

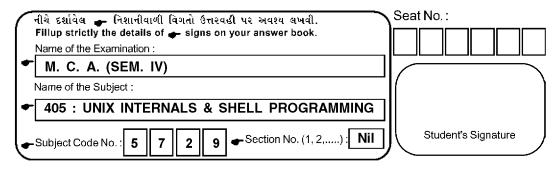
AB-5729

M. C. A. (Sem. IV) Examination May/June - 2015

405 : UNIX Internals & Shell Programming

Time: 3 Hours] [Total Marks: 70

Instruction:



1 Attempt the following: (any two)

14

7

7

7

- (a) Explain the block diagram of the system kernel, mentioning briefly the functionality of each component.
- (b) Write a note on Shell and various programming constructs offered by shell.
- (c) Write a note on UNIX pipes.
- ${\bf 2} \qquad {\bf Attempt} \ \ {\bf the} \ \ {\bf following} \ :$
 - (a) What is file in UNIX? Explain system calls for reading and writing file streams.

OR

- (a) Show, with diagrams, how regular files are stored in UNIX.
- (b) Briefly explain superblock and its importance in UNIX file system.
- **3** Write shell scripts from the following :
 - (a) Which are the memory management policies adapted by UNIX kernel? Briefly discuss their benefits and limitations.

(b) Write a shell script to input text and print the number of alphabets, vowels, words, numbers, special characters, without using *wc* command.

OR

- (b) Write a C code to simulate the "Is" command of UNIX.
- 4 Attempt the following: (any two)

14

- (a) Write a note on IPC of UNIX.
- (b) Briefly, explain the two data structure that describes the state of the process Process table and the u-area.
- (c) Write a note on semaphores.
- 5 Attempt the following: (any two)

14

- (a) Write a note on awk command as a programming tool of UNIX.
- (b) Explain sed command of UNIX in detail.
- (c) Which are the memory management policies adapted by UNIX kernel? Briefly discuss their benefits and limitations.

AB-5729] 2 [200]