

## ***B. Tech. Degree I & II Semester Supplementary Examination in Marine Engineering May 2016***

### **MRE 109 COMPUTER FUNDAMENTALS**

Time: 3 Hours

Maximum Marks: 100

(5×20=100)

- I. (a) Draw the organization of a computer and explain each functional unit. (10)  
 (b) How can we organize order memory units in terms of speed and storage capacity? (5)  
 (c) What is a compiler? Is it necessary for operating a computer? (5)

**OR**

- II. (a) What is a computer network? What are its advantages and disadvantages over a standalone computer? How can you classify the networks? (10)  
 (b) Define Operating System (OS). What are the different types of Operating System? Explain various functions of OS. (10)

- III. (a) Define the following with examples. (10)  
 (i) Data types (ii) Identifier (iii) Keywords (iv) Arithmetic operators  
 (v) Variable.  
 (b) Write a program to display the multiplication table of a given number upto 15. (10)

**OR**

- IV. Differentiate the following with examples. (20)  
 (i) 'while' and 'do-while'  
 (ii) 'if-else' and 'switch case'  
 (iii) 'break' and 'continue'  
 (iv) 'return' and 'goto'

[Hint: you can draw flow charts of the control constructs to show their execution sequence].

- V. What is the relevance of functions in programming? Write a simple program to differentiate between function definition, declaration and call. (20)

**OR**

- VI. What is recursion? What are the conditions to make a function as recursive? Write a 'C' program to reverse a string using recursive function. Show that the required conditions are met for this program. (20)

- VII. (a) How are arrays different from other data types? Differentiate static array from dynamic array. Give the C statements for both. (10)  
 (b) Write a 'C' program for selection sorting. Read the input values. Also explain the code with an example. (10)

**OR****(P.T.O.)**

- VIII. (a) What are pointers? Differentiate the 'array of pointers' and 'pointer to an array' concepts with 'C' implementation for them. Give an example for each. (10)
- (b) Differentiate linear search from binary search with an example. Which one is faster? Justify your answer. Write a 'C' program for linear search. (10)
- IX. (a) What is DBMS? What are the advantages of DBMS over flat files? Explain different types of DBMS. (15)
- (b) What is a query? Give an example. (5)
- OR**
- X. (a) What are the main object oriented concepts? (write any five concepts). (10)
- (b) Write a C++ program to store personal details (Name, age, qualification, address etc.) of 50 people. Search for a given name and display that person's details, if present. (10)