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P.E.S. College of Engineering, Mandya - 571 401
(An Autonomous Institution affiliated to VTU, Belgaum)
Third Semester, B. E. – Computer Science and Engineering
Semester End Examination; Dec. - 2014
Shell and Advanced C programming

Time: 3 hrs

Max. Marks: 100

Note: i) Answer **FIVE** full questions, selecting **ONE** full question from each Unit.

ii) Assume suitable missing data if any

1. a. What is a pointer? Explain the pointer declaration, initialization and accessing a variable using pointer. 10
- b. What are the advantages and disadvantages of pointer? 4
- c. Differentiate between structure and union 6
2. a. Explain with an example; 8
 - i) malloc() ii) calloc() iii) realloc() iv) free()
- b. Distinguish between call by value and call by Reference with example. 6
- c. Write a c program to find the largest of three numbers using pointers. 6
3. a. With a neat diagram, explain the relationship between the kernel and shell of Unix. 10
- b. Explain the following commands with examples: 10
 - i) echo ii) script iii) bc iv) tty v) man
4. a. Write a parent child relationship in Unix OS? Explain with an example absolute path name and relative path name. 10
- b. Explain the following commands with example: 10
 - i) ls ii) mv iii) we iv) cmp v) comm
5. a. What is V_i? Explain the three modes of the editor. 10
- b. Differentiate between hard link and symbolic link. 6
- c. Explain the basic file attributes. 4
6. a. Illustrate the following commands with example: 10
 - i) chmod ii) chown iii) umask
- b. What is an inode? What are the contents of an inode? Explain how kernel accesses a file. 10
7. a. What is a process? Explain the mechanism of process creation. 8
- b. What are standard input, standard output and standard error? Explain. 6

- c. Illustrate the following command with example; 6
 - i) pipes ii) tee
- 8.a Explain the following commands with its options; 10
 - i) ps ii) kill iii) sort iv) tail v) tr
- b. Explain with an example; 10
 - i) Job control ii) cron iii) time iv) at and batch.
- 9 a. Explain with an example basic regular expression (BRC) 6
- b. Explain 'exec' statement and 'expr' statements 8
- c. In detail, explain conditional parameter substitution. 6
- 10 a. Explain grep commands with all options. 6
- b. Explain with an example: 8
 - i) Context addressing
 - ii) Stream editor
- c. Illustrate how while loop is used in shell programming with a simple example 6

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