HIGHER SECONDARY PRACTICAL EXAMINATION, Feb. 2020

COMPUTER SCIENCE

HSE II

Max. Score: 40
Time: 3 Hours

Instructions to the candidates:

- Two questions are circled or tick marked in the following list. The first is from C++ programming area and the second is from either HTML/JavaScript or SQL.
- Write down the questions and the required program/code/queries in the answer sheet within one hour.
- The answers are to be submitted to the examiner for verification. These programs should be developed in computer after the consent of the examiner and the output should be shown to the examiner.
- Viva voce will be conducted based on the given practical questions.
- The score distribution will be as follows:

  (a) C++ Program Logic (Written)   :   8 Score

  (b) Debugging Skills (Error correction and Output)   :   8 Score

  (c) Proper HTML tags, attributes, Script or PHP code if required /

      Proper SQL commands, clauses, operators (Written)   :   8 Scores

  (d) Debugging Skills (Error correction and Output)   :   8 Scores

  (e) Practical Log Book

      (10 C++ Programs, 10 Web applications and 5 SQL)   :   4 Scores

  (f) Viva Voce   :   4 Scores

  Total   :   **40 Score**

Part A – Programming in C++

1. Find area of a rectangle, a circle and a triangle. Use switch statement for selecting an option from a menu.

2. Find the roots of a quadratic equation by inputting the three coefficients.

3. Display the first N terms of Fibonacci series.

4. Find the sum of the squares of the first N natural numbers.

5. Input a number and check whether it is palindrome or not.

6. Input a number and check whether it is prime or not.

7. Find the sum of the digits of an integer number.

8. Input N numbers into an array and find the largest.

9. Create an array to store some numbers and sort them in ascending order.

10. Input N numbers into an array and search for a given number using linear search method.

11. Find the length of a string without using strlen() function.

12. Find the factorial of a number by defining a function.

13. Find the binary equivalent of an integer number.

14. Swap the contents of two variables using a function with pointers as arguments.

15. Find the total marks of a student by defining a structure with the details such as roll number, name and marks of six subjects.

Part B – Web Applications (HTML/JavaScript/PHP)

16. Design a simple and attractive webpage for Kerala Tourism. It should contain features like background colour/image, headings, text formatting and font tags, images, etc.

17. Design a simple webpage about your school with its image as background. Create another webpage named address.html containing the school address. Give links from school page to address.html and back to school.

18. Design a webpage containing frames that divide the screen horizontally in the ratio 50:50 to show the two web pages - one containing the list of Indian cricket team members and the second page containing the list of Indian football team members.

19. Design a webpage having a list as shown below.

Department of Tourism
Some Tourist Destinations in Kerala
1. Wildlife
   - Iravikulam
   - Muthanga
   - Kadalundi
2. Hill Stations
   o Munnar
   o Wayanad
   o Gavi
3. Beaches
   ▪ Kovalam
   ▪ Muzhuppilangad
   ▪ Kappad

20. Design a webpage as shown below using appropriate list tag.

Database Users

DBA
> The person who is responsible for the control of the centralized and shared database.

Application Programmers
> Computer professionals who interact with the DBMS through application programs.

Naive Users
> People accessing data by invoking one of the application programs.

21. Design a web page for a Form as shown below.

Candidate Login

User Name [   ]

Password [   ]

(Submit) (Clear)

22. Design a web page containing a table as shown below.

Terrestrial Planets (Source: NASA)

Planet	Day Length (In Earth hours)	Year Length (In Earth days)
Mercury	1408	88
Venus	5832	224.7
Earth	24	365.26
Mars	25	687

23. A webpage should contain one text box for entering a text. There should be two buttons labelled "To Upper Case" and "To Lower Case". On clicking each button, the content in the text box should be converted to upper case or lower case accordingly. Write the required JavaScript for these operations.

24. Develop a webpage with two text boxes and a button labeled "Show". The user can enter a number in the first text box. On clicking the button, the second text box should display whether the number is even or odd. Write the required JavaScript.

25. Write a PHP program to accept a number and display it in the following format. If 5 is given, then output will be as follows:

```
1
1    2
1    2    3
1    2    3    4
1    2    3    4    5
```

Part C – SQL
(Distribution of 8 score: Table creation – 2, Insertion – 2, Four Queries – 1 each.)

26. Create a table *Student* with the following fields and insert at least 5 records into the table except for the column Total.

Roll	Integer Primary key
Name	Varchar (25)
Batch	Varchar (15)
Mark1	Integer
Mark2	Integer
Mark3	Integer
Total	Integer

   a. Update the column Total with the sum of Mark1, Mark2 and Mark3.
   b. List the details of students in Commerce batch.
   c. Display the name and total marks of students who are failed (Total < 90).
   d. Display the details of students in the alphabetical order of names.

27. Create a table *Employee* with the following fields and insert at least 5 records into the table except the column Gross_pay and DA.

ECode	Integer	Primary key
EName	Varchar (20)	
Designation	Varchar (25)	
Department	Varchar (25)	
BasicPay	Decimal (10,2)	
DA	Decimal (10,2)	
GrossPay	Decimal (10,2)	

   a) Update DA with 32% of Basic Pay.
   b) Display the details of employees in Purchase and Sales departments.
   c) Update the Gross Pay with the sum of Basic Pay and DA.
   d) Find the number of employees having gross pay above 35000.

28. Create a table *Stock,* which stores daily sales of items in shop, with the following fields and insert at least 5 records into the table.

ItemCode	Integer	Primary key
ItemName	Varchar (20)	
ManufacturerCode	Varchar (5)	
Qty	Integer	
UnitPrice	Decimal (10,2)	

   a. Find the number of items manufactured by the company "Intel".
   b. Remove the items with quantity 0.
   c. Display the details of items in the ascending order of unit price.
   d. Increase the unit price of all items by 10%.

29. Create a table *Book* with the following fields and insert at least 5 records into the table.

B_ID	Integer	Primary key
B_Name	Varchar (20)	
AuthorName	Varchar (25)	
PubName	Varchar (25)	
Price	Decimal (10,2)	

   a. Display the details of books in the alphabetical order of author's name.
   b. Reduce the price of books by 10% that are published by SCERT.
   c. Display the total price of the books written by "Robin Sharma".
   d. Remove the details of books published by "ABC Publishers".

30. Create a table *Bank* with the following fields and insert at least 5 records into the table.

AccNo	Integer	Primary key
AccName	Varchar (20)	
BranchName	Varchar (25)	
Acc Type	Varchar (10)	
Amount	Decimal (10,2)	

   a. Display the account details of customers having "Current Account".
   b. Change the branch name "Trivandrum" to "Thiruvananthapuram".
   c. Display the details of customers in Kollam, Thirssur and Wayanad branches.
   d. Remove the details of customer with account number 2001009.