

Name : .....

Roll No. : .....

Invigilator's Signature : .....

**CS/BCA(Separate Supple)/SEM-5/BCAE-501A/2011**

**2011**

**ADVANCED UNIX**

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.*

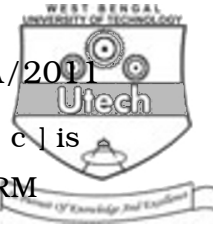
**GROUP – A**

**( Multiple Choice Type Questions )**

1. Choose the correct alternatives for the following :

10 × 1 = 10

- i) getppid ( ) is used to return
  - a) Child Process ID
  - b) Parent Process ID
  - c) Both (a) & (b)
  - d) none of these.
- ii) getpid ( ) is used to return
  - a) Child Process ID
  - b) Parent Process ID
  - c) Both (a) & (b)
  - d) none of these.
- iii) nice command is used to
  - a) Create a process
  - b) Terminate a process
  - c) Set priority of a process
  - d) None of these.



- iv) The signal generated by pressing [ ctrl + c ] is
  - a) SIGINT
  - b) SIGTERM
  - c) SIGFPE
  - d) SIGSEGV.
- v) Which attribute of the followings is *NOT* mentioned in INODE table
  - a) File name
  - b) Group ID
  - c) File Size
  - d) File Access Permissions.
- vi) File Descriptor of Standard Output Device in UNIX is
  - a) 2
  - b) 1
  - c) 0
  - d) 5.
- vii) i) Hard links of a file has the same inode no. as the file
- ii) Soft links of a file has the different inode no. as of the file.
  - a) Both (i) & (ii) are correct
  - b) Only (i) is correct
  - c) Only (ii) is correct
  - d) None of above is correct.
- viii) Which of the following calls is used in shared memory ?
  - a) Signal
  - b) Setgrip
  - c) Senget
  - d) Shmdt.
- ix) Daemon for Web Server in UNIX is
  - a) Httpd
  - b) inetd
  - c) Mysgld
  - d) squid.
- x) Bind system call is associated with
  - a) stream
  - b) socket
  - c) message
  - d) semaphore.



**GROUP – B**

**( Short Answer Type Questions )**

Answer any *three* of the following.  $3 \times 5 = 15$

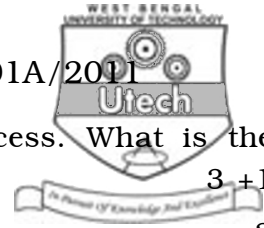
2. Write a c program to create a process and display which process currently running ( Parent Process or Child Process ).
3. Define Context Switching. Draw process state transition diagram.  $2 + 3$
4. Name three mechanisms which are adopted for Inter-process Communication in UNIX. List down the common features they share.  $2 + 3$
5. Describe two main functions of init. What are the different types of sources to generate signals ?  $2 + 3$
6. What is u-area ? Explain its fields.  $2 + 3$

**GROUP – C**

**( Long Answer Type Questions )**

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

7. a) What is process ? Write some characteristics of a process.  $1 + 3$
- b) What are the different methods to create a process and which method is more secure and why ?  $2 + 2$
- c) Write a program to display the process ID of the parent process and the child process.  $5$
- d) Write the names of some functions ( at least four ) of exec family.  $2$



8. a) Explain the importance of init process. What is the process ID of init process ? 3 + 1
- b) Explain the fork ( ) and exec ( ). 3
- c) What are the different methods to terminate a process ? 3
- d) What are the different ways to schedule a process ? 2
- e) What is zombie process ? Explain the importance of it. 1 + 2
9. a) Explain different process states giving a diagrammatic representation. 10
- b) Explain the utility of wait ( ) function. 2
- c) What is daemon ? Give the name of four common daemon with their functions. 3
10. a) Explain IPC. Mention three different techniques for IPC. 1 + 2
- b) What is pipe ? Explain its working principle. 2 + 2
- c) Explain : 2 × 4
- i) popen ( )
- ii) pclose ( )
- iii) dup ( )
- iv) dup2 ( ).
11. Write short notes on any *three* of the following : 3 × 5
- a) Memory mapped I/O
- b) Semaphore
- c) Stream
- d) Open server
- e) Umask and chmod.

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