Total No. of Questions : 10]

SEAT No. :

P1754

[Total No. of Pages : 2

[5058]-394

T.E. (Computer Engineering)

OPERATING SYSTEM DESIGN

(2012 Course) (Semester - I) (END SEM.) (310242)

Time : 2½ Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Neat diagrams must be drawn wherever necessary.***
2) ***Figures to the right indicate full marks.***
3) ***Assume suitable data, if necessary.***

Q1) a) Explain data structures for demand paging. **[6]**

b) Explain fixed and dynamic memory allocation. **[4]**

OR

Q2) a) Explain system calls *exec()* and *brk()*. **[6]**

b) Explain necessary conditions for deadlock. **[4]**

Q3) a) Reference string: - 1 2 3 2 1 5 2 1 6 2 5 6 3 1 3 6 1 2 4 3.

Execute LRU and OPR on above string. Consider page frame of 3 pages.

Write page hit and page faults if any. **[6]**

b) Explain validity fault handler. **[4]**

OR

Q4) a) Explain in brief *growreg()* and *dupreg(.)*. **[6]**

b) Explain page stealer process. **[4]**

Q5) a) What is IPC? Explain process tracing using ptrace() system call. **[8]**

b) Explain problems in multiprocessor architecture and Master/Slave solution to tackle it. **[8]**

OR

Q6) a) What is socket? Explain all system calls with parameters for client server communication. **[8]**

b) Explain System V IPC mechanism: Shared Memory and Messages. **[8]**

P.T.O.

Q7) a) **[8]**

Table 1

Name	TOC	OSD	DCWSN	DMSA	FSCA
Sushil	65	69	74	76	45
Mahesh	55	66	73	65	56
Abhishek	45	74	55	65	60
Rohit	71	70	78	77	71

Write AWK code (refer Table 1):

i) To calculate AVERAGE of marks for each student.

ii) To calculate PERCENTAGE for each student.

b) Explain *grep* utility and its variations with example. **[8]**

OR

Q8) a) What is the purpose of make tool? Explain its advantages? Explain different options for make files. **[8]**

b) Explain sorting tool (*sort*) with example. **[4]**

c) State and Explain difference between *UEFI* and *BIOS*. **[4]**

Q9) a) Explain Android architecture in details. **[8]**

b) Explain security issues in handheld system. **[5]**

c) Explain Frame of reference for handheld systems. **[5]**

OR

Q10) Write a short note on following (*solve any three*) **[18]**

a) Windows scheduling.

b) Linux scheduling.

c) PalmOS.

d) Windows Mobile Phone OS.