KADI SARVA VISHWAVIDHYALAYA

B.E. Semester IV Examination – OCT – 2015

CE 406 - UNIX SHELL PROGRAMMING AND SYSTEM ADMINISTRATION

DATE: 30/10/2015 **TIME: 10.30 AM to 1.30 PM** **TOTAL MARKS: 70**

Instructions:

1. Answer each section in separate answer sheet.
2. Use of scientific calculator is permitted.
3. All questions are **Compulsory**.
4. Indicate **clearly**, the options you attempt along with its respective question number.
5. Use the last page of main supplementary for **rough work**.

SECTION – I

Q-1 A Answer the following in short. 10

1. Draw process state transition diagram.
2. Explain the structure of Inode with a proper diagram.

Q-1 B Explain open() system call. 5

OR

Q-1 B Give significance and syntax of following UNIX commands: 5

i. cd ii. rm

Q-2 Answer the following questions.

A Explain any one buffer allocation scenario with a neat diagram. 5

B Draw the diagram of system kernel. 5

OR

A Write down the steps for unlink() system call. 5

B Write an algorithm of mount() system call. 5

Q-3 Answer the following questions.

A Write down the steps to free the Inode. 5

B What is remembered Inode? Explain its use. 5

OR

A Write a shell script to check that entered number is even or odd. 5

B Write a shell script for accepting a string and check whether it is file or directory, if it exists. 5

SECTION – II

Q-4 A Answer the following in short. 10

1. Write down the steps of namei algorithm.
2. List out all the services provided by UNIX system.

Q-4 B Explain the steps for write() system call. 5

OR

Q-4 B Explain named pipe in detail. 5

Q-5 Answer the following questions.

A Give output of following perl code. 5

```
@company = qw/DC WT USPA JAVA iOS/;

print "$ company [1]\n";
print "$ company [0]\n";
print "$ company [2]\n";
print "$ company [-2]\n";
print "$ company [-4]\n";
```

B What is the need of AWK script? Give a simple example of AWK script. 5

OR

A Explain I/O redirection and pipe with an example. 5

B Explain the mechanism of link() system call with an example. 5

Q-6 Answer the following questions.

A Write a perl script to make sum of 10 array elements. 5

B Write a perl script to check that entered year is leap year or not. 5

OR

A Write a shell script to list all the files stored in a particular directory. 5

B What is the use of STAT and FSTAT system call? Give the syntax of both the system calls. 5

Seat No:-_____ Enroll ID:- _____

KADI SARVA VISHWAVIDYALAYA

B.E. SEM – IV (C.E.) Regular Examination-May2014

SUBJECT:- UNIX SHELL PROGRAMMING AND ADMINISTRATION

SUBJECT CODE:-(CE-406)

DATE:- 17/05/2014 **DURATION:- 3.0 Hours**

TIME: - 10.30pm – 1.30pm **MARKS:- 70 marks**

Instructions:

1. Answer each section in separate Answer sheet.
2. Use of scientific calculator is permitted.
3. All questions are **Compulsory**.
4. Indicate **clearly**, the options you attempt along with its respective question number.

Section – I

Q-1 Answer the following questions. (All compulsory)

(A)	Draw block diagram of system kernel.	[5]
(B)	Explain Operating system services.	[5]
(C)	Draw and explain process state transition diagram.	[5]

Q-2 Answer the following questions.

(A)	Explain Structure of the UNIX file system	[5]
(B)	Explain any two buffer allocation scenario with diagram.	[5]
	OR	
(A)	Explain superblock in detail	[5]
(B)	How race condition is being generated for free buffer and locked buffer scenario?	[5]

Q-3 Answer the following questions.

(A)	Give syntax and significance of following Command : a) pwd b) rmdir	[5]
(B)	Write a shell script to accept a string and check whether its file of directory	[5]
	OR	
(A)	Write an algorithm for reading a disk block.	[5]
(B)	Write a script to generate sum of all odd numbers between 1 to 20.	[5]

Section – II

Q-4 Answer the following questions. (All compulsory)

(A)	Describe following Command : a) echo b) chmod	[5]
(B)	Write down the steps for freeing the Inode.	[5]
(C)	Explain structure of Inode with diagram.	[5]

Q-5 Answer the following questions.

(A)	Write down the steps that open system calls follows.	[5]
(B)	Explain close system call in detail.	[5]

OR

(A)	Explain mount system call in detail.	[5]
(B)	Write down the steps for link system call.	[5]

Q-6 Answer the following questions.

(A)	Write a perl script for checking whether the entered number is even or odd.	[5]
(B)	Suppose there is a text file named as sample.txt, write a awk script to count number of records in the file.	[5]

OR

(A)	Give the syntax of declaring an array in perl.	[5]
(B)	Give the syntax and significance of mkdir and who commands.	[5]

-------- All the Best----------

KADI SARVA VISHWAVIDHYALAYA

B.E. Semester IV Examination – April – 2015

CE 406 – UNIX SHELL PROGRAMMING AND SYSTEM ADMINISTRATION

DATE: 09/05/2015 **TIME: 10.30 AM to 1.30 PM** **TOTAL MARKS: 70**

Instructions:

1 Answer each section in separate answer sheet.
2 Use of scientific calculator is permitted.
3 All questions are **Compulsory**.
4 Indicate **clearly**, the options you attempt along with its respective question number.
5 Use the last page of main supplementary for **rough work.**

SECTION – I

Q-1 A Answer the following in short. 10
1 Write down the steps that open() system call follows.
2 Explain the process state transition with the help of diagram.

Q-1 B Write down the steps that mount() system calls follows. 5

OR

Q-1 B Explain all operating system services.

Q-2 Answer the following questions.
A Write difference between (i) Named and Unnamed pipe 5
(ii) Create and mknode system call
B Explain table of contents of Inode. 5

OR

A List out and briefly explain fields of superblock. 5
B When buffers are allocated? Explain any two buffer allocation methods with proper diagram. 5

Q-3 Answer the following questions.
A Describe the Block diagram of UNIX system kernel. 5
B Give the significance and syntax of following UNIX commands: 5
(i) chmod (ii) grep (iii) mv (iv) kill (v) ls -ai

OR

A Explain the context of a process with the help of diagram. 5
B Explain the relationship between following data structures 5
(i) User file Descriptor (ii) Inode table (iii) File table

SECTION – II

Q-4 A Answer the following in short. 10
1 Give the syntax of read() and write() system call. List out and briefly explain all I/O parameters stored in u area during read() and write() system call.

2 Write down the algorithm to convert path name to Inode.

Q-4 B Explain chop () function with example. 5

OR

Q-4 B Consider following file (student_marks.txt) data for executing AWK script. 5

Student_Name	Roll_No	Test1_Mark	Test2_Mark	Test3_Mark
Sanjay Patel	14BECE01	60	80	86
Jay Jani	14BECE02	70	85	78
Rajiv Joshi	14BECE03	77	80	76
Divya Pandya	14BECE04	78	77	79
Swati Jain	14BECE05	80	85	82
Raj Khothari	14BECE06	90	60	85

Write down AWK script which will calculate and print the average marks of each student and average of Test1, Test2 and Test3 Marks.

Q-5 Answer the following questions.

A Write a shell script which checks whether input alphabet is vowel or not. 5

B Write a shell script for interchanging the values of two variables without using third variable. 5

OR

A Write a shell script which take selling price and manufacturing cost of product and notify whether selling of product gives profit or loss. 5

B Write shell scripts which find the factorial of given number. 5

Q-6 Answer the following questions.

A Write a perl script to find sum of 10 array elements. (Array elements are to be taken from user) 5

B Give output of following perl code. 5

```
@Depts = qw/CE ME IT CIVIL EE/;
print "$ Depts [-1]\n";
print "$ Depts [-2]\n";
print "$ Depts [0]\n";
print "$ Depts [1]\n";
print "$ Depts [-5]\n";
```

OR

A Explain the execution of close() system call with the help of example. 5

B Give output of following perl code. 5

```
$var1 = "Hello World";
$var2 = 14.6;
@arr1 = (0,1,2,3,4);
@arr2 = ("zero","one","two","three","four");
print $var1;
print (" ",$var2,"\n");
print (@arr1,"\n");
print (@arr2,"\n\n");
```