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Invigilator's Signature :	

# CS/BCA/SEM-5/BCA-E-501A/2011-12 2011

# ADVANCED UNIX AND SHELL PROGRAMMING

Time Allotted: 3 Hours Full Marks: 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

### **GROUP - A**

## ( Multiple Choice Type Questions )

- 1. Choose the correct alternatives for the following:  $10 \times 1 = 10$ 
  - i) Which of the following system call verifies the integrity of a file system?
    - a) Tee

b) Fesk

c) Task

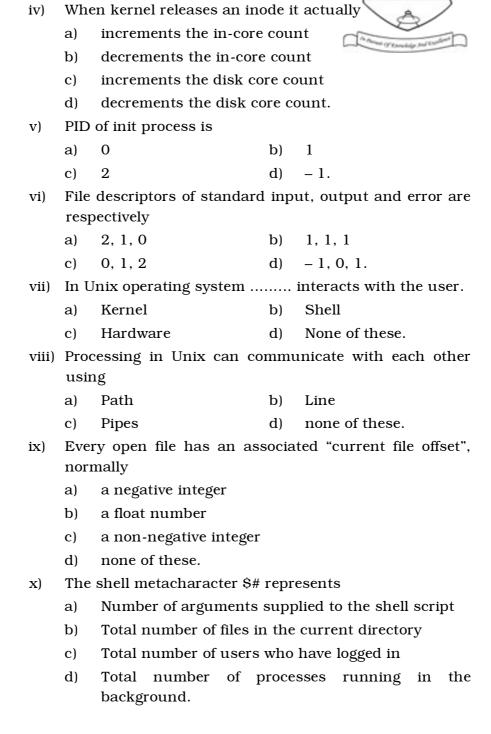
- d) None of these.
- ii) What  $$ \exp 10 20 \text{ returns } ?$ 
  - a) 10

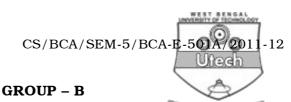
- b) 10
- c) Syntax error
- d) None of these.
- iii) To control new window and communicating with it we use
  - a) Fork

- b) Mpx
- c) Mpx forks
- d) none of the above.

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## (Short Answer Type Questions)

Answer any three of the following.

 $3 \times 5 = 15$ 

- 2. Name three mechanisms which are adopted for a) interprocess communication in UNIX.
  - List down the common features they share. 2 + 3b)
- How system call is related with mounting and unmounting a 3. file system. Differentiate su and su-brain. 2 + 3
- Describe the file structure in UNIX. 4.
- 5. Explain the following commands:
  - mkdir a)
  - b) grep.

### GROUP - C

## (Long Answer Type Questions)

Answer any three of the following.  $3 \times 15 = 45$ 

- 6. a) Write a short note on memory mapped I/O. Write the advantages of swapping and demand paging. 4 + 3
  - What is a signal? Write down the classifications of b) signal and explain how they are handled by kernel.

1 + 3 + 4

7. Describe scheduling process. a)

- 4
- b) Explain how the semaphores are created.
- 4

- What is socket? Write the usage of it. c)
- 1 + 2
- d) What are projection faults? Why does it happen? 2 + 2

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- 8. What is inter-process communication in UNIX a) How pipe system call is used in inter-process b) communication? Explain with an example. c) Describe new process creation with fork system call. d) How are exec system calls used with fork to run a separate process? 3 + 4 + 4 + 49. What is a reliable signal? Explain the four primary a) features of reliable signals. Write in detail about the interrupted system calls. b) Write in detail about kill and raise functions. c) 5 + 5 + 5What is process table? What is an advantage of 10. a) executing a process in background? Write a C program using process related system calls to b) create a child process from a parent process, which shows PID, PPID in both parent and child. Why is signal unreliable? (2+3)+7+3c)
  - a) Open server
  - b) Super Block
  - c) Swapping strategy

11. Write shot notes on any *three* of the following :

 $3 \times 5$ 

- d) Umask and chmod
- e) Inode.

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