

## 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.:   
Roll No.:

उत्तर-पुस्तिका सं.:   
Answer Sheet No.:

परीक्षार्थी का नाम: \_\_\_\_\_; परीक्षार्थी के हस्ताक्षर: \_\_\_\_\_  
Name of Candidate: \_\_\_\_\_; Signature of candidate: \_\_\_\_\_

### परीक्षार्थियों के लिए निर्देश:

### Instructions for Candidate:

कृपया प्रश्न-पुस्तिका, ओएमआर शीट एवं उत्तर-पुस्तिका में दिये गए निर्देशों को ध्यान पूर्वक 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 कर सकता है।	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 <b>TWO PARTS</b> in this Module/Paper. <b>PART ONE</b> contains <b>FOUR</b> questions and <b>PART TWO</b> contains <b>FIVE</b> questions.
भाग एक "वैकल्पिक" प्रकार का है जिसके कुल अंक 40 हैं तथा भाग दो, "व्यक्तिपरक" प्रकार है और इसके कुल अंक 60 हैं।	<b>PART ONE</b> is Objective type and carries 40 Marks. <b>PART TWO</b> 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।	<b>PART ONE</b> is to be answered in the <b>OMR ANSWER SHEET</b> only, supplied with the question paper, as per the instructions contained therein. <b>PART ONE</b> is <b>NOT</b> to be answered in the answer book for <b>PART TWO</b> .
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 पश्चात 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 <b>PART ONE</b> is <b>ONE HOUR</b> . Answer book for <b>PART TWO</b> will be supplied at the table when the answer sheet for <b>PART ONE</b> is returned. However, candidates who complete <b>PART ONE</b> earlier than one hour, can collect the answer book for <b>PART TWO</b> immediately after handing over the answer sheet for <b>PART ONE</b> .
परीक्षार्थी, उपस्थिति-पत्रिका पर हस्ताक्षर किए बिना अथवा अपनी उत्तर-पुस्तिका, निरीक्षक को सौंपे बिना, परीक्षा हॉल नहीं छोड़ सकता है। 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 or handing over his 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 पश्चात एवं उत्तर देने से पहले उम्मीदवार यह जाँच कर यह सुनिश्चित कर ले कि प्रश्न-पुस्तिका प्रत्येक दृष्टि से संपूर्ण है।	After receiving the instruction to open the booklet and before answering the questions, the candidate should ensure that the Question booklet is complete in all respect.
<b>नोट: यदि हिन्दी संस्करण में कोई त्रुटि / विसंगति पाई जाती है, तो उस अवस्था में अंग्रेजी संस्करण ही मान्य होगा।</b> <b>Note: In case of any discrepancy found in Hindi language, English version will be treated as final.</b>	

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)**

- 1.1 Which symbol will be used with grep command to match the pattern pat at the beginning of a line?
- A) ^pat
  - B) \$pat
  - C) pat\$
  - D) pat^
- 1.2 Which command will be used with vi editor to replace text from cursor to right?
- A) r
  - B) R
  - C) s
  - D) S
- 1.3 The octal representation 652 indicates
- A) Execute permission for the owner
  - B) Write permission for others
  - C) Read and write permission of groups
  - D) All of the above
- 1.4 To increase the response time and throughput, the kernel minimizes the frequency of disk access by keeping a pool of internal data buffer called
- A) Pooling
  - B) Spooling
  - C) Buffer Cache
  - D) Swapping
- 1.5 Which command is used to display the operating system name?
- A) os
  - B) Unix
  - C) kernel
  - D) uname
- 1.6 Which command changes a file's group owner?
- A) cgrp
  - B) chgrp
  - C) change
  - D) group
- 1.7 Which command sends the word count of the file infile to the newfile.
- A) wc infile >newfile
  - B) wc <infile >newfile
  - C) wc infile - newfile
  - D) wc infile | newfile

- 1.8 The second set of the three permissions (r-) indicates that
- A) group has read permission only
  - B) other has read permission only
  - C) owner has read permission only
  - D) group has write permission only

- 1.9 The permission -rwxr-- represented in octal expression will be
- A) 777
  - B) 666
  - C) 744
  - D) 711

- 1.10 Which command is used to bring the background process to foreground?
- A) bg
  - B) fg
  - C) background
  - D) foreground

**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)**

- 2.1 Checking the return value of the fork() function enables a child process to execute different instructions from its parent.
- 2.2 Since a child process can write to all files that are open by its parent at the time of the fork, these writes can create a race condition with writes from the parent.
- 2.3 One of the advantages of multitasking is that it makes the system more responsive to user inputs.
- 2.4 The environment cannot be customized using the shell variables.
- 2.5 The Korn shell is an extension of the Bourne shell which is backward compatible.
- 2.6 Piping in unix not allows the user to set the output of a specific operation as input to another.
- 2.7 Compaction is the process of reducing the amount of data needed for the storage.
- 2.8 Sed command in UNIX is commonly used for processing of files.
- 2.9 A zombie is a process which is completed the execution and still available in the process table.
- 2.10 A loader is a program that combines these object modules to form an executable.

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)

X		Y	
3.1	displays information on processes currently running on your machine	A.	NICE
3.2	Gives the full pathname of your current directory.	B.	sort -r
3.3	causes a command to be run at a lower than usual priority	C.	MAN
3.4	gives information on a user's disk space quota and usage	D.	PS
3.5	copies lines from your terminal to another user's terminal	E.	LPR
3.6	Reverses the order of the collating sequence.	F.	QUOTA
3.7	counts the number of lines, words, and characters in files	G.	LS
3.8	Displays on-line reference manual pages.	H.	PWD
3.9	Displays the contents of a file on a terminal one screenful at a time.	I.	TALK
3.10	Is used to send the contents of a file to a printer.	J.	WC
		K.	MORE
		L.	MKDIR
		M.	MV

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)

A.	Zombie	B.	background	C.	LPR
D.	Daemon	E.	Orphan	F.	Bourne-type shell
G.	/etc/profile	H.	foreground	I.	Finger
J.	C-type shell	K.	suspended	L.	HALT
M.	logout				

- 4.1 The shell checks to see whether the file \_\_\_\_\_ exists.
- 4.2 By default, every process that you start runs in the \_\_\_\_\_.
- 4.3 A \_\_\_\_\_ process runs without being connected to your keyboard.
- 4.4 Background and \_\_\_\_\_ processes are usually manipulated via job number (job ID).
- 4.5 If you are using a \_\_\_\_\_, the default prompt is the % character.
- 4.6 If you are using a \_\_\_\_\_, the default prompt is the \$ character.
- 4.7 Just type \_\_\_\_\_ command at command prompt, and the system will clean up everything.
- 4.8 \_\_\_\_\_ Brings the system down immediately.
- 4.9 \_\_\_\_\_ is used to send the contents of a file to a printer.
- 4.10 \_\_\_\_\_ can be used to obtain information on users on your own and other machines.

**PART TWO**  
**(Answer any FOUR questions)**

- 5.**
- a) Write Script to find out biggest number from given three nos. No's are supplies as command line argument. Print error if sufficient arguments are not supplied.
  - b) Write script called say Hello, put this script into your startup file called .bash\_profile, the script should run as soon as you logon to system, and it print any one of the following message in info box using dialog utility, if installed in your system, If dialog utility is not installed then use echo statement to print message : -  
Good Morning  
Good Afternoon  
Good Evening, according to system time.

**(7+8)**

- 6.**
- a) What are the Components of UNIX Operating System?
  - b) What is the difference in external and internal commands in UNIX? Give example of each.
  - c) Explain use of finger command with the help of example.
  - d) How the permission can be changed for a file or directory? Give example.

**(5+5+3+2)**

- 7.**
- a) Explain Linux File Hierarchy Concepts?
  - b) List the name of Some Important Directories in Linux with brief descriptions?
  - c) What is X windows system? What is the role of X server?

**(5+5+5)**

- 8.**
- a) Why we need partitions in Linux? Explain Data Partition and Swap Partition.
  - b) What is Shell? Give some brief history of different types Shell.
  - c) Explain Zombie process, Orphan process and Daemon process in terms of UNIX?

**(5+5+5)**

- 9.**
- a) Differentiate between physical address and logical address.
  - b) What is a process? Draw process state diagram and explain.
  - c) What are the usages CRON and CRONTAB in LINUX?

**(5+5+5)**

