Engg. - 47

T.E. (Computer) (Semester - I)
OPERATING SYSETMS DESIGN
(2012 Pattern) (In Sem.)

Time : 1 Hour]   *[Max. Marks : 30*

Instructions to the candidates:
1) *Answer Q1 or Q2, Q3 or Q4, Q5 or Q6.*
2) *Neat diagrams must be drawn wherever necessary.*
3) *Figures to the right indicate full marks.*
4) *Assume Suitable data if necessary.*

Unit - I

Q1) a) Explain with neat diagram UNIX system architecture.   **[6]**

b) Write short note on Master Boot Record (MBR).   **[4]**

OR

Q2) a) State the advantages and disadvantages of buffer cache.   **[6]**

b) What are system calls? Explain 1) fork( ) 2) open( ) 3) read( )   **[4]**

Unit - II

Q3) a) What is deadlock? What are the necessary conditions for deadlock to occur?   **[6]**

b) Differentiate process and thread.   **[4]**

OR

Q4) a) What is a process? Explain data structures for process.   **[4]**

b) With given matrices explain how banker algorithm helps to determine safe state.   **[6]**

Claim Matrix C	Allocation Matrix A	Resource Vector R
R1 R2 R3	R1 R2 R3	R1 R2 R3
P1 3 2 2	P1 1 0 0	9 3 6
P2 6 1 3	p2 6 1 2	
P3 3 1 4	p3 2 1 1	
P4 4 2 2	p4 0 0 2	

Available Vector V: R1-0 R2-1, R3-1

P.T.O.

Unit - III

Q5) a) Explain with diagram address translation in paging and segmentation system. **[8]**

    b) Define memory management in operating system. **[2]**

<p style="text-align:center;">OR</p>

Q6) a) What is the difference between internal and external fragmentation. **[8]**

    b) Explain thrashing **[2]**

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