B2.3-R4 : BASICS OF OS, UNIX AND SHELL PROGRAMMING

अवधि : 03 घंटे **अधिकतम अंक : 100**
DURATION : 03 Hours **MAXIMUM MARKS : 100**

ओएमआर शीट सं. : OMR Sheet No. :						

रोल नं. : **Roll No. :** | | | | | | |

उत्तर-पुस्तिका सं. : **Answer Sheet No. :** | | | | | | |

परीक्षार्थी का नाम : **Name of Candidate :** _____

परीक्षार्थी के हस्ताक्षर : **Signature of Candidate :** _____

परीक्षार्थियों के लिए निर्देश :	**Instructions for Candidates :**
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 अंग्रेजी भाषा में है। परीक्षार्थी उत्तर लिखने के लिए केवल अंग्रेजी भाषा का ही प्रयोग कर सकते हैं।	Question Paper is in English language. Candidate has to 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** है तथा **भाग दो** ''व्यक्तिपरक'' प्रकार का है और इसके कुल अंक **60** है।	**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 यह जाँच कर 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 attached to the question paper, following instructions therein.

(1 x 10)

1.1 Generally, Configuration files are stored at :

(A) etc

(B) bin

(C) FAT

(D) bash

1.2 Which command is used in shell to read a line from a terminal ?

(A) getarg

(B) read

(C) cat

(D) readterm

1.3 Which of the following is not a feature of Unix ?

(A) User friendly GUI

(B) Multiuser

(C) Portability

(D) All of the above are the feature of unix

1.4 Which command is used in vi editor to save and exit ?

(A) :wq!

(B) :q

(C) :q!

(D) :wq

1.5 Which of the command is used to see available disk space ?

(A) du

(B) df

(C) /\<he\>

(D) ds

1.6 Inode denotes _____.

(A) File serial number

(B) File access number

(C) File identity number

(D) File sequence number

1.7 Which of the following used to get parent process ID ?

(A) ID

(B) PID

(C) PPID

(D) PaID

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1.8 Which of the following command is used to list all files with extension ".c" ?

(A) ls"*.c"

(B) ls .c

(C) ls ".c"

(D) ls *.c

1.9 Which option of ls command used to view file inode number ?

(A) -l

(B) -o

(C) -a

(D) -i

1.10 The permission -rwxr-r- represented in octal expression will be :

(A) 777

(B) 744

(C) 764

(D) 711

2. Each statement below is either TRUE or FALSE. Choose the most appropriate one and ENTER in the "OMR" sheet attached to the question paper, following instructions therein.

(1 x 10)

2.1 The UNIX operating system is based on LINUX.

2.2 The root account in Linux is not most privileged user.

2.3 Users and root user in Linux can have blank password.

2.4 chown is used for to change owner.

2.5 pwd command is used to change password.

2.6 BIOS is used by the operating system. It is used to configure and identify the hardware in a system such as the hard drive, floppy drive, optical drive, CPU, and memory.

2.7 The ps command produces a report of the processes that run on a Linux system.

2.8 In Linux, the directory structure follows the Filesystem Hierarchy Structure.

2.9 Linux kernel is modular in nature and is not a large massive entity.

2.10 Kernel is a collection of different software applications.

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

(1x 10)

	Column X		Column Y
3.1	kill	**A.**	string containing all arguments
3.2	/etc/shadow	**B.**	Used to manage files
3.3	$*	**C.**	Terminate the child process only
3.4	tee	**D.**	Terminate the process
3.5	nice value	**E.**	Used to clear the file
3.6	cmchk	**F.**	is a text file that contains information about the system's users' passwords
3.7	mkfs	**G.**	gives the block size
3.8	Gzip	**H.**	Used to create file system
3.9	whoami	**I.**	Compress's the files and directories
3.10	FTP	**J.**	Used to get the user name
		K.	use to control the priority of a process
		L.	reads the standard input and writes it to both the standard output and one or more files
		M.	File Transfer Protocol

4. Each statement below has a blank space to fit one of the word(s) of phrases in the list below. Enter your choice in the "OMR" answer sheet attached to the question paper, following instructions therein.

(1 x 10)

A.	GUI	**B.**	Kernel	**C.**	fork
D.	Virtual Address space	**E.**	Address table	**F.**	orphan
G.	Zombie	**H.**	CTRL + Q	**I.**	CTRL + Z
J.	UNIX	**K.**	GNU	**L.**	whatis
M.	SEEK_END				

4.1 _____ command in Linux is used to get a one-line manual page descriptions.

4.2 Stallman developed _____, an operating system that would be freely available.

4.3 Thompson and Ritchie rewrote _____ operating system in C Language.

4.4 _____ of the UNIX operating system interacts with the hardware.

4.5 _____ system call is used for creating a new process.

4.6 _____ is the collection of memory locations that the process can access.

4.7 If the child dies first but the entry of that child in the process table is still present, then that process is called _____.

4.8 _____ offset is used with lseek system call to set the offset pointer to the end of the file.

4.9 _____ command is used to suspend a job.

4.10 _____ is not a part of all the versions of UNIX.

PART TWO

(Answer anyFOUR questions)

5. (a) How to modify the file permissions using command line ? Explain in detail with example.

(b) Explain any four principles of LINUX in brief.

(7+8)

6. (a) Write a shell script to multiply, add and subtract two numbers with run time input.

(b) Write a shell script for calculating factorial.

(6+9)

7. (a) Describe Linux boot process.

(b) Explain vfork() system call.

(c) Write a note on Bash shell.

(5+5+5)

8. (a) Write a shell script to check if the number is palindrome or not.

(b) List down the information stored in Inode.

(c) Write a brief note on memory management in Linux.

(6+4+5)

9. (a) What is X server, X Window System, Telnet Utility and Daemon program ?

(b) Differentiate multi-tasking and multi programming.

(c) Describe UNIX and LINUX in brief.

(5+5+5)

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