

MCA (Revised)

Term-End Examination

June, 2012

MCS-011 : PROBLEM SOLVING AND
PROGRAMMING

Time : 3 hours

Maximum Marks : 100

(Weightage 75%)

Note : Question number 1 is compulsory.

Attempt **any three** questions from the rest.

1. (a) It is said that 'C' is a middle level language. 10
Mention those features of 'C' which enables this description. Give a short note on the 'compilation' process in 'C'.
- (b) Develop a flowchart and then write a 10
program in 'C' to sort strings passed to the program through command line arguments. Also display the sorted strings.
- (c) Define 'pointers' in C. How is a Pointer 10
variable declared ? Give examples and explain. Enumerate the utility of Pointer variables, with an example.

- (d) Differentiate between : 2½x2=5
- (i) Function and sub routine
 - (ii) Structure and Union with examples of each.
- (e) Give the precedence chart for the operator in 'C'. 5
2. (a) Differentiate between an execution error and a syntax error. Give examples of execution and syntax errors. 4
- (b) Write and explain the action of 'WHILE' statement. Develop a program to compute the average of every 3rd integer lying between 1 and 100. 8
- (c) Write a program in 'C' to copy the contents of one file to another file. 8
3. (a) Write a program in 'C' to compute the series : 5
- $(x) + (x+n) + (x+n^2) + (x+n^3) + \dots$
- for a total of m terms.
- Where m, n and x are to be accepted by the user.
- (b) Differentiate between goto statement, break and continue. 4
- (c) What is an assignment operator ? Give example of its usage. 3

- (d) What is a pointer to an array? Differentiate it from an array of pointers. Write a program using pointer to array to calculate the sum of n given numbers. 8
4. (a) Implement Binary search in 'C' language. 8
- (b) With every use of a memory allocation function, what function must be used to release allocated memory which is no longer used? Give syntax also. 4
- (c) Write a recursive function in 'C' to count the number of nodes in a singly linked list. 8
5. (a) How are arrays processed in 'C'? Illustrate with the help of 2-D arrays as examples. 6
- (b) Give syntax of gets () and getch ()? Also give examples of usage of scanf () and printf (). 6
- (c) A program in 'C' language contains the following declaration : 8
- Static int x[8] = {1,2,3,4,5,6,7,8};
- What is the meaning of :
- (i) x ?
- (ii) (x+2) ?
- (iii) *x?
- (iv) *(x+2) ? Explain the results.
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