| BICS-026 |

B.Tech. – VIEP – COMPUTER SCIENCE AND ENGINEERING (BTCSVI)

☐☐8☐54 **Term-End Examination**

June, 2014

BICS-026 : UNIX INTERNALS AND SHELL PROGRAMMING

Time : 3 hours   *Maximum Marks : 70*

*Note : Attempt any **seven** questions. Each question carries equal marks.*

1. Discuss the characteristics of the UNIX operating system. Draw the architecture of UNIX system and describe each layer. *4+6*

2. How are the blocks of file system organised in four categories ? Explain each of them. What are the different ways of setting file permission ? Explain. *5+5*

3. Explain the following : *5+5*
   (a) Why is UNIX more portable than any other operating system ?
   (b) "UNIX views everything in the form of file." Justify this statement with example.

4. What is a process ? Explain how a process is created using the three primitives : fork, exec and wait. *10*

5. List the sequence of events that occur when one turns on the computer. Give the syntax and uses of the following utilities : *4+6*

    (a)   df

    (b)   cron

    (c)   mkfs

6. Write short notes on the following : *5+5*

    (a)   Shell and environmental variables

    (b)   Shells in UNIX

7. Write a shell program which displays the number of occurences of string2 in string1. *10*

8. Write following shell scripts : *5+5*

    (a)   Write a shell script that accepts the file name on the command line if the file is readable, then counts the number of lines, words and characters in this file.

    (b)   Write a shell script to reverse a number.

9. Discuss the following IPC (Inter Process Communication) mechanisms : *5+5*

    (a)   Message Passing

    (b)   Pipes (both named and unnamed)

10. What do you mean by a 'Daemon' ? Explain the function of INIT daemon. How will you kill a daemon ? *10*