Total No. of Questions : 10]

SEAT No. :

P2411

[Total No. of Pages : 2

[4758]-579

T.E. (Computer Engineering)

OPERATING SYSTEMS DESIGN

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

Time : 2.30 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) What is kernel? What facility kernel should provide? **[4]**

OR

Q2) a) What are different multithreading models? **[6]**

b) What is TLB? why it is used? **[4]**

Q3) a) Explain following algorithms of file management. **[6]**

i) iget ii) iput

b) Give the details of Uarea field. **[4]**

OR

Q4) a) Why is the principle of locality crucial to the use of virtual memory? Explain with example. **[4]**

b) If the page address stream is {2, 3, 2, 1, 5, 2, 4, 5, 3, 2, 5, 2}, and frame size is 3. Identify the page faults occurred using FIFO, LRU. **[6]**

P.T.O.

Q5) a) What are the problems in multiprocessor systems? provide solutions to overcome them. **[8]**

b) Explain IPC mechanisms used in System V. **[8]**

OR

Q6) a) What is process tracing? Mention its advantages and disadvantages. **[8]**

b) Explain in short - pipe, semaphore, signal and mutex. **[8]**

Q7) a) What is AWK scripting? Write an AWK script to print squares of numbers from 1 to 10. **[8]**

b) What is secure boot? State the difference between BIOS and UEFI. **[8]**

OR

Q8) a) What is grep Utility? What are the grep variations? Explain with example. **[8]**

b) What is make utility? Explain it with example. Consider your own make file. **[8]**

Q9) a) Enlist different characteristics of real time system and explain. **[6]**

b) Explain static priority-driven preemptive approach for real time scheduling. **[6]**

c) Compare Hard, soft and Firm real time systems. **[6]**

OR

Q10)a) Explain data structures used in Linux scheduling. **[6]**

b) Write short note on frame of references for handheld system. **[6]**

c) Compare Windows NTFS and ReFS file systems. **[6]**

EEE