

Total No. of Questions : 10]

SEAT No. :

P1340

[Total No. of Pages : 2

**[4858] - 1084**  
**T.E. (Computer Engineering)**  
**OPERATING SYSTEMS DESIGN**  
**(2012 Pattern) (Semester - I) (End Sem.)**

*Time : 2 1/2 Hours]*

*[Max. Marks : 70*

*Instructions to the candidates:*

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicate full marks.*

- Q1)** a) Explain in short - BIOS, MBR and init( ) process. **[6]**  
b) Explain Kernel Structure. With neat diagram. **[4]**

OR

- Q2)** a) Explain with neat diagram process states and transition. **[5]**  
b) What is disk inode? State the difference between disk inode and in-core inode. **[5]**

- Q3)** a) Why is the principle of locality crucial to the use of virtual memory? Explain with example. **[4]**  
b) Give the details of U-area field. **[6]**

OR

- Q4)** a) Explain the race condition in assigning inodes. **[4]**  
b) Compare and contrast paging vs segmentation. **[6]**

- Q5)** a) What is ptrace system call? Explain Process tracing in detail. **[8]**  
b) Explain the term signal and elaborate the various circumstances under which signals of the various classes are used. **[8]**

OR

**P.T.O.**

- Q6)** a) Write short notes on: [8]  
i) Tunis System.  
ii) Shared memory.  
b) What is deadlock? Explain necessary conditions to occur the deadlock? [8]

- Q7)** a) What is make utility? Explain it with example. Consider your own makefile. [8]  
b) Explain with example Linux utilities - grep, egrep, fgrep and sort. [8]

OR

- Q8)** a) Write a short note on: [8]  
i) Mork Manager.  
ii) Shim Manager.  
b) Explain in detail how to make USB bootable with any open source tool/utility? [8]

- Q9)** a) Write a short note on: [12]  
i) Multiprocessor scheduling.  
ii) Real time scheduling.  
iii) Linux scheduling.  
b) Write short notes on: [6]  
Fail soft operation.

OR

- Q10)** a) Write a short note on: [12]  
i) Palm OS.  
ii) Google Android.  
iii) Windows Mobile.  
b) Write a short notes on: [6]  
Frame of reference.

