CS—5A4

(Pages : 2)

FIFTH SEMESTER B.E. (COMPUTER SCIENCE AND ENGINEERING) DEGREE EXAMINATION, MARCH 2001

INTRODUCTION TO UNIX

Time : Three Hours

Maximum : 100 Marks

Answer any **five** *full questions.*
All questions carry equal marks.

1. (a) With a neat diagram, explain the relationship between the kernal and shell of the unix operating system. (8 marks)

   (b) What are different types of files in an Unix O/S ? Explain briefly. (6 marks)

   (c) Explain the following : Banner, Calendar, Echo, Ispell each with an example. (6 marks)

2. (a) Explain briefly absolute path name and relative path names each with an example. (6 marks)

   (b) Explain the following file handling commands WC, Split, Comm and CMP each with an example. (8 marks)

   (c) What is standard input and standard output ? How do you achieve redirection using pipes and tees ? Explain with an example. (6 marks)

3. (a) Explain the *three* modes of the Vi-Editor. (6 marks)

   (b) Explain each column of the output of ls-l command. (8 marks)

   (c) What are file attributes ? Explain how to change basic file permissions, with an example. (6 marks)

4. (a) With respect to the database given at the end, what is the output of the following commands database is emp.lst. ?

   (i) pr emp.list
   (ii) head-3 emp.lst
   (iii) sort-t ll + 1 emp.lst (6 marks)

   (b) Explain the grep command, with options c, r, v, i and l each with an example. (8 marks

   (c) What is a process ? Explain the commands bg, fg and kill. (6 marks

5. (a) Write a shell script to create a menu which displays the list of files, current data process status and current users of the system. (6 marks

   (b) Write an awk sequence to find the HRA, DA and net pay of an employee, where DA i 30 % of basic, HRA is 10 % of basic and net pay is the sum of HRA, DA and the bas pay with suitable headings. (8 mark

   (c) Explain Line addressing and Context addressing using SED, each with an example (6 mark

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6. (a) State any *six* built in variables in awk. and explain each.
   (b) Using command line arguments write a perl pgm to find a given year is :
   (c) How do you determine the length of a string, extract a substring, and locate the p of a character in the string using Expr. Explain with an example.

(6 1

7. (a) What is a protocol ? Also explain the features of TCP/IP ? (8 1
   (b) Explain the *four* layers of TCP/IP. (6 1
   (c) What is file transfer protocol ? Explain briefly. (6 1

8. (a) Explain the command find ? Also explain how to manage disk space. (8 1
   (b) What are inodes, and what are the contents of the inodes ? (6 1
   (c) Explain file system mounting and unmounting.

sample database

emp.lst

emp ID	emp name	designation	basic
101 :	aaa :	director :	10,000
102 :	bbb :	manager :	8,000
103 :	ccc :	Asst. manager :	7,500
104 :	ddd :	Asst. manager :	7,000

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IS5T2

Reg. No. | | | | | | | | | | |

Fifth Semester B.E. Degree Examination, January/February 2003

Information Science & Engineering

Introduction to UNIX

Time: 3 hrs.] [Max.Marks : 100

Note: *1. Answer any FIVE full questions.*
2. All questions carry equal marks.

1. (a) What are the various components of UNIX operating system? Explain. (8 Marks)

   (b) Mention the different categories of files that exist in UNIX. Discuss each one of them very briefly. (8 Marks)

   (c) Clearly distinguish between relative and absolute path names. (4 Marks)

2. (a) Explain the commands used for copying and removing regular files in UNIX. (8 Marks)

   (b) With the aid of an example explain command substitution. (4 Marks)

   (c) What are wild cards? Explain how they are used in file names generation. Also discuss the circumstances when these wild cards loose their meaning. (8 Marks)

3. (a) Discuss how a shell command is executed from with in the Vi editor environment and the control is returned back to the editor environment. (6 Marks)

   (b) What are system variables? Mention at least four Bourne shell system variables and discuss each one of them very briefly. (7 Marks)

   (c) What is a process? Discuss the mechanism of a process creation in UNIX. (7 Marks)

4. (a) What are the permissions that are associated with UNIX files on their creation. Explain very briefly how these permissions can be changed to required values. (8 Marks)

   (b) What are the times associated with a file? Discuss their importance. Hence or other wise discuss how these times could be changed. (9 Marks)

   (c) Write a Unix command line which displays on the monitor as well as saves the information about "the number of users using the system at present" on a file called users. (3 Marks)

5. (a) What are positional parameters? Mention some of these parameters and their use in the case of shell scripts. (8 Marks)

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(b) Write a note on the expr command. (6 Marks)

(c) what is a 'here document'? Explain with an example. (6 Marks)

6. (a) Discuss the text editing features of ed. (6 Marks)

(b) Write an awk sequence to find HRA, DA and net pay of an employee where DA is 40% of the basic, HRA is 10% of basic and net pay is the sum of basic, HRA and D.A. (8 Marks)

(c) With the aid of an example explain the chop() function in perl. (6 Marks)

7. (a) Who is a super user? What are his duties, responsibilities and privileges? Discuss. (8 Marks)

(b) What are IP addresses? How are these addresses constructed? Are these addresses different for different types of networks? Are any IP addresses reserved? Discuss very briefly. (12 Marks)

8. (a) What are Inodes? What information do they contain? Discuss. (6 Marks)

(b) With an example explain the cpio command. (6 Marks)

(c) With reference to file systems what do you mean by mounting and unmounting. (8 Marks)

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CS5A4

Reg. No. | | | | | | | | | | |

Fifth Semester B.E. Degree Examination, January/February 2003

Computer Science and Engineering

Introduction to UNIX

Time: 3 hrs.] [Max.Marks : 100

Note: *1. Answer any FIVE full questions.*
2. All questions carry equal marks.

1. (a) Discuss the important features of UNIX Operating System. (8 Marks)

(b) Explain the Kernel-Shell relationship. (6 Marks)

(c) Explain the following:

i) tput ii) script iii) uname
iv) who v) lock vi) time (6 Marks)

2. (a) What is redirection? Explain. (6 Marks)

(b) Explain the use of following commands with proper syntax:

i) od ii) split iii) comm iv) file (8 Marks)

(c) Explain the sequence of steps that a shell follows while processing a command. (6 Marks)

3. (a) How do you customize *Vi*? Explain. (8 Marks)

(b) What do the following environment variables mean

i) IFS ii) PSI iii) TERM iv) PATH (4 Marks)

(c) What are file permissions? How do you assign permissions to a file. (8 Marks)

4. (a) What is a filter? How are the following filters useful?

i) pr ii) tr iii) heat iv) cut (6 Marks)

(b) What is grep? Explain any 3 options with suitable examples. (8 Marks)

(c) Explain the job control feature in Bash Shell. (6 Marks)

5. (a) Discuss the features of a screen oriented mail handler (menu driven). (6 Marks)

(b) What are the possible ways of using for loop in a shell script. Write a shell script to rename all files with extension txt to doc. (8 Marks)

(c) How are the following statements useful in shell scripts

i) eval ii) exec iii) export. (6 Marks)

6. (a) What is a sed instruction? Explain the following w.r.t sed:

i) Repeated Pattern
ii) Tagged Regular expression. (6 Marks)

(b) Write an awk program to generate the following report for persons having basic > 10,000 from a file containing empid, empname, designation, date of

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joining and basic.

SALARY STATEMENT OF EXECUTIVES FOR THE MONTH NOV 2002

SL.NO.	NAME	DESIGNATION	BASIC	DA (45% of) (BASIC)	HRA (15% of) (BASIC)	GROSS (1)+(2)+(3)
			(1)	(2)	(3)	
1.	N.G.AGARWAL	G.M.	20,000			
2.	P.K. SAXENA	DIRECTOR	15,000			
3.	G.K. SENGUPTA	CHAIRMAN	12,000			
		Average	xxxxxx	xxxx	xxxx	xxxx

(8 Marks)

(c) Explain the concept of arrays in Perl. (6 Marks)

7. (a) Discuss the features of TCP/IP. (6 Marks)

(b) What are IP addresses? How are they constructed? Discuss the various classes of networks based on IP addresses. (8 Marks)

(c) What is DNS? Explain the Internet Domain Structure. (6 Marks)

8. (a) Explain how CPio can be used to backup files. (6 Marks)

(b) Discuss the organisation of a UNIX File System. (6 Marks)

(c) Explain how a System Administrator can ensure proper security to the system. (8 Marks)

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Fifth Semester B.E. Degree Examination, July/August 2003

Computer Science and Engineering

Introduction to UNIX

Time: 3 hrs.] [Max.Marks : 100

Note: 1. *Answer any FIVE full questions.*
2. *All questions carry equal marks.*

1. (a) With a neat diagram, explain the relationship between the kernel and the shell of UNIX. (8 Marks)

   (b) Describe the salient features of UNIX operating system. (8 Marks)

   (c) What is the difference between an argument and an option? Explain with examples. (4 Marks)

2. (a) Explain the different types of files in UNIX. (8 Marks)

   (b) Differentiate between relative and absolute pathnames. Explain the cd command. (6 Marks)

   (c) Explain the following commands :
   i) Wc ii) od iii) split iv) cmp v) Cp vi) rm. (6 Marks)

3. (a) Explain the three modes of the Vi editor. (8 Marks)

   (b) What is file permission? What are the different ways of setting file permission? Explain. (6 Marks)

   (c) What are standard input, standard output and standard error? Explain how the error is.
   i) stored in a file ii) not stored anywhere or displayed. (6 Marks)

4. (a) Give the contents of a typical personnel database file with six fields (emp-id, name, designation, department, date of birth and salary). Show atleast three entries on this file, clearly indicating the demarcation of various fields. With reference to this database, explain the head, tail, cut and paste commands. (8 Marks)

   (b) Explain the grep, egrep and fgrep with examples. (6 Marks)

   (c) Explain the following with examples
   news, write, mesg, talk. (6 Marks)

5. (a) What are the shell parameters \$*, \$#, \$? *and* \$? Discuss them briefly. (6 Marks)

   (b) Write a shell script to create a menu which displays the list of files, current users, contents of a particular file and process status of the system based on the user choice. (8 Marks)

   (c) What is a here document? Explain with an example. (6 Marks)

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6. (a) Explain line addressing and content addressing using SED, each wit. example. (6 Ma.

   (b) What is awk? Give and explain any three built in function in awk. (6 Marks)

   (c) Explain the list and array use in perl. Also write a perl program to convert the temperature into fahrenheit using the relation $C = \frac{5}{9}(F - 32)$ and print out the result. (8 Marks)

7. (a) What are the superuser administrative privileges? (6 Marks)

   (b) What is a protocol? Also explain the features of TCP/IP. (8 Marks)

   (c) Explain the four layers of TCP/IP. (6 Marks)

8. (a) Explain what are inodes and different information these inodes contain. (6 Marks)

   (b) Discuss the organisation of a UNIX file system. (6 Marks)

   (c) Explain how a system administrator can ensure proper security to the system. (8 Marks)

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USN | | | | | | | | | | |

Fifth Semester B.E. Degree Examination, July/August 2004

Computer Science and Engineering

Introduction to UNIX

Time: 3 hrs.] [Max.Marks : 100

Note: *1. Answer any FIVE full questions.*

1. (a) With a neat diagram explain the relationship between the kernel and shell of the unix operating system. (8 Marks)

   (b) Explain briefly the different types of files in an unix operating system. (6 Marks)

   (c) Explain the following :

   i) Banner

   ii) *tty*

   iii) who - HU (6 Marks)

2. (a) Explain any four internal and external commands with suitable examples in UNIX. (8 Marks)

   (b) Explain the absolute path name and relative path name with example. (6 Marks)

   (c) Briefly discuss the organization of the unix file system. (6 Marks)

3. (a) Explain the different modes in which a Vi editor works. (6 Marks)

   (b) What are wild cards ? Explain them with suitable examples. (6 Marks)

   (c) Explain the following environment variables.

   i) HOME ii) PS1 iii) PS2 iv) TERM (8 Marks)

4. (a) Explain grep command with all options. Give suitable examples for 'egrep' and 'tgrep'. (8 Marks)

   (b) Explain the news, talk and pine commands with example. (6 Marks)

   (c) Explain the following commands.

   i) tr ii) Uniq iii) nl iv) paste (6 Marks)

5. (a) What is shell programming? Explain the differant ways of executing a shell program. (8 Marks)

   (b) Explain for loop in shell script. Write a shell script to scan the file repeatedly for each argument. (8 Marks)

   (c) What is meant by background job processing? Explain the command used for it. (4 Marks)

Contd.... 2

6. (a) What is a mail command? Explain any six internal commands for mail. **(8 Marks)**

   (b) Explain the array handling features of PERL. **(6 Marks)**

   (c) What is awk ? Explain any three built in functions in awk. **(6 Marks)**

7. (a) Explain TCP/IP protocol. **(8 Marks)**

   (b) Explain MAC and IP addresses. **(6 Marks)**

   (c) Explain Daemons, ports and sockets **(6 Marks)**

8. (a) Mention the various privilages of a superviser. Discuss how a user can become a super user. **(8 Marks)**

   (b) Explain mounting and unmounting with examples. **(8 Marks)**

   (c) Explain the following :

   i) rep ii) ppp iii) rsh iv) rlogin **(4 Marks)**

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IS5T2

USN | | | | | | | | | | |

Fifth Semester B.E. Degree Examination, July/August 2004

Information Science & Engineering

Introduction to UNIX

Time: 3 hrs.] [Max.Marks : 100

Note: *1. Answer any FIVE full questions.*
2. All questions carry equal marks.

1. (a) Explain the general structure of unix O.S. (8 Marks)

   (b) Mention the different category of files that exist in Unix. Discuss atleast three of them briefly. (8 Marks)

   (c) Explain the calender and lock commands in Unix. (4 Marks)

2. (a) Explain the parent child relationship between various files in the organization of files in Unix and give the meaning of the two special directory names : the dot (·) and the double dott (··). (10 Marks)

   (b) Explain the bc command in unix. Clearly mention how real arithmatic can be performed using this. (6 Marks)

   (c) Mention the command using which the contents of a file can be displayed. Discuss the command that is used to display the contents of a large file. (4 Marks)

3. (a) Explain how patterns are searched in the Vi editor environment, with the aid of a simple example. (6 Marks)

   (b) What do you mean by I/o redirection. With the aid of necessary illustrations explain how redirection is accomplished in Unix. (8 Marks)

   (c) What is the meaning of command substitution ? Explain with an example. (6 Marks)

4. (a) What are file attributes ? Explain how basic file permissions can be changed. (8 Marks)

   (b) Explain the following commands with example.

   i) Pr ii) tail iii) unique iv) n1 (8 Marks)

   (c) Give the meaning of a process and the PID. (4 Marks)

5. (a) What are positional parameters ? How are they useful in shell scripts ? Discuss. (6 Marks)

   (b) Explain the "here" document. (6 Marks)

   (c) What are built in variables in awk. Mention some of them. Write a line or two about each one of them. (8 Marks)

6. (a) Write a perl program to simulate a simple hand calculator using basic operations like addition, subtraction, multiplication and division. The program should take the operation option and the arguments as command line arguments. (8 Marks)

Contd.... 2

(b) What is *.exrc* file ? When and why is it used ? Discuss. (8 Marks)

(c) Explain the mail command. (4 Marks)

7. (a) What is TCP/IP ? Explain the four layers of the same. (8 Marks)

(b) What is IP addressing ? What are the classes of networks available based on IP addressing ? Discuss. (8 Marks)

(c) What are the duties of a super user ? (4 Marks)

8. (a) What are inodes ? What information do they contain ? Discuss. Also mention how the memory is accessed using the information available with an inode. Draw relavant diagrams. (10 Marks)

(b) Explain the CPiO command. (5 Marks)

(c) Write a brief note on the command using which a report on the free space available on the disk can be obtained. (5 Marks)

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CS5A4

USN | | | | | | | | | | |

Fifth Semester B.E. Degree Examination, January/February 2005

Computer Science and Engineering

(Old Scheme)

Introduction to UNIX

Time: 3 hrs.] [Max.Marks : 100

Note: *1. Answer any FIVE full questions.*
2. All questions carry equal marks.

1. (a) Discuss the history of the UNIX operating system development. (6 Marks)

   (b) With a neat diagram, explain the relationship between the Kernel & shell of the UNIX operating system. (8 Marks)

   (c) Explain the following : banner, date, echo, who password, tty. (6 Marks)

2. (a) What is parent-child relationship? With the help of a diagram explain UNIX file system. (8 Marks)

   (b) Differentiate between relative and absolute pathname each with an example. (6 Marks)

   (c) Explain the following file handling commands wc, split, comm & cmp each with an example. (6 Marks)

3. (a) Explain the following with example: head, tail, cut, paste. (8 Marks)

   (b) Explain each column of the output of ls -l column. (6 Marks)

   (c) What are the different attributes of a file? Explain how they are modified. (6 Marks)

4. (a) What are the different modes of 'vi' editor? Explain. (6 Marks)

   (b) What are file and directory permissions? Explain how directory permissions are used in conjunction with file permissions to determine overall permission. (8 Marks)

   (c) Explain the 'grep' command using c, i & v options with example. (6 Marks)

5. (a) What are the shell parameters $*, $#, $? *and* $. Discuss very briefly. (6 Marks)

   (b) Write a shell script to create a menu which displays the list of files, current users, contents of a particular file & process status of the system based on the user choice. (8 Marks)

   (c) What is a mail command? Give any sin mail internal commands & explain them. (6 Marks)

Contd.... 2

6. (a) State any sin built in variables in awk & explain each. **(6 Marks)**

   (b) Using command line arguments write a perl program to find a given year is leap year. **(8 Marks)**

   (c) Explain line addressing and content addressing using SED, each with an example. **(6 Marks)**

7. (a) Explain TCP/IP concept? Explain the features of TCP/IP. **(6 Marks)**

   (b) What are IP addresses? How are they constructed? Discuss the various classes of networks based on IP addresses. **(8 Marks)**

   (c) What is a file transfer protocol? Explain briefly. **(6 Marks)**

8. (a) Explain what are inodes & different information these inodes contain. **(6 Marks)**

   (b) Discuss, with an example the 'cpio' command. **(6 Marks)**

   (c) Explain the concept of file system mounting and unmounting with examples. **(8 Marks)**

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CS5A4

USN | | | | | | | | | | |

Fifth Semester B.E. Degree Examination, July/August 2005

Computer Science and Engineering

(Old Scheme)

(8)

Introduction to UNIX

Time: 3 hrs.] [Max.Marks : 100

Note: *1. Answer any FIVE full questions.*
2. All questions carry equal marks.

1. (a) Briefly explain different features of UNIX Operating Systems. (6 Marks)

   (b) Explain the meaning of arguments, options arguments and filename arguments with examples. (6 Marks)

   (c) Explain the following with examples

   passed, echo, tput, bc (8 Marks)

2. (a) What is a file? Explain different types of files available in unix OS? Mention rules to be followed to name a file. (10 Marks)

   (b) Explain the meaning of standard input, standard output and standard error with example. (6 Marks)

   (c) Write the sequence of steps that shall follow, while processing a command. (4 Marks)

3. (a) List the input mode commands and save and exit commands of ex-mode with example. (10 Marks)

   (b) What is system variable? Explain different systems variables viable in UNIX Operating System. (10 Marks)

4. (a) With example explain different options of sort command. (10 Marks)

   (b) Explain mechanism of process creation. (6 Marks)

   (c) Write the syntax of mail command with options. (4 Marks)

5. (a) Explain numeric, string and file comparison with test command. (8 Marks)

   (b) Write the properties of regular expression when used in scd. (6 Marks)

   (c) Write the general syntax of scd and awk with examples. (6 Marks)

6. (a) Write a pril program using subroutine by name take-input which accepts the prompt string as argument, validate input for word characters and return the value of suppled input. (10 Marks)

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(b) With example with different operators available in Vi editor. (4 Marks)

(c) What is the meaning of conditional parameter substitution? Write different options available. (6 Marks)

7. (a) Explain r login, rcp and rsh. (6 Marks)

(b) List out the DOS diskettes handling commands in UNIX with example. (8 Marks)

(c) Write different standard file systems available in UNIX OS. (6 Marks)

8. (a) What is meant by password aging? List out the fields of a particular user in / etc/ shadow file. (8 Marks)

(b) Write a short notes on

mount, t disk, init, ping (3×4=12 Marks)

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