Seat No.	

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T.E. (CSE) (Part - III) (Semester - VI) (Revised) (New) Examination, May - 2019
OPERATING SYSTEM - II
Sub. Code : 66859

Day and Date : Wednesday, 15 - 05 - 2019 **Total Marks : 100**

Time : 10.00 a.m. to 01.00 p.m.

Instructions:
1) **Question No.1 and Question No. 8 are compulsory. Solve any four questions from remaining questions.**
2) **Figures to the right indicate full marks.**
3) **Clearly mention your assumed data wherever necessary.**

Q1) a) List and explain major characteristics of the Unix file system. **[9]**

b) With a neat schematic of hash queue headers and free list updates, explain the following scenario for the buffer retrieval: The kernel finds the block on the hash queue, but its buffer is currently busy. **[9]**

Q2) a) List various fields of disk modes. Also explain algorithm "iget" for allocation of in-core inodes. **[8]**

b) What is super block? List and explain various fields of super block. **[8]**

Q3) a) Consider the following program.

```
#include<fcntl.h>
main()
{   int fdl, fd2;
    char bufl[512], buf2[512];
    fd1=open("/etc/passwd",O_RDONLY);
    fd2=open("/etc/passwd", O_RDONLY);
    read(fdl, bufl, sizeof(bufl));
    read(fd2, buf2, sizeof(buf2));
}
```

With the help of above program explain how a process can open a file more than once and read it via different file descriptors. **[8]**

b) What is the use of dup system call? Explain with a diagram how data structures are updated after the use of Dup. **[8]**

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Q4) a) State and explain the algorithm "bread" for reading a disk block. Also focus on advantages and disadvantages of the buffer cahce. **[8]**

b) Explain the use of chown and chmod system calls. Discuss issues in file system maintenance in brief. **[8]**

Q5) a) Which are major regions in virtual address space of a process? Explain in detail with a neat diagram. **[8]**

b) State and explain the algorithm "psig" for handling signals. **[8]**

Q6) a) Explain the scenario of swapping process out in detail. **[8]**

b) Explain the procedure of saving of the context with respect to interrupts and exceptions. **[8]**

Q7) a) What is the use of fork system call? Explain the sequence of operations that kernel executes for fork. **[8]**

b) What are streams? Explain the process of pushing a module on a stream. **[8]**

Q8) Write a short note (any three) **[18]**

a) u area and its fields.

b) Region table.

c) Functions of clock interrupt handler.

d) Demand paging.

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