

Government College Of Engineering, Aurangabad

(An Autonomous Institute Of Government of Maharashtra)

BE (CSE) FT Examination
End Semester examination Nov-2016

CS-444 :- DESIGN OF LINUX OPERATING SYSTEM

Time: Three hours **21 NOV 2016** *Max marks:60*

“Verify the code & check whether you have got the correct question paper or not”

N.B :-

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Assume suitable data if necessary.
4. Use of non-programmable calculator is allowed.

Q.1 Attempt the following: (12)

1. Discuss design principals of LINUX OS.
2. State whether true or false:-
 - i. Windows NT,2000 is a Hybrid kernel.
 - ii. QNX is a micro kernel.
 - iii. 2.6.1 indicates stable version.
 - iv. Monolithic kernels have small install foot prints & memory foot prints.
 - v. 1 double indirect block with 256 indirect blocks=16 GB.
 - vi. Kernel stores list of processes in a circular single linked list called task list.

Q.2 Attempt any two of the following: (12)

1. Define Scheduling , types of scheduling, goals & policy of scheduling /scheduler design.
2. Define user level threads & kernel level threads, Contrast & compare user level threads & kernel level threads .
3. Contrast & compare user preemption and kernel preemption .

Q.3 Attempt any two of the following: (12)

1. Discuss character devices ,block devices & network devices with example.
2. Design a C program to demonstrate use of open ,close , read and write system calls.
3. Define Inode , discuss procedure of Inode assignment to a new file .

Q.4 Attempt any two of the following: (12)

1. Justify why there is need of slab layer . How slab layer is structured and implemented in Linux/Unix system
2. Discuss proc file system.
3. Describe VFS & different filesystems under it ,differentiate Ext3 & Ext4 file systems .

Q.5 1. Attempt any one of the following: (06)

- 1.1 Design a shell script to using command line arguments.
- 1.2 Illustrate a shell script to crate a simple menu to display date,time,directory,calendar & take action according to these menus.

Q.5 2. Discuss Android OS with linux & its applications. (06)