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

Term-End Examination

June, 2019

BICS-026 : UNIX INTERNALS AND SHELL PROGRAMMING

Time : 3 hours   *Maximum Marks : 70*

Note :   *Answer any seven questions. All questions carry equal marks.*

1.   What is an Operating System ? Briefly discuss   **10**
     the components of Operating System, draw block
     diagram in support of your discussion.
     Differentiate between Windows and UNIX
     operating systems.

2.   What do you understand by the term, 'Shell' in   **10**
     operating system ? Briefly discuss the role of
     'Shell' in operating system, and write a Shell
     program to find the Greatest Common Divisor
     (GCD) for any two given numbers.

3.   What is a 'process' in Operating System ? How   **10**
     'process' differs from 'thread' ? Explain the
     concept of process creation in UNIX. Give
     suitable example in support of your explanation.

4.   What are Semaphores in Operating System ?   **10**
     Briefly discuss the role/utility of Semaphores in
     the operation of Operating System.

5. Discuss the role of Socket in network **10** Communication. Write a socket program to transfer a file from server to multiple clients.

6. Compare and Contrast the following : **10**
   (a) System BOOT and INIT process
   (b) C-Shell and Bourne Shell

7. Write short notes on the following : **10**
   (a) File Structure of UNIX
   (b) System Calls in UNIX
   (c) Inter-process Communication in UNIX
   (d) Process States and transitions

8. Write UNIX Commands for the following : **10**
   (a) Change all the permissions of a file
   (b) Write content of three files in to a Simple file
   (c) Make a link of a file named test. C in the same working directory.
   (d) Display total number of users who have logged on UNIX.
   (e) Remove a directory which consist of 10 files.

9. What is an inode in UNIX Operating System ? **10** Briefly discuss its significance in UNIX. What is the information that inode stores ?

10. Explain the concept of pipes in UNIX ? How this **10** concept is used for redirection of files ? Give suitable example in support of your answer.