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(Please write your Exam Roll No.)

Exam Roll No. 0421022007

# END TERM EXAMINATION

FIFTH SEMESTER [BCA] DECEMBER-2009

Paper Code: BCA305

Subject: Linux Environment

Paper Id-20305

Time : 3 Hours

Maximum Marks :75

Note: Q.1 is compulsory. Attempt one question from each unit.

- Q1 Attempt **any five** of the following:- (5x5=25)
- (a) 'Linux operating system supports multiprocessing, multiprogramming and multiuser'. Elucidate.
  - (b) Explain the Linux Architecture.
  - (c) Write a shell program to print all files that have read permission only.
  - (d) Explain the virtual address space for a process.
  - (e) Describe the interrupt handling.
  - (f) Write shell command for the following:-
    - (i) To add the contents of one file to another.
    - (ii) To print the last 5 lines from a file.
  - (g) Write a shell program to accept any 3 numbers from the command line and print the largest number.

### UNIT-I

- Q2 (a) Write a shell program to print the number of users that are logged in. (2.5)  
 (b) Explain in brief the data structure in Linux Kernel. (2)  
 (c) Define the following:- (i) getpid (ii) pause (iii) fork (iv) execve (8)

OR

- Q3 (a) Explain any two with suitable example (4)  
 (i) chmod (ii) wc (iii) grep  
 (b) Explain the advantages and disadvantages of dynamic memory allocation in the Kernel segment. (4.5)  
 (c) Write short notes on the following:- (4)  
 (i) Paging under LINUX (ii) Block devices

### UNIT-II

- Q4 Explain the following:- (6.5+3+3)  
 (a) Client - server model (b) Pipes (c) Shared memory  
 OR  
 Q5 (a) How does synchronization in the kernel take place? (6.5)  
 (b) What is message queue? (3)  
 (c) Explain ipc and ipcrm commands. (3)

### UNIT-III

- Q6 (a) What is the function of Kernel daemon? (6.5)  
 (b) What is module stacking? (3)  
 (c) Explain the Gdb and printk( ) commands. (3)

OR

- Q7 Explain the file system in LINUX. (12.5)

### UNIT-IV

- Q8 Explain the following:- (4+8.5)  
 (a) Spooling (b) Symmetric multiprocess  
 OR  
 Q9 (a) Explain how message is exchanged between processes? (6.5)  
 (b) What are the problems with multiprocessor systems? (6)

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