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P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belgaum)

Sixth Semester, B.E. - Computer Science and Engineering

Semester End Examination; June - 2016

UNIX System Programming

Time: 3 hrs

Max. Marks: 100

Note: Answer FIVE full questions, selecting ONE full question from each unit.

UNIT - I

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| 1 a. | List and explain the differences between ANCI C and K & R C. | 8 |
| | b. Briefly explain the POSIX standards. | 4 |
| | c. Explain the common characteristics of API. Describe the error status codes. | 8 |
| 2 a. | Explain the different types of files in UNIX environment. | 6 |
| | b. Describe the UNIX and POSIX file attributes. | 8 |
| | c. Define inode. Differentiate between hard link and soft link. | 6 |

UNIT - II

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| 3 a. | Write and explain the syntax of open() and umask() APIs. | 10 |
| | b. Write C/C++ programs that accept a directory file name as command line argument. Display inode number, file name, file type of each directory entry and also display the total number of directory entries. | 10 |
| 4 a. | Explain how fcntl() API used for file and record locking. | 10 |
| | b. Write a C /C++ program to emulate the UNIX <i>ln</i> command. | 4 |
| | c. Write the hierarchy structure of the file classes. | 6 |

UNIT - III

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| 5 a. | With neat diagram describe how a C program is started and terminated? | 10 |
| | b. Elaborate the UNIX Kernel support for a process. | 10 |
| 6 a. | Illustrate longjmp() and setjmp() functions with a programming example. | 8 |
| | b. With a neat diagram explain how the memory is allocated for C program. | 4 |
| | c. Write and explain the syntax of six different exec() functions. | 8 |

UNIT - IV

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| 7 a. | Define job control. Summarize the job control features, with the help of a figure. | 10 |
| | b. Explain BSD terminal logins. | 10 |
| 8 a. | Define signal. Explain how UNIX Kernel support signals? | 10 |
| | b. Define daemon process. Explain daemon characteristics and basic coding rules. | 10 |

UNIT - V

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| 9 a. | Define FIFO. Discuss with an example, the client-server communications using FIFO's. | 10 |
| | b. List and explain the API used for messages. | 10 |
| 10 a. | Define shared memory. Explain its significance in inter process communication in detail. | 10 |
| | b. List and explain the client-server properties. | 10 |

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