HIGHER SECONDARY PRACTICAL EXAMINATION, March 2017

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/PHP 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 files 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. Input the three coefficients of a quadratic equation and find the roots.
2. Find area of a rectangle, a circle and a triangle. Use switch statement for selecting an option from a menu.
3. Find the sum of the digits of an integer number.
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. Find the length of a string without using strlen() function.
7. Display the first N terms of Fibonacci series.
8. Read N numbers into an array and display the numbers larger than the average value.
9. Read admission number of N students in a class and search for a given admission number in the list. Use linear search method of searching.
10. Create an array to store the heights of some students and sort the values.
11. Find the factorial of a number with the help of a user-defined function.

12. Define a function to find the factorial of a number. Using this function find the value of nCr.

13. Input an integer number and display its binary equivalent with the help of a user-defined function.

14. Find the net salary of an employee by defining a structure with the details Employee Code, Name, Basic Pay, DA, HRA and PF.

15. Define a structure to store the details of books such as Book Code, Book Title, Date of Purchase, Author, Publisher and Price. Write a program with this structure to store the details of 10 books and display the details.

16. Input string into a character pointer and count the vowels in the string.

Part B – Web Applications

1. 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.

2. Design a webpage as shown below using appropriate list tags.

List of Nobel Laureates from India

Rabindra Nath Tagore

He was the first to get Nobel Prize from India. He received prize in literature in 1921. He got Nobel Prize for his collection of poems "Gitanjali".

CV Raman

He got Nobel for Physics in 1930. He received Nobel Prize for his contribution called Raman Effect.

Mother Teresa

Mother Teresa who founded Missionaries of Charity which is active in more than 100 countries received Nobel Prize in 1979.

Amartya Sen

Amartya Sen was awarded Nobel Prize in 1998 in Economics. He has made contributions to welfare economics, social choice theory etc.

Kailash Satyarthi

He is a child right activist who founded "Bachpan Bachao Andolan" in 1980. He shared Nobel prize for peace in 2014.

3. Design a simple webpage about your school. Create another webpage named address.htm containing the school address. Give links from school page to address.htm.

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

5. Design a webpage showing tourist destinations in Kerala as shown below.

Department of Tourism

Government of Kerala

Tourist Destinations in Kerala

1. Beaches
   a. Kovalam
   b. Muzhuppilangad
   c. Kappad
2. Hill Stations
   i. Munnar
   ii. Wayanad
   iii. Gavi
3. Wildlife
   a. Iravikulam
   b. Muthanga
   c. Kadalundi

6. Design the following table using HTML:

Class	Strength		
	Science	Commerce	Humanities
Plus One	49	50	48
Plus Two	50	50	49

7. 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

8. Design an HTML form to accept the Curriculum Vita of a job applicant. The form should provide facility to accept name, address in multiple lines, gender using option button, nationality using a list box and hobbies using check boxes. The form should provide buttons to save and clear the contents of text boxes.

9. Develop a webpage with two text boxes and a button labelled "Show". The user can enter a number in the first text box. One clicking the button, the second text box should display the day corresponding to the given number using switch statement in JavaScript. (1 - Sunday, 2 - Monday, ..., 7 - Saturday)

10. 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.

11. 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 the sum of all numbers up to the given number. Write the required JavaScript.

12. 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
```

13. Write a PHP program to accept a number and display its multiplication table up to 12 in a neat table format.

14. Write a PHP program to accept the total sales of a particular salesman and display commission. If the monthly sales amount is greater than 1 lakh - commission is 10%, if it is between 1 lakh and 1.5 lakh - commission is 12% and if it is greater than 1.5 lakh - commission is 15%.

Part C – SQL

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

Roll_Number	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 name and batch of those students who scored 90 or more in Mark1 and Mark2.
   e. Delete the student who scored below 30 in Mark3.

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

Emp_code	Integer	Primary key
Emp_name	Varchar (20)	
Designation	Varchar (25)	
Department	Varchar (25)	
Basic Pay	Decimal (10,2)	
DA	Decimal (10,2)	
Gross_pay	Decimal (10,2)	

a) Update DA with 24% of Basic Pay.
b) Display the details of employees in Purchase, Sales and HR departments.
c) Update the Gross_pay with the sum of Basic Pay and DA.
d) Display the details of employee with gross pay below 10000.
e) Delete all the clerks from the table.

3. Create a table *Stock,* which stores daily sales of items in shop, with the following fields and insert at least 10 records into the table.

Item_code	Integer	Primary key
Item_name	Varchar (20)	
Manufacturer_Code	Varchar (5)	
Qty	Integer	
Unit_Price	Decimal (10,2)	
Exp_Date	Date	

a. Display the details of items which expire after 31/3/2016 in the order of expiry date.
b. Find the number of items manufactured by the company "SATA".
c. Remove the items which expire between 31/12/2015and 01/06/2016.
d. Add a new column Reorder in the table to store the reorder level of items.
e. Update the column Reorder with value obtained by deducting 10% of the current stock.

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

Book_ID	Integer	Primary key
Book_Name	Varchar (20)	
Author_Name	Varchar (25)	
Pub_Name	Varchar (25)	
Price	Decimal (10,2)	

a. Create a view containing the details of books published by SCERT.
b. Display the average price of books published by each publisher.
c. Display the details of book with the highest price.
d. Display the publisher and number of books of each publisher in the descending order of the count.
e. Display the title, price and price after a discount of 10% in the alphabetical order of book title.

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

Acc_No	Integer	Primary key
Acc_Name	Varchar (20)	
Branch_Name	Varchar (25)	
Acc_ Type	Varchar (10)	
Amount	Decimal (10,2)	

a. Display the account details of "Savings Account" in Kodungallur branch.
b. Change the branch name "Trivandrum" to "Thiruvananthapuram"
c. Display the details of customers in Thiruvananthapuram, Ernakulam and Kozhikode.
d. List the details customers in Thrissur branch having a minimum balance of Rs. 5000.
e. Delete all the current accounts in Mahe branch.

6. Create *Student* table (given in Qn. No. 1), insert at least 5 records and write SQL statements for the following:
   a. Update the column Total with the sum of Mark1, Mark2 and Mark3.
   b. List the details of students in Science batch in the ascending order of their names.
   c. Display the highest Total in Humanities batch.
   d. List the details of student who passed (Subject minimum is 30 and aggregate minimum is 90) the course.
   e. Delete the students of Commerce batch who failed in any one subject.

7. Create *Book* table (given in Qn. No. 4), insert at least 5 records and write SQL statements for the following:
   a. Display the details of books with price 100 or more.
   b. Display the Name of all the books published by SCERT.
   c. Increase the price of the books by 10% which are published by SCERT.
   d. List the details of books, the titles of which end with word "Programming".
   e. Remove all the books written by "Balaguruswamy".