

Model Examination

March 2022

Computer Science

Time: 2 Hours

Score: 60

PART-I

A. Answer any five questions from 1 to 9. Each carries 1 score.

1. Keyword used to create structure is
A: struct
2. Write the Syntax to declare a pointer variable.
A: data_type * variable ;
3. Object of the class is called
A: instance
4. Define 'Data Structure'.
A: A data structure is a specialized format for organizing, processing, retrieving and storing data.
5. The tag used to create a hyperlink is ...
A: <A> tag
6. Write an attribute of tag.
A: Type is an attribute of OL tag
7. Keyword used to create variable in Java Script is ...
A: var
8. Which operator is used to add two strings in Java Script?
A: + operator
9. In PHP, Variable name starts with sign.
A: \$

B. Answer all questions from 10 to 13 each carries 1 score.

10. Write the full form of CMS.
A: Content Management System.
11. A Candidate key that is not the primary key is called

A: Alternate key

12. Data about data is called

A: meta-data

13. Write the name of the function used in PHP to display both data type and value of variables.

A: var_dump()

PART II

A. Answer any two questions from 14 to 17 each carries 2 scores.

14. What is polymorphism? What are the two types of polymorphism in OOP ?

A: Polymorphism is the ability to assign different meanings in different contexts, to an entity such as object, function or operator. Two types of polymorphism are compile time polymorphism and run time polymorphism.

15. What is "queue" in data structure ?

A: Queue is a linear data structure working on the principle of FIFO (First-In-First-Out).

16. Write the name of Java Script functions to perform the following:

a. To display a message "Computer Science".

A: alert("Computer Science");

b. To print the length of the string "Hello".

A: alert("Hello".length);

17. Write any two advantages of Parallel Computing.

A: Problem is broken into discrete parts that that can be solved concurrently. More than one instruction is executed on multiple processors at a time.

B. Answer any two questions from 18 to 20 each carries 2 scores.

18. What is dynamic array? Write the syntax.

A: An array created during run time by using the operator *new* is known as dynamic array. Its syntax is

Pointer = new data_type [size] ;

19. What is Programming Paradigm? Write the name of any two programming paradigms.

A: A programming paradigm is the way in which a program is organized. Two programming paradigms are procedure-oriented paradigm and object-oriented paradigm.

20. Define Linked List. Write any two operations on Linked List.

A: Linked list is a dynamic data structure containing a collection of nodes, where each node consists of a data and a link to the next node. Traversing, insertion etc. are operations on linked list.

PART III

A. Answer any three questions from 21 to 24. Each carries 3 scores.

21. What is Stack? Write algorithm to perform PUSH operation on stack.

A: Stack is a linear data structure working on the principle of LIFO (Last-In-First-Out).

Algorithm for PUSH operation is

Start

If (TOS < N - 1) Then

TOS = TOS + 1

STACK [TOS] = VAL

Else

Print "Stack Overflow"

End of If

Stop

22. Differentiate static and dynamic webpage.

A:

Static web page	Dynamic web page
Contents and layout is fixed	Contents and layout may change during run time
Never use databases	Database is used
Server side application does not require	Runs Server side application
Easy to develop	Programming skills is needed

23. Briefly explain the different types of Webhosting.

A:

Shared Hosting	Dedicated Hosting	VPS
Different sites on 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.

24. Write the name of different cloud service models.

A: Software as a Service, Platform as a Service, Infrastructure as a Service (SaaS, PaaS, IaaS)

B. Answer any two questions from 25 to 27 each carries 3 scores.

25. What are the different ways to add JavaScript to a Web page?

A:

- Inside <BODY>
- Inside <HEAD>
- External JavaScript 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.

26. Write any three aggregate functions in SQL.

A: SUM (), AVG (), MIN (), MAX () and COUNT () are aggregate functions.

27. Write any three advantages of e-learning.

- A:
- Offers variety of courses from different institutions in the world
 - Cost is very less
 - Time and place is not an issue in e-Learning
 - No need to travel which saves time

PART - IV

A. Answer any three questions from 28 to 31 each carries 4 scores.

28. What are the two methods of memory allocation in C++? Write operators with its use.

A: Static memory allocation and dynamic memory allocation are the two methods of memory allocations in C++. *new* operator is used for dynamic memory allocation. *delete* operator is used for releasing the allocated memory.

29. Define column constraints in SQL. Explain any three column constraints.

A: Constraints are rules enforced on the column of a table. It ensures accuracy, reliability and integrity of data.

- a. NOT NULL :- This specifies that a column can never have NULL values.
- b. AUTO_INCREMENT :- MySQL will assign serial numbers automatically for a column with this constraint.
- c. UNIQUE: - If a column is set with this constraint, then no two rows will have the same value.

30. Briefly explain any four data types in PHP.

The core data types in PHP are

- a) Integers: - This include whole numbers. E.g. -23, 89 etc.
- b) Float/Double: - This include fractional numbers. E.g. 2.5
- c) String: - This holds words or sentences. E.g. "Computer"
- d) Boolean: - This can hold two values, true or false.

31. Briefly explain any four cybercrimes against individuals.

1. Identity theft: - This occurs when someone uses another person's identifying information like name, credit card number, account number etc. without their permission.

2. Harassment: - Posting humiliating comments focusing on gender, race, religion and nationality at specific individuals in social media, e-mail etc. is harassment.

3. Impersonation: - Impersonation is an act of pretending to be another person for the purpose of harming him/her.

4. Violation of privacy: - Posting or sharing images and videos in social media without their permission is violation of privacy

B. Answer any one question from 32 to 33. Each carries 4 scores.

32.

- a. Write any two client side scripting languages.

A: JavaScript, VB Script

- b. Write any two attributes of <FRAMESET> tag.

A: Cols , Rows

33. Write any four applications of Computational Intelligence.

A: 1. Biometrics

2. Robotics

3. Computer Vision

4. Natural Language Processing

5. Automatic Speech Recognition. Etc.

PART - V

Answer any two questions from 34 to 36. Each carries 6 scores.

34.

a. Explain four text formatting tags with its use.

A: for bold text, <I> for italicise, <U> for underline, <S> for strike through.

b. Explain any two attributes of <BODY> tag.

A: Background - To add a picture, Bgcolor - To change background color.

c. Write HTML code to display the text H₂SO₄

A: H₂SO₄

35.

(a) Write HTML coder to display the following list :

```
INPUT DEVICES
1. MOUSE
2. KEYBOARD
3. SCANNER
```

A: INPUT DEVICES

```
<OL>
```

```
<LI>MOUSE</LI>
```

```
<LI>KEYBOARD</LI>
```

```
<LI>SCANNER</LI>
```

```
</OL>
```

(b) Write HTML code to display the following table :

No. of Students	
Science	56
Commerce	58

A:

```
<TABLE Border="2">
```

```
  <TR><TD Colspan="2">No. of students</TD></TR>
```

```
  <TR><TD>Science</TD><TD>56</TD></TR>
```

```
  <TR><TD>Commerce</TD><TD>58</TD></TR>
```

```
</TABLE>
```

(c) Write any two attributes of <INPUT> tag.

A: Type, Name, Value, Size etc.

35. Explain the advantages of DBMS.

A:

1. Controlling redundancy

The storing of the same data in multiple locations (Redundancy) can be avoided with the use of DBMS. Redundancy makes memory wastage.

2. Data consistency

Data inconsistency (Multiple values for the same data) can be avoided using DBMS. Inconsistency can be avoided by removing data redundancy.

3. Efficient data access

Data can be accessed efficiently using the techniques available in DBMS.

4. Data integrity

Integrity refers to the overall completeness, accuracy and consistency of the data in the database. Data integrity is imposed through the use of standard rules and procedures.

5. Data security

DBMS provides data security. Data security refers to the protection of data against accidental or intentional disclosure or unauthorized modification or destruction by unauthorized persons.

6. Sharing of data

Data can be shared among several users or programs by the use of DBMS.

7. Crash recovery

When a system crashes, DBMS provides some mechanisms to recover data from the crashes.

8. Enforcement of standards

The standards like naming conventions, display formats, documentation standards, access rules etc. can be enforced using DBMS.