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**P.E.S. College of Engineering, Mandya - 571 401**  
 (An Autonomous Institution affiliated to VTU, Belgaum)  
**Sixth Semester, B.E. - Information Science and Engineering**  
**Semester End Examination; June/July - 2015**  
**UNIX System and Network Programming**

Time: 3 hrs

Max. Marks: 100

*Note: Answer any FIVE full questions, selecting at least TWO full questions from each part.*

**PART - A**

1. a. What are the major differences between ANSI C and K & RC? Explain with examples. 10
- b. What do you understand by the term feature test macros? List all five features test macros with meanings. 10
2. a. Explain the different types of files in UNIX. 10
- b. Explain UNIX kernel support for files. 10
3. a. Explain the following APIs with prototypes : 10
- i) open      ii) lseek      iii) stat      iv) read
- b. What is the importance of locking files? Explain mandatory and advisory locks. List out the drawbacks of advisory locks. 10
4. a. With a neat diagram explain the various ways in which a process can terminate. 10
- b. Explain the memory layout of a C – Program with a diagram. 10

**PART - B**

5. a. List and explain the various exec functions with prototypes. 10
- b. What is a Race Condition? Write a program to generate and avoid race condition. 10
6. a. What is a Signal? Mention the different sources of signals. Discuss any five POSIX defined signals. 10
- b. What is job control? What are the three forms of support from the OS required for job control? 10
7. a. What are pipes? What are its limitations? Write a program to send data from parent to the child over a pipe. 10
- b. What is FIFO? Explain how FIFO can be used to implement client server communication model with an example. 10
8. a. Briefly discuss the APIs for Message Queues. 10
- b. Briefly discuss the APIs for shared memory. 10

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