

A8-R4 : BASICS OF OS, UNIX AND SHELL PROGRAMMING

अवधि : 03 घंटे
DURATION : 03 Hours

अधिकतम अंक : 100
MAXIMUM MARKS : 100

ओएमआर शीट सं. :					
OMR Sheet No. :					

रोल नं. :

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Roll No. :

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उत्तर-पुस्तिका सं. :

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Answer Sheet No. :

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परीक्षार्थी का नाम : _____;Signature of Candidate : _____
Name of Candidate : _____

परीक्षार्थियों के लिए निर्देश :

Instructions for Candidate :

कृपया प्रश्न-पुस्तिका, ओएमआर शीट एवं उत्तर-पुस्तिका में दिये गए निर्देशों को ध्यानपूर्वक पढ़ें।	Carefully read the instructions given on Question Paper, OMR Sheet and Answer Sheet.
प्रश्न-पुस्तिका की भाषा अंग्रेजी है। परीक्षार्थी केवल अंग्रेजी भाषा में ही उत्तर दे सकते हैं।	Question Paper is in English language. Candidate can answer in English language only.
इस मॉड्यूल/पेपर के दो भाग हैं। भाग एक में चार प्रश्न और भाग दो में पाँच प्रश्न हैं।	There are TWO PARTS in this Module/Paper. PART ONE contains FOUR questions and PART TWO contains FIVE questions.
भाग एक "वैकल्पिक" प्रकार का है जिसके कुल अंक 40 हैं तथा भाग दो "व्यक्तिपरक" प्रकार का है और इसके कुल अंक 60 हैं।	PART ONE is Objective type and carries 40 Marks. PART TWO is Subjective type and carries 60 Marks.
भाग एक के उत्तर, इस प्रश्न-पत्र के साथ दी गई ओएमआर उत्तर-पुस्तिका पर, उसमें दिये गए अनुदेशों के अनुसार ही दिये जाने हैं। भाग दो की उत्तर-पुस्तिका में भाग एक के उत्तर नहीं दिये जाने चाहिए।	PART ONE is to be answered in the OMR ANSWER SHEET only, supplied with the question paper, as per the instructions contained therein. PART ONE is NOT to be answered in the answer book for PART TWO.
भाग एक के लिए अधिकतम समय सीमा एक घण्टा निर्धारित की गई है। भाग दो की उत्तर-पुस्तिका, भाग एक की उत्तर-पुस्तिका जमा कराने के पश्चात् दी जाएगी। तथापि, निर्धारित एक घंटे से पहले भाग एक पूरा करने वाले परीक्षार्थी भाग एक की उत्तर-पुस्तिका निरीक्षक को सौंपने के तुरंत बाद, भाग दो की उत्तर-पुस्तिका ले सकते हैं।	Maximum time allotted for PART ONE is ONE HOUR. Answer book for PART TWO will be supplied at the table when the Answer Sheet for PART ONE is returned. However, Candidates who complete PART ONE earlier than one hour, can collect the answer book for PART TWO immediately after handing over the Answer Sheet for PART ONE to the Invigilator.
परीक्षार्थी, उपस्थिति-पत्रिका पर हस्ताक्षर किए बिना और अपनी उत्तर-पुस्तिका, निरीक्षक को सौंपे बिना, परीक्षा हॉल/कमरा नहीं छोड़ सकते हैं। ऐसा नहीं करने पर, परीक्षार्थी को इस मॉड्यूल/पेपर में अयोग्य घोषित कर दिया जाएगा।	Candidate cannot leave the examination hall/room without signing on the attendance sheet and handing over his/her Answer Sheet to the Invigilator. Failing in doing so, will amount to disqualification of Candidate in this Module/Paper.
प्रश्न-पुस्तिका को खोलने के निर्देश मिलने के पश्चात् एवं उत्तर लिखना आरम्भ करने से पहले उम्मीदवार जाँच कर यह सुनिश्चित कर लें कि प्रश्न-पुस्तिका प्रत्येक दृष्टि से संपूर्ण है।	After receiving the instruction to open the booklet and before starting to answer the questions, the candidate should ensure that the Question Booklet is complete in all respect.

जब तक आपसे कहा न जाए, तब तक प्रश्न-पुस्तिका न खोलें।

DO NOT OPEN THE QUESTION BOOKLET UNTIL YOU ARE TOLD TO DO SO.

PART ONE

(Answer all the questions)

1. Each question below gives a multiple choice of answers. Choose the most appropriate one and enter in the "OMR" answer sheet supplied with the question paper, following instructions therein.

(1x10=10)

1.1 What is the output of who command ?

- (A) Display information about users who are currently logged in.
- (B) Display file hierarchy
- (C) Display administrator information
- (D) Display processes

1.2 The root directory is represented by _____.

- (A) \
- (B) /
- (C) *
- (D) \$

1.3 Which one of the following command can delete a directory which is **not** empty ?

- (A) rm -r
- (B) rmdir
- (C) rm *
- (D) del *

1.4 Which of the following is default permission set for directories ?

- (A) rw-rw-rw-
- (B) rwxrwxrwx
- (C) r-r-r-
- (D) rw-rw-rwx

1.5 To insert text into a file, which mode is used :

- (A) Command mode
- (B) Input mode
- (C) Ex mode
- (D) def mode

1.6 By default, how many lines are displayed using the head command ?

- (A) 5
- (B) 10
- (C) 4
- (D) 20

1.7 The complete set of positional parameters is stored as a single string in :

- (A) \$n
- (B) \$#
- (C) \$*
- (D) \$\$

1.8 The parent id of a child is called _____.

- (A) PID
- (B) PPID
- (C) TID
- (D) PTID

1.9 To select lines containing gupta and agarwal, from the file emp.lst, which command will be used ?

- (A) `sed -n '/gupta/,/agarwal/p' emp.lst`
- (B) `sed -n '/gupta/agarwal/p' emp.lst`
- (C) `sed '/gupta|agarwal'p' emp.lst`
- (D) `sed -n`

1.10 What is the default delimiter used by the cut command for cutting fields ?

- (A) space
- (B) tab
- (C) double tab
- (D) underscore

2. Each statement below is either TRUE or FALSE. Choose the most appropriate one and enter your choice in the "OMR" answer sheet supplied with the question paper, following instructions therein.

(1x10=10)

- 2.1 Options are also arguments but begin with a.
- 2.2 In UNIX, the file name and file size are stored in the file itself.
- 2.3 The output of \$HOME is an example of absolute pathname.
- 2.4 The inode number associated with a file is changed after renaming it.
- 2.5 UNIX allows the system administrator to use only chown to change both owner and group.
- 2.6 To create a space for entering a new line of text above the current cursor location, using vi, 'O' command is used.
- 2.7 `head -n 3 emp.lst | tr '[a-z]' '[A-Z]'`, command will change the case of text from lower to upper.
- 2.8 There can be multiple kernels on a single UNIX system.
- 2.9 Every time shift command is used, the leftmost variable is lost.
- 2.10 When we use `&&`, the second command is executed only when first succeeds.

3. Match words and phrases in column X with the closest related meaning / word(s) / phrase(s) in column Y. Enter your selection in the "OMR" answer sheet supplied with the question paper, following instructions therein. (1x10=10)

	X		Y
3.1	dev/null	A.	touch
3.2	key used to replace a single character with new text	B.	file
3.3	used to separate more than one command in the same command line	C.	ps
3.4	sits between the user and the UNIX system	D.	has write permission for all
3.5	used to update access and modification times of a file	E.	1
3.6	command used to display the characteristics of a process	F.	#
3.7	used to identify the type of file by context	G.	cat
3.8	exit status of cmp command if both the files are identical	H.	s
3.9	first line in any shell script begins with a	I.	\$
3.10	When we can access a file with multiple file names, that the file has multiple	J.	Shell
		K.	0
		L.	;
		M.	Links

4. Each statement below has a blank space to fit one of the word(s) or phrase(s) in the list below. Choose the most appropriate option, enter your choice in the "OMR" answer sheet supplied with the question paper, following instructions therein. (1x10=10)

A.	yy	B.	home	C.	-f
D.	su	E.	Meta characters	F.	-e
G.	-n	H.	666	I.	case
J.	parent	K.	mv	L.	recording the session
M.	-m				

- 4.1 The default permissions for a regular file are _____.
- 4.2 Special characters having predefined meaning to the shell are known as _____.
- 4.3 script command is used for _____.
- 4.4 When we log in, the UNIX places us in a directory, called _____ directory.
- 4.5 _____ command is used for renaming files.
- 4.6 To copy lines in vi editor, we use _____ command.
- 4.7 _____ option is used when we need to match multiple patterns in a single invocation of grep command.
- 4.8 _____ command is used for acquiring superuser status.
- 4.9 _____ option is used for taking instructions from a file using sed.
- 4.10 _____ statement matches an expression for more than one alternative.

PART TWO

(Answer any FOUR questions)

5. (a) Write a Shell program to check the given number and its reverse are same.
- (b) Discuss the file structure of UNIX system. Also mention the key directories and their usage.
- (c) What are the different modes of vi editor ? Explain with diagram how to switch between the modes ?
(5+6+4)
6. (a) Explain the mechanism of a process creation ? How child process is created ?
- (b) What are the positional parameters? Discuss various positional parameters with their significance.
- (c) Explain grep command with its options.
(6+4+5)
7. (a) Write a single Unix pipeline command to store a sorted list of lines that do contain nameJones (any case) in a file called phone_numbers.txt at the back of the file "PHONES".
- (b) Write a single Unix pipeline command to display only lines 7 to 14 for a file called "input" contained in your parent directory.
- (c) Write a sed command to insert 5 blank spaces to the left of every line.
(5+5+5)
8. (a) Write a Shell program to find the sum of digits of a number until a single digit is obtained.
- (b) How does uniq command works ? Explain various options of the uniq command with examples.
- (c) What are filters ? List various filters available in UNIX.
(5+5+5)
9. (a) What does a process table contain ?
- (b) What are environment variables ? Explain the function of the following environment variables :
- (i) SHELL
 - (ii) HOME
 - (iii) PATH
 - (iv) LOGNAME
 - (v) TERM
 - (vi) PWD
- (c) List any four features of UNIX.
(5+6+4)

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SPACE FOR ROUGH WORK

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