May - 2016

[4958] - 1084

T. E. (Computer Engineering)

OPERATING SYSTEMS DESIGN

310242:(Semester - I) (2012 Course)(End Sem.)

Time : 2.30 Hours]   *[Max. Marks :70*

Instructions to the candidates:

1) *Answer the Q.1 OR Q2, Q3 OR Q4, Q5 OR Q6, Q7 OR Q8 Q9 OR10.*
2) *Neat diagrms must be drawn wherever necessary.*
3) *Figures to the right side indicate full marks.*

Q1) a) Explain following algorithms of Buffer cache   [6]

     i)   getblk

     ii)   brelease

   b) Explain Unix file system structure.   [4]

OR

Q2) a) Is operating system itself a process? Justify your answer.   [5]

   b) Explain in details six steps of Android boot process.   [5]

Q3) a) Explain with example data structures used for demand paging.   [5]

   b) Explain with neat diagram address translation in paging.   [5]

OR

Q4) a) Explain with neat diagram Linux memory management.   [4]

   b) Write in short - allocating and freeing swap space.   [6]

Q5) a) Explain shared memory with its system calls. [8]

b) What is Inter - process communication? Why it is important in operating system? [8]

OR

Q6) a) What do you mean by pipe? Explain anonymous and named / FIFO pipe. [8]

b) What is semaphore? Provide solution to producer - consumer problem using semaphore. [8]

Q7) a) What is make utility? Explain it with example. Consider your own makefile. [8]

b) Compare grep and awk utilities. State one example of each. [8]

OR

Q8) a) What are the EFI and UEFI? Explain with an application. [8]

b) Write AWK script to generate a report on student database. [8]

Q9) a) What is multiprocessor system? List the types of multiprocessor system. [6]

b) What is UNIX Free - BSD scheduler? List different priority levels of the same. [6]

c) Explain different types of approaches for real time scheduling. [6]

OR

Q10) a) Enlist different characteristics of real time system and explain it. [9]

b) Write short notes on [9]

   i) Palm OS

   ii) Master / Slave Architecture

   iii) Frame of Reference