

**SECOND YEAR HIGHER SECONDARY EXAMINATION, MARCH 2026**

Part – III

Time : 2 Hours

**COMPUTER SCIENCE**

Cool-off time : 15 Minutes

Maximum : 60 Scores

**General Instructions to Candidates :**

- There is a 'Cool-off time' of 15 minutes in addition to the writing time.
- Use the 'Cool-off time' to get familiar with questions and to plan your answers.
- Read questions carefully before answering.
- Read the instructions carefully.
- Calculations, figures and graphs should be shown in the answer sheet itself.
- Malayalam version of the questions is also provided.
- Give equations wherever necessary.
- Electronic devices except non-programmable calculators are not allowed in the Examination Hall.

**വിദ്യാർത്ഥികൾക്കുള്ള പൊതുനിർദ്ദേശങ്ങൾ :**

- നിർദ്ദിഷ്ട സമയത്തിന് പുറമെ 15 മിനിറ്റ് 'കൂൾ ഓഫ് ടൈം' ഉണ്ടായിരിക്കും.
- ചോദ്യങ്ങൾ പരിചയപ്പെടാനും ഉത്തരങ്ങൾ ആസൂത്രണം ചെയ്യാനും 'കൂൾ ഓഫ് ടൈം' ഉപയോഗിക്കുക.
- ഉത്തരങ്ങൾ എഴുതുന്നതിനു മുമ്പ് ചോദ്യങ്ങൾ ശ്രദ്ധാപൂർവ്വം വായിക്കണം.
- നിർദ്ദേശങ്ങൾ മുഴുവനും ശ്രദ്ധാപൂർവ്വം വായിക്കണം.
- കണക്ക് കൂട്ടലുകൾ, ചിത്രങ്ങൾ, ഗ്രാഫുകൾ, എന്നിവ ഉത്തരപേപ്പറിൽ തന്നെ ഉണ്ടായിരിക്കണം.
- ചോദ്യങ്ങൾ മലയാളത്തിലും നല്കിയിട്ടുണ്ട്.
- ആവശ്യമുള്ള സ്ഥലത്ത് സമവാക്യങ്ങൾ കൊടുക്കണം.
- പ്രോഗ്രാമുകൾ ചെയ്യാനാകാത്ത കാൽക്കുലേറ്ററുകൾ ഒഴികെയുള്ള ഒരു ഇലക്ട്രോണിക് ഉപകരണവും പരീക്ഷാഹാളിൽ ഉപയോഗിക്കുവാൻ പാടില്ല.

Answer any 5 questions from 1 to 6. Each carries 1 score.

(5 × 1 = 5)

- Which keyword is used to define a structure in C++ ?  
(a) STRUCT (b) Structure  
(c) struct (d) STRUCTURE
- Which tag is used to create a hyperlink in a web page ?  
(a) <H> (b) <A>  
(c) <B> (d) <I>
- The process of creating a website suitable to work on every device and every screen size is known as \_\_\_\_\_.
- T1 and T2 are two union compatible relations. Cardinality of T1 is 7 and cardinality of T2 is 5. If cardinality of  $(T1 \cup T2) = 9$ , then the cardinality of  $(T1 \cap T2)$  is \_\_\_\_\_.
- In MySQL, which aggregate function is used to find the number of non-NULL values in a column ?
- Which branch of Computer Science deals with the scientific study associated with the design, fabrication, theory and application of robots ?

Answer any 9 questions from 7 to 18. Each carries 2 scores.

(9 × 2 = 18)

- Write C++ code segments for the following :  
(a) To declare an integer pointer variable 'P' and dynamically initialise it with the value 10. (1)  
(b) How memory leak can be avoided in the above allocation ? (1)
- Which are the ways to implement compile-time polymorphism ?
- List the operations that can be performed on data structures.

10. "Circular queue overcomes the limitation of linear queue." Which limitation ? How ?
11. Write HTML code to display  $H_2SO_4$  in a web page.
12. Write HTML code segment to display the following list in a web page :
- (1) RAM
  - (2) ROM
  - (3) Cache
13. Match the following :

Tag	Attribute
<A>	Frame
<EMBED>	Target
<TABLE>	Type
<FORM>	Name
	Src

14. List the basic data types in JavaScript with one example for each.
15. Consider the JavaScript statements :

```
var A,B;  
A="Welcome to JavaScript";  
B=A.toUpperCase( );  
document.write(B);  
alert(B);
```

- (a) What will be the output ? (1)
- (b) Two statements are used to display output, how do they differ ? (1)

16. Consider the given relation STUDENT.

Reg_No	Name	Batch	Score
101	Rehma	Bio Science	480
105	Riya	Comp. Science	455
107	Rekha	Comp. Science	300

- (a) Write the relational algebra expression to display details of students in Bio Science batch. (1)
- (b) Write the output of  $\pi_{\text{Name, Score}}(\text{STUDENT})$ . (1)
17. What is the difference between 'echo' and 'print' statements in PHP ?
18. List any two applications of Biometrics in daily life.

**Answer any 9 questions from 19 to 29. Each carries 3 scores.**

(9 × 3 = 27)

19. (a) What is inheritance in Object – Oriented Programming ? (1)
- (b) Write brief note on any four types of inheritance. (2)
20. Write the algorithm to perform PUSH operation in a stack.
21. Compare static web page and dynamic web page.
22. List the form controls used to collect data using web forms.
23. Write JavaScript code segment to print numbers from 1 to 100 using *while loop*.
24. Explain the various types of web hosting.
25. Write short note on the major components of SQL.

26. Consider the query below :

```
CREATE TABLE Bank
(Acc_No INT,
Name VARCHAR(20),
DoB DATE,
Gender CHAR,
Balance INT);
```

Rewrite the query for the following requirements :

- (a) To set a proper Primary Key.
- (b) To specify that the Name column cannot be NULL.
- (c) To set default value for the Gender column as "F".

27. (a) Write the output of the following PHP code segment :

```
<?php
    $A=1;
    while($A <=5)
    {
        echo "$A";
        $A++;
    }
?>
```

(1)

(b) Re-write the above code using *for loop*.

(2)

28. Write a brief note on the major cloud service models.

29. (a) Define e-Learning.

(1)

(b) List any four advantages of e-Learning.

(2)

Answer any 2 questions from 30 to 32. Each carries 5 scores.

(2 × 5 = 10)

30. (a) Define a structure in C++ to store book details such as BookID, BookName and Price. (3)
- (b) Compare Array and Structure. (2)
31. (a) Write HTML code to create a travel blog webpage using proper background colour. (1)
- The page should include :
- (b) A message (Eg: *Welcome to My Blog*) scrolling from left to right. (1)
- (c) A main heading (Eg: *Travel Blog*) and a horizontal line across the width of the browser window. (1)
- (d) A paragraph describing different travel destinations (use at least one text formatting tag). (1)
- (e) An image of a destination (Eg: *Munnar.jpg*) and a text message (Eg: *Image of Tea Estate*) if the browser doesn't support the image. (1)
32. (a) Explain the major components of the DBMS environment. (3)
- (b) List and explain the users of database system based on mode of interaction with the DBMS. (2)
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