Answer any 5 questions from 1 to 6. Each carries 1 score. $(5 \times 1 = 5)$

1. Choose the indirection or value at operator used in C++ from the options given below.

   (a) ++ (b) *

   (c) & (d) +

2. Which of the following is used for creating controls in a form in HTML ?

   (a) <TABLE> (b) <OL>

   (c) <INPUT> (d) <FRAME>

3. Name the type of web hosting in which client leases the entire webserver and it's resources.

4. The smallest unit of stored data in DBMS is called _____.

5. The full form of DML is _____.

6. Legal right given to the creators for an original work is

   (a) Geographical indication (b) Trademark

   (c) Copyright (d) Industrial design

Answer any 9 questions from 7 to 18. Each carries 2 scores. $(9 \times 2 = 18)$

7. Write the syntax for the following :

   (a) Declaration of pointer variable in C++.

   (b) Dynamic memory allocation in C++.

8. Define the term self-referential structure. Give example.

9. Write any two advantages of using OOP.

10. Name any four operations on data structures.

11. What do you mean by stack overflow and stack underflow ?

12. Define the following terms :

    (a) HTTPS

    (b) Software ports

13. Name any four attributes of <TD> tag.

14. Write the HTML code for the following :

    (a) To create an email hyperlink to

    dhsekerala@gmail.com

    (b) To insert a video file video 1.mp4 in the webpage

15. Write the names of the following :

    (a) Operator used for adding two strings in JavaScript.

    (b) Function used in JavaScript to convert string type data containing numbers to number data type.

16. Define the term data independence. What are the different levels of data independence ?

17. Write any two advantages of parallel computing.

18. Write short note on cloud computing.

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Answer any 9 questions from 19 to 29. Each carries 3 scores. **(9 × 3 = 27)**

19. Compare Arrays and Structures.

20. Define the following OOP terms :

    (a) Data Abstraction

    (b) Inheritance

    (c) Function overloading

21. Write short note on :

    (a) Linked list

    (b) Circular Queue

    (c) Stack

22. Differentiate client side scripting and server side scripting.

23. Write the HTML code to display the following list :

    1. Input devices
       - Keyboard
       - Mouse
       - Scanner
    2. Output devices
       - Monitor
       - Printer

24. Name the following :

    (a) Built-in function used in JavaScript to get the character at a particular position in a string.

    (b) Built-in function in JavaScript used to check whether a value is number or not.

    (c) Data type used in JavaScript for representing true or false values.

25. Consider the following JavaScript code to find the sum of numbers upto a given limit. Fill the blanks.

```
_____ sumLimit( )
{
_____ sum = 0, i, limit;
limit =
_____ (document. frmSum.txtLimit. _____);
_____ (i = 1; i <= limit; i++)
sum += i;
document.frmSum.txtSum. _____ = sum;
}
```

26. Briefly explain the following terms :

(a) Free hosting

(b) CMS

(c) Responsive web design

27. Briefly explain any three aggregate or column functions in SQL.

28. Write SQL queries for the following :

(a) To create a table with the following fields

Employee name

Designation

Basic pay

DA

Gross pay

(b) To display all employees whose Basic pay is more than 50,000.

(c) To update the DA of employees whose designation is manager to 20% of Basic pay.

29. Explain briefly about any three core data types in PHP.

Answer any 2 questions from 30 to 32. Each carries 5 scores. **(2 × 5 = 10)**

30. (a) Write the basic structure of an HTML document. **(3)**

(b) Write the HTML code for the following :

(i) To display a scrolling text "welcome to my webpage" with 5 second delay in scrolling. **(1)**

(ii) To display the text H_2SO_4. **(1)**

31. (a) Define the following terms in RDBMS :

(i) Primary Key **(1)**

(ii) Attributes **(1)**

(b) Briefly explain any three operations in relational algebra. **(3)**

32. (a) Define E-Governance. **(1)**

(b) Write any four benefits of E-Governance. **(4)**