SECOND YEAR HIGHER SECONDARY
SECOND TERMINAL EXAMINATION
DECEMBER-2022
Part-III
COMPUTER SCIENCE

Maximum: 60 Scores

Answer any 5 questions from 1 to 6. Each carries 1 score. (5 × 1 = 5)

1. Structure within a structure is termed as _____

A: Nested structure

2. Which tag is used to insert an image into a webpage?

A: <IMG>

3. Which HTML tag is used to create an ordered list?

A: <OL>

4. FRAME is the attribute of _____ Tag.

A: <TABLE>

5. Give the function in JavaScript that converts a string type data into number type.

A: Number()

6. Expand the term DBMS.

A: Database Management System

Answer any 9 questions from 7 to 17. Each carries 2 scores. (9×2=18)

7. State any two differences between static and dynamic memory allocation.

A: Any two points from

Static Memory Allocation	Dynamic Memory Allocation
In this case, variables get allocated permanently	In this case, variables get allocated while program unit is active
Allocation is done before program execution	Allocation is done during program execution
Less efficient	More efficient
There is no memory reusability	There is memory reusability
Memory cannot be freed	Memory can be freed when not required
No special operators used	*new* operator for memory allocation and *delete* operator for memory release
E.g. Array	E.g. Linked list

8. Write an algorithm to add a new element in a stack.

A: A variable TOS is used to denote the Top of the Stack. Initially it is set as -1.

Data items are stored in a variable VAL.

```
Start
      1: If (TOS < N - 1) Then
      2:    TOS = TOS + 1
      3:    STACK [TOS] = VAL
      4: Else
      5:    Print "Stack Overflow"
      6: End of If
Stop
```

9.

Match the following:

A	B
(1) Stack	(a) Front
(2) Queue	(b) Push
(3) Array	(c) Start
(4) Linked list	(d) Subscript

A:

A	B
(1) Stack	(b) Push
(2) Queue	(a) Front
(3) Array	(d) Subscript
(4) Linked list	(c) Start

10. Classify the following scripting languages into client side and server side:
ASP, PHP, JavaScript, VBScript
Client side script – JavaScript, VBScript
Server side script – ASP, PHP

11. Categorize the following tags in HTML appropriately.

 <H1><IMG> <TABLE>

A:
&<IMG>are Empty tags. <H1>&<TABLE> are container tags

 is used for line break. <H1> is used for first heading.

<IMG> is used to insert an image.

<TABLE> is used to create a table

12. Write the names and their use of any two built-in functions in JavaScript.

A:

alert( ) - It is used to display a message on the screen with a new window.

toUpperCase ( ) - It is used to convert the characters to uppercase letter.

13. Explain any two types of Web Hosting.

A: Any two from

Shared Hosting	**Dedicated Hosting**	**VPS**
Different sites on a single server	Single site on the server	Server is partitioned virtually
Cheap	Very expensive	Moderate expense
Response may be slow sometimes	Fast response all the time	Good response
Suitable for small websites	Suitable for large organization's website	Suitable for small and large websites.

14. What is Responsive web design?

A: Responsive web designing is the custom of building a website suitable to work on every device and every screen size. A

responsive designed web site will work on mobile phone, desktop, tablet or television without any issues.

15. What is CMS? Write any 2 examples of CMS.

A: CMS is a web based software system which is capable of creating, administering and publishing websites. CMS provides an easy way to design and manage websites. E.g. Joomla, WordPress, Drupal.

16. Explain any 2 levels of data abstraction in DBMS.

A:

1. **Physical level**

This is the lowest level of data abstraction. It describes how data is actually stored in database. You can get the complex data structure details at this level.

E.g. Store all relations as unsorted files of records.

2. **Logical level (Conceptual level)**

This is the middle level of data abstraction. It describes what data is stored in database and what relationships exist among the data.

E.g. The record contains AdmNo, Name and Mark as the fields. Mark is of type integer etc.

17. Name any 4 users of Database.

A:

Database Administrator (DBA)

Application Programmers

Sophisticated Users

Naïve Users

Answer any 9 questions from 18 to 28. Each carries 3 scores. (9 × 3 = 27)

18. Distinguish between array and structure.

A: Any 3 points from

Arrays	Structures
It is a derived data type.	It is a user-defined data type
Collection of same type of data.	Collection of different types of data.
Uses subscripts for referencing elements	Uses dot operator (.) for referencing elements
Array within array is multidimensional array	Structure within structure is nested structure
Array of structure is possible	Structure can contain array as element

19. What is MEMORY LEAK? How it can be avoided?

A: Memory leak occurs when programmers allocate memory by using the new operator and forgets to de-allocate the memory by using delete operator. To avoid memory leak, memory should always be freed using delete operator when the memory is no longer needed.

20. Write any 3 differences of Procedure Oriented Programming and Object-Orient Programming.

A: Any three points

Procedure oriented	Object oriented
It is process-oriented.	It is object-oriented.
Follows Top down approach.	Follows Bottom up approach.

Each function contains different data.	Each object controls its data.
Adding new data and function is not easy.	Adding new data and functions is easy.
Overloading is not possible.	Overloading is possible.
It is less secure.	It is more secure.
No concept of inheritance.	Inheritance is allowed.
There is no access specifier	They have access specifiers such as Private, Public, Protected etc.

21. Consider the following cases:

(a) Paper cups are arranged on a dining table one above the other.

(b) Many people are waiting in a row to take tickets for a cinema.

Identify and compare the data structure that you know in connection with the above mentioned contexts.

A: (a) Stack

(b) Queue

22. Write a short note on Heading Tags.

A: H1, H2, H3, H4, H5 and H6 are the heading tags used in HTML.

H1 is used for first heading

H2 is used for second heading.

H3 is used for third heading.
H4, H5 and H6 are used for forth, fifth and sixth heading.

23. Explain the different types of lists in HTML.

Three types of lists are ordered list, unordered list and definition list.

Ordered List :- Inserted using <OL> tag. Type can be 1, i, I, A, a etc. <LI> tags are used for list items

Unordered List:- Inserted using <UL> tag. Type can be circle, square and disc. <LI> tags are used for list items

Definiton List:- Inserted using <DL> tag. <DT> tag is used for definition term and <DD> tag is used for definition description.

24. Write HTML code to display the following table in a webpage:

Sl. No.	**Name**	**Marks**
1	Kripa	80
2	Adithya n	75
3	Abhiram	79
4	Aparna	81

A:

<TABLE Border = "3">

<TR Align=“center”><TH>Sl.No.</TH><TH>Name</TH>
<TH>Marks</TH></TR>
<TR Align= “center”><TD>1</TD><TD>Kripa</TD>
<TD>80</TD></TR>
<TR Align= “center”><TD>2</TD><TD>Adithyan</TD>
<TD>75</TD></TR>
<TR Align= “center”><TD>3</TD><TD>Abhiram</TD>
<TD>79</TD></TR>
<TR Align= “center”><TD>4</TD><TD>Aparna</TD>
<TD>81</TD></TR>
</TABLE>

25. Name and explain any 3 values of Type attribute of <INPUT> Tag.

A: Type attribute of INPUT can be text, password, reset, submit etc.

Text is used to get a textbox in a form.

Password is used to get a password box in a form.

Submit is used to get a submit button in a form.

26. Explain any 3 ways in which a JavaScript can be inserted in a web page.

A: 1. Inside <BODY>

Script can be added inside the <BODY> tag. Scripts are always written within the container tag <SCRIPT>

2. Inside <HEAD>

Script can be written inside the HEAD section. Commonly function definition of scripts are written inside the HEAD section.

3. External JavaScript file

Script can be written as an external file. The extension .js is used as the extension for the script file. The src attribute of the <SCRIPT> tag is set as the external JavaScript file name.

27. Explain any 3 Built-in functions available in JavaScript.

a. alert( )

It is used to display a message on the screen with a new window. It is commonly used at the time of validation

b. toUpperCase ( )

It is used to convert the characters to uppercase letter.

E.g. var x = "JavaScript"

var y = x.toUpperCase( );

d. toLowerCase ( )

It is used to convert the characters to lowercase letter.

28. State whether the following statements are true or false:

(1) JavaScript is a server-side scripting language,

(2) JavaScript is a case sensitive scripting language.

(3) The keyword used to declare a variable in JavaScript is 'var'.

A:

1. False
2. True
3. True

Answer any 2 questions from 29 to 31. Each carries 5 scores. (2 × 5 = 10)

29. Explain various attributes of BODY tag.

A: The attributes of BODY tag are the following

Background:- To set an image as page background

Bgcolor:- To set background colour

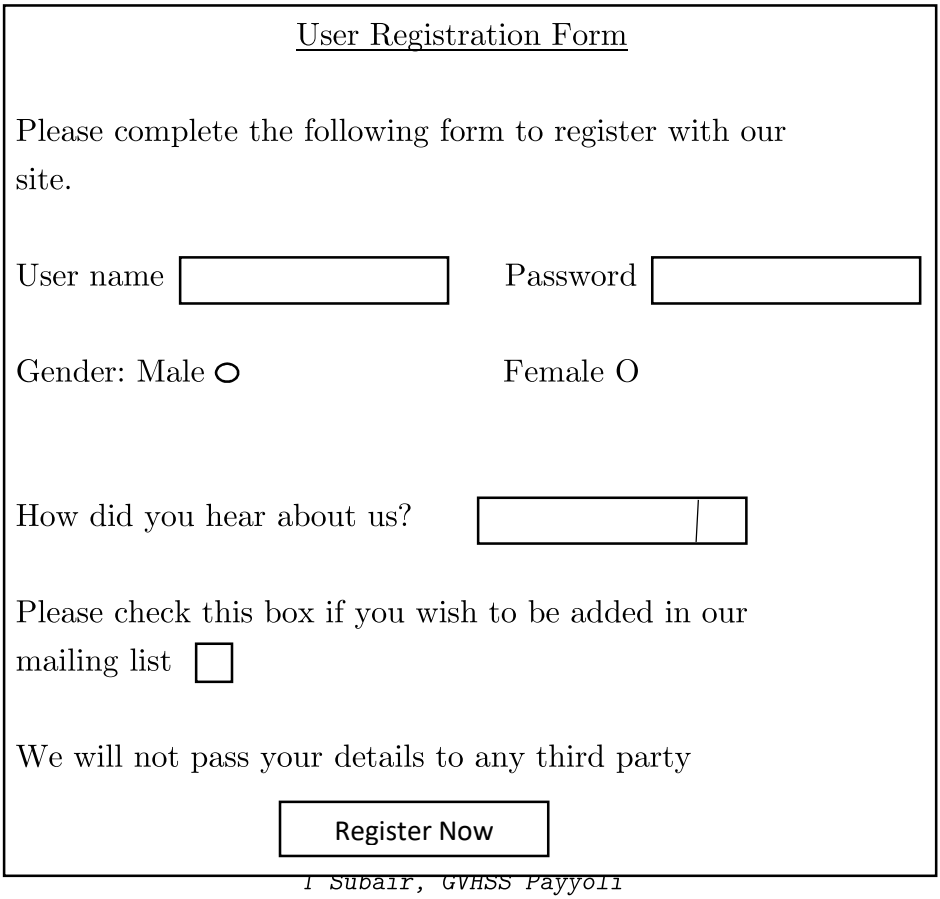
Text:- To set default colour for text in the webpage

Link:- To set colour of hyperlink not visited

Alink:- To set colour of hyperlink

Vlink:- To set colour of visited hyperlink

30. Write an HTML code to display a User Registration Form as shown below:



A:

```
<HTML>
<HEAD>
<TITLE>User Registration</TITLE></HEAD>
<BODY>
<H3><U>User Registration Form</H3></U>
Please complete the following form to register with our
site. <BR>
User name <INPUT Type= "Text">    Password
<INPUT Type= "Password">
<BR><BR>
Gender: Male <INPUT Type= "Radio">  
Female<INPUT Type= "Radio">
<BR><BR>
How did you hear about us?
<Select><Option>Friends</Option>
<Option>Newspaper</Option></Select>
<BR><BR>
Please check this box if you wish to be added in our mailing list
<INPUT Type= "Checkbox">
<BR><BR>
We will not pass your details to any third party
<BR><BR>
<INPUT Type= "Submit" Value= "Register Now">
</BODY>
</HTML>
```

31. Explain the following terms related to RDBMS

(1) Entity (2) Relation (3) Tuple and Attribute
(4) Degree and Cardinality (5) Domain
A:

1. **Entity**

An entity is a person or a thing in the real world that is distinguishable from others. E.g. student, bank

2. **Relation**

Relation is a collection of data organized as rows and columns. It is also called Table.

3. **Tuple & Attribute**

The rows in a relation are known as tuples.

The columns in a relation are known as attributes.

4. **Degree & Cardinality**

The number of attributes in a relation is the degree of the relation. The number of tuples (rows) in a relation is the cardinality of the relation.

5. **Domain**

Domain is the pool of possible values in an attribute. All the values in an attribute are taken from the domain.

E.g. For the age attribute the domain can be any number between 0 and 140.