

**HS 2<sup>nd</sup> Year Terminal Examination, 2021**  
**Sub: Computer Science and Applications**  
**Full Marks: 50**  
**Time : 2 Hours**

**1. Answer the following questions: 1 X 5 = 5**

- a) Give the full form of RDBMS.
- b) Write one difference between **public class** and **protected class**.
- c) How is a pointer defined in C++
- d) What is a data structure?
- e) Write the syntax for declaring an array in C++

**2. Answer the following in brief : 2 X 5 = 10**

- a) How is computer memory allotted for a two-dimensional array?
- b) Calculate the array length for the array having the following elements:  
[-7, -6, -5, ..., 0, 1, 2, ..., 15]
- c) Differentiate between DDL and DML
- d) Explain how inheritance promotes code 'reusability'
- e) What do you mean by class and object?

**3. Answer the following questions: 3 X 5 = 15**

- a) Write the SQL commands to create a table (EMPLOYEE) with the following attributes.

**Emp\_ID integer**

**Name Char (40)**

**Address Varchar(50)**

**Dept Char(20)**

Set Emp\_ID as primary key of the table.

- b) What is a destructor? How it is declared?

- c) Write the advantages of DBMS
- d) What is an array? How do you insert elements in an array?
- e) Define primary key. Explain with an example.

**4. Answer the following questions (Any Four)**

**5 X 4 = 20**

- a) State and prove DeMorgan's second theorem
- b) Write a program in C++ to implement a constructor
- c) Verify the following using truth tables:  $X(Y+Z)=XY+XZ$
- d) Write a program in C++ to implement binary search in an array
- e) Write the algorithm for the evaluation of POSTFIX expression
- f) What is inheritance? Explain the different types of inheritance

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