5,3,1,6,2 [15]

Q.2 Write a programto implement the toy shell. It should display the command prompt "myshell\$". Tokenize the command line and execute the given command by creating the child process. Additionally it should interpret the following commands.

count c filename :- To print number of characters in the file.
count w filename :- To print number of words in the file.
count l filename :- To print number of lines in the file.
[15]

Q.3. Oral/Viva [05]

-----Slip No-3 -----

# T.Y.B.Sc.(Computer Science) Practical Examination, March/October (2019 Pattern)

## CS-357 Lab Course-I Operating System-I

**Duration: 3 Hrs** 

Max. Marks: 35

Q.1 Write the simulation program for dem scheduling and total number of page fa		
replacement algorithm. Assume the m	emory of n frames.	
Reference String : 8, 5, 7, 8, 5, 7,	2, 3, 7, 3, 5, 9, 4, 6, 2	[15]
Q.2 Write a program to implement the she	ll. It should display the commar	nd
prompt "myshell\$". Tokenize the con	nmand line and execute the give	en
command by creating the child pro	ocess. Additionally it should into	erpret the
following commands.		
myshell\$ search a filename pattern :- To search all the occurrence of		
	pattern in the file.	
myshell\$ search c filename pattern	:- To count the number of occu	rrence
	of pattern in the file. [1	5]
Q.3. Oral/Viva		[05]
Slip No-4		

## T.Y.B.Sc.(Computer Science) Practical Examination, March/October **(2019 Pattern)**

## CS-357 Lab Course-I Operating System-I

Max. Marks: 35

<b>Duration: 3 Hrs</b>	Max. Marl	xs: 35
Q.1 Write the simulation program for den	nand paging and show the	page
scheduling and total number of page	faults according the optim	al page
replacement algorithm. Assume the n	nemory of n frames.	
Reference String : 8, 5, 7, 8, 5, 7	7, 2, 3, 7, 3, 5, 9, 4, 6, 2	[15]
Q.2 Write a program to implement the sho	ell. It should display the co	ommand
prompt "myshell\$". Tokenize the co	mmand line and execute the	he given
command by creating the child pr	cocess. Additionally it sho	uld interpret the
following commands.		
myshell\$ search f filename patter	n: To display first occur	rence of
	pattern in the file.	
myshell\$ search c filename pattern	:- To count the number of	of occurrence
	of pattern in the file.	[15]
Q.3. Oral/Viva		[05]
Slip N	0-5	
Slip 1v	0 <i>5</i>	<b></b>

# T.Y.B.Sc.(Computer Science) Practical Examination, March/October (2019 Pattern)

Duration: 3 Hrs	Max. Marks: 35
Q.1 Write the simulation program for demand	paging and show the page
scheduling and total number of page faults	according the MRU page
replacement algorithm. Assume the memo	ry of n frames.
Reference String : 8, 5, 7, 8, 5, 7, 2, 3	3, 7, 3, 5, 9, 4, 6, 2 [15]
Q.2 Write a programto implement the shell. It	should display the command prompt
"myshell\$". Tokenize the command line an	d execute the given command by
creating the child process. Additionally	it should interpret the following
commands.	
myshell\$ search f filename pattern :- 7	Γo display first occurrence of
pat	tern in the file.
myshell\$ search a filename pattern :- T	o search all the occurrence of
patte	ern in the file. [15]
Q.3. Oral/Viva	[05]
Slip N	0-6

# T.Y.B.Sc.(Computer Science) Practical Examination, March/October (2019 Pattern)

### **CS-357 Lab Course-I Operating System-I**

<b>Duration: 3 Hrs</b>	Max. Marks: 35
Q.1 Write the simulation program for der	nand paging and show the page
scheduling and total number of page	faults according the Optimal page
replacement algorithm. Assume the r	memory of n frames.
Reference String : 7, 5, 4, 8, 5,	7, 2, 3, 1, 3, 5, 9, 4, 6, 2 [15]
Q.2 Write a program to implement shell.	It should display the command prompt
"myshell\$". Tokenize the command li	ne and execute the given command by
creating the child process. Additio	nally it should interpret the following
commands.	
myshell\$ search a filename pattern	:- To search all the occurrence of
	pattern in the file.
myshell\$ search c filename pattern	:- To count the number of occurrence
	of pattern in the file. [15]
Q.3. Oral/Viva	[05]

-----Slip No-7-----

# T.Y.B.Sc.(Computer Science) Practical Examination, March/October (2019 Pattern)

<b>Duration: 3 Hrs</b>	Max. Mark	s: 35
Q.1 Write the simulation program for der	nand paging and show the	page
scheduling and total number of page	faults according the LRU p	page
replacement algorithm. Assume the r	nemory of n frames.	
Reference String : 8, 5, 7, 8, 5, 7	7, 2, 3, 7, 3, 5, 9, 4, 6, 2	[15]
Q.2 Write a programto implement the she	ell. It should display the co	mmand prompt
"myshell\$". Tokenize the command li	ne and execute the given co	ommand by
creating the child process. Addition	nally it should interpret the	following
commands.		
myshell\$ search f filename patter	n: To display first occur	rence of
	pattern in the file.	
myshell\$ search c filename pattern	:- To count the number o	f occurrence
	of pattern in the file.	[15]
Q.3. Oral/Viva		[05]
Slip	No-8	
Snp	110 0	

## T.Y.B.Sc.(Computer Science) Practical Examination, March/October (2019 Pattern)

Duration: 3 Hrs	Max. Marks: 35		
Q.1 Write the simulation program for demand pag	ing and show the page		
scheduling and total number of page faults acc	cording the FIFO page		
replacement algorithm. Assume the memory of n frames.			
Reference String : 8, 5, 7, 8, 5, 7, 2, 3, 7,	3, 5, 9, 4, 6, 2 [15]		
Q.2 Write a program to implement the shell. It sho	uld display the command		
prompt "myshell\$". Tokenize the command li	ne and execute the given		
command by creating the child process. Additionally it should			
interpret the following commands.			
myshell\$ search f filename pattern :- To display first occurrence of			
pattern	in the file.		
myshell\$ search a filename pattern :- To se	arch all the occurrence of		
pattern	in the file. [15]		
Q.3. Oral/Viva	[05]		
Slip No-9			

## T.Y.B.Sc.(Computer Science) Practical Examination, March/October (2019 Pattern)

Duration: 3 Hrs	Max. Marks: 35		
Q.1 Write the simulation program for demand paging	and show the page		
scheduling and total number of page faults accor	ding the FIFO page		
replacement algorithm. Assume the memory of n frames.			
Reference String : 2, 4, 5, 6, 9, 4, 7, 3, 4, 5,	6, 7, 2, 4, 7, 1 [15]		
Q.2 Write a program to implement the shell. It should	display the command		
prompt "myshell\$". Tokenize the command line	and execute the given		
command by creating the child process. Addition	ally it should interpret the		
following 'list' commands as			
myshell\$ list f dirname :- To print names of	all the files in current		
directory.			
myshell\$ list i dirname: - To print names and inodes of the files in the			
current directory.	[15]		
Q.3. Oral/Viva	[05]		
Slip No-10			

# T.Y.B.Sc.(Computer Science) Practical Examination, March/October (2019 Pattern)

## CS-357 Lab Course-I Operating System-I

Max. Marks: 35

**Duration: 3 Hrs** 

Q.1	Write the simulation program for demand paging and show the page scheduling and total number of page faults according the LFU page replacement algorithm. Assume the memory of n frames.  Reference String : 3, 4, 5, 6, 3, 4, 7, 3, 4, 5, 6, 7, 2, 4, 6 [15]		
Q.2	Write a C program to implement the shell. It should display the command prompt "myshell\$". Tokenize the command line and execute the given		
	command by creating the child process. Additionally it should interpret the		
following 'list' commands as			
	myshell\$ list f dirname :- To print names of all the files in current		
	directory.		
	myshell\$ list n dirname :- To print the number of all entries in the current		
	directory [15]		
Q.3	. Oral/Viva [05]		
	Slip No-11		

# T.Y.B.Sc.(Computer Science) Practical Examination, March/October (2019 Pattern)

#### CS-357 Lab Course-I Operating System-I

Duration: 3 Hrs	Max. Marks: 35		
Q.1 Write the simulation program for demand paging and show the page			
scheduling and total number of page faults according the LRU page			
replacement algorithm. Assume the memo	ory of n frames.		
Reference String : 3, 4, 5, 6, 3, 4, 7, 3	[15]		
Q.2 Write a program to implement the shell. It	should display the command		
prompt "myshell\$". Tokenize the comman	d line and execute the given		
command by creating the child process. A	dditionally it should interpret the		
following 'list' commands as			
myshell\$ list f dirname :- To print names of all the files in current			
directory.			
myshell\$ list n dirname :- To print the number of all entries in the current			
directory	[15]		
Q.3. Oral/Viva	[05]		

-----Slip No-12-----

# T.Y.B.Sc.(Computer Science) Practical Examination, March/October (2019 Pattern)

CS-357 Lab Course-I Operating System-I

Duration: 3 Hrs Max. Marks: 35

Q.1 Write a C program to implement the shell which displays the command prompt "myshell\$". It accepts the command, tokenize the command line and execute it by creating the child process. Also implement the additional command 'typeline' as

typeline -a filename :- To print all lines in the file. [15]

Q.2 Write the simulation program for Round Robin scheduling for given time quantum. The arrival time and first CPU-burst of different jobs should be input to the system. Accept no. of Processes, arrival time and burst time. The output should give the Gantt chart, turnaround time and waiting time for each process. Also display the average turnaround time and average waiting time.

[15]

Q.3. Qral/Viva [05]

-----Slip No-13-----

T.Y.B.Sc.(Computer Science) Practical Examination, March/October (2019 Pattern)

CS-357 Lab Course-Properating System 1

Duration: 3 Hrs Max. Marks: 35

Q1 Write a C program to implement the shell which displays the command prompt "myshell\$". It accepts the command, tokenize the command line and execute it by creating the child process. Also implement the additional command typeline as typeline in filename. To print first n lines in the file. [15]

Q.2 Write a C program to simulate Non-preemptive Shortest Job First (SJF) – scheduling. The arrival time and first CPU-barst of different jobs should be input to the system. Accept no. of Processes, arrival time and burst time. The output should give Gantt chart, turnaround time and waiting time for each process. Also find the average waiting time and turnaround time [15]

Q.3. Oral/Viva [05]

-----Slip No-14-----

# T.Y.B.Sc.(Computer Science) Practical Examination, March/October (2019 Pattern)

# T.Y.B.Sc.(Computer Science) Practical Examination, March/October (2019 Pattern)

<b>Duration: 3 Hrs</b>	Max. Marks: 35	
Q.1 Write a programto impleme	ent the toy shell. It should display the command	
prompt "myshell\$". Token	ize the command line and execute the given	
command by creating the c	child process. Additionally it should interpret the	
following commands.		
count c filename	:- To print number of characters in the file.	
count w filename	:- To print number of words in the file. [15]	
Q.2 Write the program to simula	ate Non preemptive priority scheduling. The	
arrival time and first CP	U-burst of different jobs should be input to the	
system. Accept no. of Pr	rocesses, arrival time and burst time. The output	
should give Gantt chart,	turnaround time and waiting time for each proces	SS.
Also find the average wa	aiting time and turnaround time. [15]	
Q.3. Oral/Viva	[05]	
	Slip No-16	

# T.Y.B.Sc.(Computer Science) Practical Examination, March/October (2019 Pattern)

Duration: 3 Hrs	Max. Marks: 35
Q.1 Write the simulation program for dem	and paging and show the page
scheduling and total number of page fa	aults according the Optimal page
replacement algorithm. Assume the m	emory of n frames.
Reference String : 7, 5, 4, 8, 5, 7,	, 2, 3, 1, 3, 5, 9, 4, 6, [15]
Q.2 Write the program to simulate FCFS C	CPU-scheduling. The arrival time and
first CPU-burst of different jobs shou	ld be input to the system. Accept no. of
Processes, arrival time and burst time	. The output should give Gantt chart,
turnaround time and waiting time for	each process. Also find the average
waiting time and turnaround time.	[15]
Q.3. Oral/Viva	[05]
Slip No	-17

# T.Y.B.Sc.(Computer Science) Practical Examination, March/October (2019 Pattern)

Duration: 3 Hrs	Max. Mark	ks: 35
Q.1 Write the simulation program for demand	d paging and show the	page
scheduling and total number of page fau	lts according the LRU	page
replacement algorithm. Assume the mer	nory of n frames.	
Reference String : 3, 4, 5, 6, 3, 4, 7,	3, 4, 5, 6, 7, 2, 4, 6	[15]
Q.2 Write a C program to simulate FCFS CP	U-scheduling. The arri	val time and
first CPU-burst of different jobs should	be input to the system.	Accept no. of
Processes, arrival time and burst time. T	he output should give	Gantt chart,
turnaround time and waiting time for each	ch process. Also find th	he average
waiting time and turnaround time.		[15]
Q.3. Oral/Viva		[05]
Slip No	-18	

T.Y.B.Sc.(Computer Science) Practical Examination, March/October (2019 Pattern)

CS-357 Lab Course-LOperating System-I

Duration: 3 Hrs Max. Marks: 35

Q.1 Write a C program to implement the shell. It should display the command prompt "myshell\$". Tokenize the command line and execute the given command by creating the child process. Additionally it should interpret the following 'list' commands as

myshell\$ list f dirname :- To print names of all the files in current directory. [15]

Q.2 Write the simulation program for Round Robin scheduling for given time quantum. The arrival time and first CPU burst of different jobs should be input to the system. Accept no of Processes, arrival time and burst time. The output should give the Gantt chart, turnaround time and waiting time for each process. Also display the average turnaround time and average waiting time.

[15]

Q.3. Oral Viva [05]

-----Slip No-19------

T.Y.B.Sc.(Computer Science) Practical Examination, March/October
(2019 Pattern)

CS-357 Lab Course-I Operating System-I

Duration; 3 Hrs Max Marks: 35

Q.1 Write a C program to implement the shell which displays the command prompt "myshell\$". It accepts the command, tokenize the command line and execute it by creating the child process. Also implement the additional command typeline as

typeline a filename :- To print all lines in the file. [15]

Q.2 Write the program to simulate Non-preemptive Shortest Job First (SJF) – scheduling. The arrival time and first CPU-barst of different jobs should be input to the system. Accept no. of Processes, arrival time and burst time. The output should give Gantt chart, turnaround time and waiting time for each process. Also find the average waiting time and turnaround time [15]

Q.3. Oral/Viva [05]

-----Slip No-20 ------

## T.Y.B.Sc.(Computer Science) Practical Examination, March/October (2019 Pattern)

CS-357 Lab Course-I Operating System-I

Max. Marks: 35

**Duration: 3 Hrs** 

Q.1 Write a C Program to create a child process using fork (), display p	arent and
child process id. Child process will display the message "I am Child	Process"
and the parent process should display "I am Parent Process". [15	] /
	$\nearrow\!$
Q.2 Write a program to simulate Preemptive Priority scheduling. The	arrival
time and first CPU-burst and priority for different a number of	
processes should be input to the algorithm. Assume the fixed K	<del></del>
waiting time (2 units). The next CPU-burst should be generated ran	domly. Th
output should give Cantt chart, turnaround time and waiting time	for each
process. Also find the average waiting time and turnaround time.	[15]
Q.3. Oral/Viva	[05]
Slip No-21	

# T.Y.B.Sc.(Computer Science) Practical Examination, March/October (2019 Pattern)

Duration: 3 Hrs	Max. Marks: 35	
Q.1 Write a C program that demonstrates the use of nice() system call. After a		
child Process is started using fork (), assign higher priority to the child using		
nice () system call.	[15]	
Q.2 Write a C program to simulate Non preen	mptive priority scheduling. The	
arrival time and first CPU-burst of differen	nt jobs should be input to the	
system. Accept no. of Processes, arrival time and burst time. The output		
should give Gantt chart, turnaround time and waiting time for each		
process. Also find the average waiting time and turnaround		
time.	[15]	
Q.3. Oral/Viva	[05]	
Slip No-2	2	

# T.Y.B.Sc.(Computer Science) Practical Examination, March/October (2019 Pattern)

Duration: 3 Hrs Ma	ax. Marks: 35
Q.1 Write a C program to illustrate the concept of orphan p	process. Parent process
creates a child and terminates before child has finished	l its task. So child
process becomes orphan process. (Use fork(), sleep(),	getpid(), getppid()).
	[15]
Q.2 Write the simulation program for demand paging and	show the page
scheduling and total number of page faults according t	he Optimal page
replacement algorithm. Assume the memory of n fram	es.
Reference String : 7, 5, 4, 8, 5, 7, 2, 3, 1, 3, 5, 9,	4, 6, [15]
Q.3. Oral/Viva	[05]
Slip No-23	

# T.Y.B.Sc.(Computer Science) Practical Examination, March/October (2019 Pattern)

Duration: 3 Hrs		Max. Marks: 35
Q.1 Write a C program to acce	pt n integers to be sorte	d. Main function
creates child process using for	ork system call. Parent	process sorts the integers
using bubble sort and waits	for child process using	wait system call. Child
process sorts the integers usi	ing insertion sort.	[15]
Q.2 Write a C program to impl	ement the toy shell. It s	hould display the command
prompt "myshell\$". Token	ize the command line a	nd execute the given
command by creating the c	hild process. Additiona	lly it should interpret the
following commands.		
count c filename	:- To print number of	f characters in the file.
count w filename	:- To print number of	words in the file.
count 1 filename	:- To print number of l	ines in the file. [15]
Q.3. Oral/Viva		[05]
	Slip No-24	

T.Y.B.Sc.(Computer Science) Practical Examination, March/October (2019 Pattern)

CS-357 Lab Course-I Operating System-I

Max. Marks: 35

**Duration: 3 Hrs** 

Q.1 Write a C program that accepts an integer array. Main function forks child process. Parent process sorts an integer array and passes the sorted array to child process through the command line arguments of execve() system call.

The child process uses execve() system call to load new program that uses this sorted array for performing the binary search to search the particular item in the array.

[15]

Q:2 Write a program o implement the shell. It should display the command prompt "myshell\$". Tokenize the command line and execute the given command by creating the child process. Additionally it should interpret the following commands.

myshell\$ search f filename pattern: To display first occurrence of pattern in the file. [15]

Q.3. Oral/Viva [05]

-----Slip No-25------