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P.E.S. College of Engineering, Mandya - 571 401
 (An Autonomous Institution affiliated to VTU, Belgaum)
Second Semester, B.E. - Semester End Examination; June - 2016
Computer Concepts and 'C' Programming
 (Common to All Branches)

Time: 3 hrs

Max. Marks: 100

*Note: i) Answer any FIVE full questions Selecting ONE full questions from each unit.
ii) Missing data if any may be suitably assumed if any.*

UNIT - I

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| 1 a. | What is a Computer? With block diagram explain the functional units of computer. | 15 |
| b. | What is ternary operator? Explain with the help of an example program. | 5 |
| 2 a. | Define type conversion. Explain different types of type conversion. | 5 |
| b. | Differentiate between primary memory and secondary memory. | 5 |
| c. | What is an operating system? What are its functions? Give example. | 5 |
| d. | Write a flow chart to find roots of quadratic equation. | 5 |

UNIT - II

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| 3 a. | What is the difference between 'while' and do-while' loop? Explain with the help of an example. | 6 |
| b. | Explain the use of break and continue statements in loop. | 4 |
| c. | Write a C program to compute sum of Fibonacci numbers upto 'n' terms. | 5 |
| d. | How do you classify IO functions in C language? Briefly explain. | 5 |
| 4 a. | With general syntax and relevant example. Explain 'for loop' in C language. | 5 |
| b. | With example, explain 'SWITCH' statement in C language. | 5 |
| c. | Write a C program to find whether the given year in leap year or not. | 5 |
| d. | Write a C program to find sum of individual digits in a given 3 digit number (Hint : given number is 127 and its individual digit sum = 10). | 5 |

UNIT - III

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| 5 a. | What do you mean by searching? Explain the types of searching techniques. | 6 |
| b. | Write a C program to count the number of vowels in a given input string. | 5 |
| c. | Write a C program to sum all the elements present in a 3 x 3 matrix. | 5 |
| d. | Explain how do you declare and initialize one dimensional and two dimensional arrays. | 4 |
| 6 a. | Writ a C program to sort 'n' integer numbers using bubble sort techniques. | 5 |

- b. Write a C program to accept 'N' array elements in sorted order and search for a given number using binary search technique. 5
- c. Explain any five string handling functions. 10

UNIT - IV

- 7 a. What is a user defined function? Why it is needed? Briefly explain its working concept. 5
- b. What are the different ways of passing parameters to the functions? Explain. 5
- c. Write a C program to check whether the string is palindrome or not. Write and use the function to perform the following : 10
- i) To find length of the string ii) To check string in palindrome or not.
- 8 a. What is a pointer variable? Explain. Write a program to find the length of a given character string using pointers. 8
- b. How to write a C program using modular programming concept? Illustrate with example program. 6
- c. How do you declare and initialize pointer? Explain using suitable example. 6

UNIT - V

- 9 a. How does structure differ from an array? Explain with example. 5
- b. With suitable example explain how files are handled in C using open and close. 5
- c. Write a C program to maintain 'N' students details with 6 fields (Reg-No. Name, M1, M2, M3 Result) Each field in of suitable data type. Calculate total marks and print result accordingly for given student reg-No. 10
- 10 a. Distinguish between (i) Structure and union (ii) Structure and array 8
- (iii) `fopen()` and `fclose()` iv) `fscanf()` and `fprintf()`.
- b. Discuss how structures are declared, initialized and its members are accessed in C. 6
- c. Write a C program to open a text file read the data, perform operation on data and display result assume suitably. 6

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