

Total No. of Questions :10]

SEAT No. :

**P2891**

[Total No. of Pages :2

**[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 diagrams 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]**

**P.T.O.**

- 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

