Practical Evaluation

GUIDELINES FOR LAB WORK AND PRACTICAL EVALUATION OF COMPUTER SCIENCE

2014 – 15 Admission onwards

We follow outcome focussed assessment approach in the evaluation process in the Kerala School Curriculum 2013. Term-end Evaluation is an important aspect of assessment. Along with Term-end Evaluation at the end of an academic year, Practical Evaluation (PE) is to be conducted. PE is the term-end assessment of the lab work done in the academic year. Lab work is an integral part of the Continuous and Comprehensive Evaluation (CCE). Hence, it should be considered for the process assessment and portfolio assessment which are the components of Continuous Evaluation (CE) score.

A. Syllabus for Practical

Lab work is a part of the transaction of certain contents in the syllabus. Students can attain the learning outcomes associated with some of the concepts/content only through the lab work. Hence the practical should begin in Class XI itself and it should go on with the respective theoretical aspects. Areas to be covered for the lab work and the minimum number of problems are given below:

1. Programming in C++ (10 problems)

- If - else statements (1 problem)
- switch statement (1 problem)
- Looping statements (2 problems)
- Array manipulation (2 problems)

- Functions (2 problems)
- Structures (1 problem)
- Pointers (1 problem)

2. Developing HTML documents (5 problems)

- Basic tags, <IMG> tag (1 problem)
- Lists (1problem)
- Hyper-linking (1 problem)
- Table / Frame (1 problem)
- Form (1 problem)

3. Client side programming with JavaScript in HTML codes (2 problems)

- Control structure (1 problem)
- Data validation (1 problem)

4. Server side scripting with PHP (3 problems)

- PHP script using Forms (2 problems)
- Database connectivity (1 problem)

5. Database queries using MySQL (5 problems)

- Five tables should be identified and queries should be designed in such a way that all clauses, operators and aggregate functions are to be covered.

B. Lab Work

This is an activity by which, the concepts acquired and observations noted are practically implemented in the lab, and thereby, more clarity about the concepts and operational skills are achieved. The students should also be convinced about the use of computer for problem solving with the help of user developed programs. This activity makes the students utilise the computer to develop applications in various fields. The active participation and involvement of the students are to be ensured.

A minimum of 25 problems, as specified above, are to be solved through the lab work. Sample questions from each area are given as Appendix-1 of this document. The questions are grouped into three levels for each area, based on the difficulty level. While selecting the minimum required questions, we should ensure that, questions are chosen from all the three levels. The number of questions from each level should be in the ratio

5:3:2 for each area of the syllabus. A sample list of 25 problems as per the foresaid criteria is given as Appendix-2.

Practical Log Book

Practical Log Book (PLB) is a standard record book in which all the activities related to lab work are recorded. A PLB is opened in Class XI for the lab work and the same is used in Class XII. Lab work is a continuous process. The PLB should contain a minimum of 25 works as specified in the practical syllabus. The format of recording in Practical Log Book may be as follows:

Programming in C++

LHS page	RHS page
• Algorithm / Flowchart • Sample Input and Output	• Problem number and Date of practical work • Problem statement • Source Code

Web Applications (HTML documents, JavaScript)

LHS page	RHS page
• Tags and attributes required • Printout of resultant web page	• Problem number and Date of practical work • Problem statement • HTML Code

Database queries using MySQL

LHS page	RHS page
• Table with sample records • Output of querieso	• Problem number and Date of practical work • Table structure and queries • SQL statements

The teacher should verify the correctness of each work and affix his/her signature along with date and remarks, if any.

Procedure

The lab work consists of threefold procedure - preparatory work, tryout and reporting. Teachers should ensure that the students pass through all these three stages sequentially throughout the academic year.

Preparatory work: The student who comes to the computer lab to do practical work should be clear about the work he/she intends to do. He/She should also know the steps for doing the job using a computer, the software to be used, how it has to be operated, what the product should be, what should be its specifications and program code. All students should have their Practical Log Book while attending the lab period with the following details:

- Program number and date
- Problem statement
- Algorithm / Flowchart / Tags and attributes
- C++ source code/ HTML code / SQL statements

Tryout: In the case of C++ programming and web applications, the source code is typed, compiled and executed in the lab. During the debugging process, the corrections, if any, are noted down in the PLB also. When the output is obtained, it should be intimated to the teacher. Teacher performs process assessment and makes necessary recordings in both the PLB and Teacher's manual. Students record sample output in the PLB or take the printout of the output.

Reporting: The PLB with the final code and sample output (pasted printout in the case of web applications and office packages) is submitted and get it signed by the teacher before the next lab period.

The programs discussed in the class room are to be tried out in the lab. More problems are also available in the text book. Teacher is expected to ensure a minimum number of problems in the Practical Log Book covering all the areas suggested for practical evaluation. The prescribed proportion among the three groups should be strictly followed in the selection of questions.

C. Practical Evaluation (PE)

The problem solving skills and the competency in using various software packages are to be assessed through PE. The following are the guidelines to be followed while conducting PE:

- The questions should strictly be from the prescribed syllabus.
- Examination will be of 3 hours duration and maximum score will be 40.
- Practical evaluation will be conducted in batches. The maximum number of students in each batch is limited to 15.

- Students must attend the PE with Practical Log Book. It should contain a minimum of 25 programs covering the practical syllabus as described earlier. Only one notebook is enough for the Practical Log Book (*no rough – fair separation*). Practical Log Book should be certified at the end of Class XI as well as Class XII by the teacher-in-charge. The same should be verified and signed by the external examiner.
- The questions are to be finalised from the pool issued by the DHSE referring to the PLB.
- There will be three parts in the question paper. Part A contains questions from Programming in C++. Part B contains questions for web applications from the respective syllabus and Part C includes questions for database queries. A candidate has to attend two questions – one from Part A and the other from either Part B or C whichever is assigned.
- There should be a minimum of 16 question papers for each batch of 15 students. Each Question paper should contain a question from Part A and another Question from Part B or C. While framing questions for each question paper, it should be noted that if the question from Part A requires more time due to its higher level, the second question from Part B or C should be of lower level and vice versa.
- One question paper will be selected by the student at random from a set of 16 Question papers. Appropriate strategy may be adopted by the examiner to ensure the fair conduct of examination.
- Once the learner is assigned the questions, he/she should write the source code/ procedure/statements for any one of the questions and submit it to the examiner. The examiner checks the correctness of the logic or procedure and allows doing it on the computer if found correct. If the logic or procedure is approximately 70% correct, some clues or hints may be given and the student is allowed to try on the computer. If the logic (or procedure) is wrong, the examiner can give another problem from the same area with the same level. The student may be allowed to change the question within half an hour, if the question is found unanswerable. In such cases, score should be deducted appropriately and may be changed within half an hour.
- The debugging skills are to be assessed and credit should be given.
- The accuracy in the output is to be tested with proper sample data.
- Delete programmes from system before exam and don't use help files.

- Teacher should ensure that the programs developed as part of lab work and by the previous candidates are deleted before the commencement of the examination.
- The students are not allowed to use the help files of the software.

The score distribution for each question in C++ should be as follows:

• Logic of the solution (Program coding)	– 8 score	*16 score*
• Debugging skills (Error correction and execution)	– 6 score	
• Dynamic problem solving skills	– 2 score	

The score distribution for each question in web application should be as follows:

• Proper tags and attributes (Script if required)	– 8 score	*16 score*
• Debugging skills (Error correction and execution)	– 6 score	
• Dynamic problem solving skills	– 2 score	

The score distribution for each question in SQL should be as follows:

• Proper commands, clauses, operators, etc.	– 8 score	*16 score*
• Debugging skills (Error correction and execution)	– 6 score	
• Dynamic problem solving skills	– 2 score	

The score distribution for each question in Office packages should be as follows:

• Procedure / Formula / Menus & Commands / Tools	– 10 score	*16 score*
• Creativity and formatting ability	– 4 score	
• Dynamic skill in using the software	– 2 score	

Total score for 2 questions	**– 32 score**	***40 score***
Practical Log Book	**– 4 score**	
Viva voce	**– 4 score**	

- Viva voce should not create sense of fear among the students. It should not be formal in the form of an interview. It should be a casual interaction with the students during the evaluation to check whether he / she has conceptual / process clarity in the given two questions only. The examiner may ask 4 to 6 questions to award the scores for viva voce.
- The mark-list of the students should be prepared, reflecting the split

scores along with the total score.

- The scores of the students are to be recorded in the mark sheet issued by the DHSE and send it to the DHSE as per the instructions given by the directorate.

Dynamic problem solving skills may be tested as follows:

- After completing the program, a slight modification in the problem can be made and let the learner modify the code to effect the change.
- The ability of the learner can be credited by awarding the 2 scores suitably.
- E.g.: If the original question is to find the largest among three numbers, ask to modify the code to find the smallest.

Format of Score Sheet for Practical Evaluation

Sl. No.	Register Number	Qn. No.	Score Distribution						Total Score (40)
			Logic / Procedure (8 or 10)	Execution/ Output (6 or 4)	Dynamic Skills (2)	Total for 2 Qns. (32)	Practical Log Book (4)	ViVa Voice (4)	
1									
2									
3									
15									

Name and Designation of Examiner

……

……

Date of Exam: …..……...…

Signature: ……...

APPENDIX – 1

Pool of Questions
Programming in C++ (10 x 3 = 30 questions)

Level 1

1. Input the three coefficients of a quadratic equation and find the roots.
2. Input a group code and display the corresponding group name based on the following:

   5, 7 – Science (Computer Science)

   33, 34 – Humanities (Computer Applications)

   39 – Commerce (Computer Applications)

   Other codes – Non Computer groups
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. Find the length of a string without using strlen() function.
6. 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.
7. Find the factorial of a number with the help of a user-defined function.
8. Define a function to swap the contents of the two variables. Using this function, interchange the values of three variables. E.g. AàBCàA.
9. Find the net salary of an employee by defining a structure with the details Employee Code, Name, Basic Pay, DA, HRA and PF.
10. Create two pointers, initialise with two numbers and find the sum and average of these numbers.

Level 2

1. Input three numbers and find the difference between the smallest and the largest numbers.
2. Assume that January 1 is Monday. Write a program using switch to display the name of the day in that month when we input day number.
3. Input a number and check whether it is palindrome or not.
4. Find all prime numbers below 100.

5. Display Pascal's triangle having N rows.
6. Read N numbers into an array and display the numbers larger than the average value.
7. Define a function to find the factorial of a number. Using this function find the value of nCr.
8. Input an integer number and display its binary equivalent with the help of a user-defined function.
9. With the help of a structure, develop a C++ program to read register number, name, and Scores obtained (out of 200) in English, second language, chemistry, physics, computer science and mathematics by 5 students. Calculate total score, average score and grade obtained by them. Grade is calculated based on the average as given in the table. Display register number, name, average score and grade of these students.

Average Score	Grade
>=180	A+
>=160	A
>=140	B+
>=120	B
>=100	C+
>=80	C
>=60	D+
<60	No Grade

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

Level 3

1. Find the amount to be paid for the consumption of electricity when the previous and current meter-readings are given as input based on the conditions given in the table.

Units consumed	Amount per Unit
Up to 100	Rs. 0.50/-
101 - 150	Rs. 0.75/-
151 - 200	Rs. 1.00/-
201 - 250	Rs. 1.50/-
Above 250	Rs. 2.00/-

2. Find area of a rectangle, a circle and a triangle. Use **switch** statement for selecting an option from a menu.
3. Display the first N terms of Fibonacci series.
4. Input two years (e.g. 1000, 2000) and display all leap years between them.
5. Create an array to store the heights of some students and sort the values.

6. Create a square matrix and display the same in matrix form. Find the sum of leading diagonal elements (from top left to bottom right) and off diagonal elements (top right to bottom left) separately.
7. Find the sum of the first N natural numbers using recursive function.
7. Define a function to accept an integer number and return its reverse (e.g. if the argument is 123 the return-value should be 321). Using this function display all palindrome numbers between a given range.
8. 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.
9. Create a dynamic array to store the names of a group of students and prepare a roll list according to the alphabetical order of the names.

Web Applications (10 x 3 = 30 Questions)
(HTML - 7, JavaScript - 2, PHP - 3)

Level 1

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

2. Design a web page 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".

C V 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.

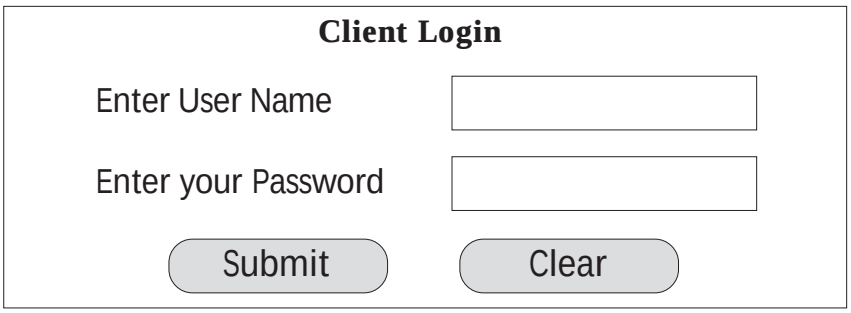
3. Design a personal web page for your friend. It should have a link to his e-mail address.

4. 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

5. Design a simple web page as shown below.



6. Develop a web page with two text boxes and a button labelled "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.

7. A web page 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.

8. 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%.

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

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

10. Write a data entry program in PHP which accepts the details of students like register number, name, age, sex and group (Commerce, Science, and Humanities) and stores it in a database.

Level 2

1. Design a web page for promoting vegetable cultivation at homes as shown in the figure. It should contain features like background colour/ image, headings and stylish fonts, images, marquee, etc.

2. Design an attractive web page showing the following list.

Graduate Level Courses in Leading Institutions in Kerala

- Indian Institute of Technology, Palakkad
  - B.Tech.
- National Institute of Technology, Calicut
  - B.Tech.
  - B.Arch.
- Indian Institute of Science Education and Research, Thiruvananthapuram
  - BS-MS Dual Degree
- National University of Advanced Legal Studies, Kochi
  - B.A. LL.B. (Hons.)
- Indian Institute of Space Science and Technology
  - B.Tech. (Aerospace Engineering, Avionics)
  - Dual Degree (B.Tech. + M.S./M.Tech.)

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.

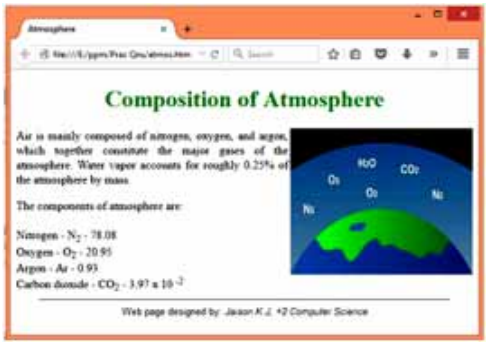
5. Consider that your school is hosting an inter-school IT fair. Design a form webpage that contains a form for accepting registrations. The form page should contain facility to enter school name, user name,

password and a mobile phone number. It should also contain buttons for saving and clearing the data entered.

6. 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)
7. Develop a webpage for the inter-school IT fair conducted by your school. The webpage should contain facility to enter school name, user name, password and a mobile phone number. It should also contain buttons for saving and clearing the data entered. Ensure that the data is entered in all the text boxes and the text box for mobile phone number contains only numbers. Write JavaScript for this validation.
8. Write a PHP program to accept a string and display in a table format the (a) Total number of characters (b) Count of each vowel.
9. Write a PHP program to find the factorial of a given number after accepting the number through a form. The factorial should be calculated using a function named fact().
10. Write a PHP program to accept a product category and display the details of all products under that category in a table format. (The details of products are to be stored in a table in a database and accessed from the PHP program).

Level 3

1. Design a web page about atmosphere as shown below. It should contain features like background colour/image, headings and stylish fonts, images, etc.



2. Design a web page 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

3. Design an attractive web page about India. Provide details about the Indian freedom movement at the lower part of the web page. Also create another web page containing the list of states in India, named 'states.htm'. Create two links in the main web page - one to link to the bottom of the web page where details about freedom movement is given and another to the web page 'states.htm'.

4. Design the following catalogue of products for an IT shop using HTML.

Laser Printer	
	Model: Canon LBP 2900 Price: Rs. 6500
Scanner	
	Model: HP Scanjet G2410 Price: Rs. 3800
Monitor	
	Model: LG 22MP67VQ Price: Rs. 10500
Keyboard & Mouse Combo	
	Model: Logitech MK200 USB Price: Rs. 950

5. 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.
6. Develop a web page 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 whether the number is prime or not. Write the required JavaScript.
7. Develop a web page containing a two text boxes for entering User name and Password. There should be a login button also. On clicking the login button, it should check the followings.
    a) The user name should contain at least 10 characters and all the letters should be in lower cases.
    b) The password should contain at least 7 characters and should contain at least one lower case letter, one upper case letter and a digit.
8. Write a PHP program to accept a number and display its multiplication table up to 12 in a neat table format.
9. Write a PHP program to select a country from combo box and display its capital. (Country and capital may be stored in an associative array.)
10. Write a PHP program to accept User Id and password and check whether it is valid or not. If it is correct then display the message "Successfully Logged In" else display the message "Invalid User Id or Password". (The User Id and password are to be stored in a table in a database and accessed from the PHP program.)

SQL (5 x 3 = 15 Questions)

Level 1

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	Decimal (10,2)	
DA	Decimal (10,2)	
Gross_pay	Decimal (10,2)	

   a) Update DA with 75% of Basic.
   b) Display the details of employees in Purchase, Sales and HR departments.
   c) Update the Gross_pay with the sum of Basic 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 a 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 on 31/3/2016.
   b. Display the item names with stock zero.
   c. Remove the items which expire on 31/12/2015.
   d. Increase the unit price of all items by 10%.
   e. List the items manufactured by "ABC & Co" with quantity above 100.

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. 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 with the title containing the word "Programming" at the end.
   e. Remove all the books written by "Balaguruswamy".

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 of customers in Thrissur branch having a minimum balance of Rs. 5000.
e. Delete all the current accounts in Mahe branch.

Level 2

1. Use Student table 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 students 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.
2. Use Employee table and write SQL statements for the following:
   a. Update DA with 75% of Basic for Managers and 80% Basic for all other employees.
   b. Update the Gross_pay with the sum of Basic and DA
   c. Display the details of employees in Purchase, Sales and HR departments in descending order of Gross pay.
   d. Find the number of employees in Accounts department.
   e. Delete the details of clerks whose Gross pay is below 5000.
3. Use Stock table and write SQL statements for the following:
   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 31/12/2015 and 01/06/2016.
   d. Add a new column named 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. Use Book table and write SQL statements for the following:
   a. Insert a column named Number_of_pages into the table.
   b. Display the details of books of the same author together in the descending order of the price published by NCERT.
   c. Display the average price of books published by "BPB" and written by "Robert Lafore".
   d. List the details of books published by "PHI" that contains the word "Programming" in the title.
   e. Remove all the books written by "Balaguruswamy", "Kanetkar" or "Robert Lafore".

5. Use Bank table and write SQL statements for the following:
   a. Display the branch-wise details of account holders in the ascending order of the amount.
   b. Insert a new column named Minimum_Amount into the table with default value 1000.
   c. Update the Minimum_Amount column with the value 1000 for the customers in branches other than Alappuzha and Malappuram.
   d. Find the number of customers who do not have the minimum amount 1000.
   e. Remove the details of SB accounts from Thiruvananthapuram branch who have zero (0) balance in their account.

Level 3

1. Use Student table and write SQL statements for the following:
   a. Update the column Total with the sum of Mark1, Mark2 and Mark3.
   b. Add a new column Average to the table Student.
   c. Update the column Average with average marks.
   d. List the details of student who has the highest Total.
   e. Delete the students of Commerce batch who failed in any two subjects.

2. Use Employee table and write SQL statements for the following:
   a. Update DA with 75% of Basic for Managers and 80% of Basic for all other employees.

b. Update the Gross_pay with the sum of Basic and DA.
c. Display name, department and gross pay of employees in Purchase, Sales and HR departments. The employees in the same department should appear together in the ascending order of Gross pay.
d. Find the number of employees in each department where there is minimum of 5 employees.
e. Show the details of employee with Gross pay greater than the average gross pay.

3. Use Stock table and write SQL statements for the following:
   a. Display the number of items manufactured by each company which expire after 31/3/2016.
   b. Add a new column Reorder in the table to store the reorder level of items.
   c. Update the column Reorder with value obtained by deducting 10% of the current stock.
   d. Display the details of items which expire at last.
   e. Remove the items which expire before 01/03/2015 or that are manufactured by "ABC & Co".

4. Use Book table and write SQL statements for the following:
   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, current price and the price after a discount of 10% in the alphabetical order of book title.

5. Use Bank table and write SQL statements for the following:
   a. Display the number and total amount of all the account holders in each branch.
   b. Display the number of Savings Bank account holders in each branch.
   c. Display the details of customers with the lowest balance amount.
   d. Display the branch and number of Current accounts in the descending order of the count.
   e. Display the details of customers in Kozhikode branch whose amount is greater the average amount.

APPENDIX – 2

Sample List of Questions for Lab Work

Programming in C++ – 10 Qns. (L1 – 5, L2 – 3, L3 – 2)

1. 1. Input the three coefficients of a quadratic equation and find the roots. (L1)
2. Find area of a rectangle, a circle and a triangle. Use switch statement for selecting an option from a menu. (L3)
3. Find the sum of the digits of an integer number. (L1)
4. Find the sum of the squares of the first N natural numbers. (L1)
5. Find the length of a string without using strlen() function. (L1)
6. 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. (L1)
7. Define a function to find the factorial of a number. Using this function find the value of nCr. (L2)
8. Input an integer number and display its binary equivalent with the help of a user-defined function. (L2)
9. 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. (L3)
10. Input string into a character pointer and count the vowels in the string. (L2)

Web Applications – 10 Qns. (L1 – 5, L2 – 3, L3 – 2)

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. (L1)
2. Design a webpage as shown below using appropriate list tags. (L2)

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”.

C V 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. (L2)

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. (L2)

5. 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. (L3)

6. 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) (L2)

7. 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. (L1)

8. 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%. (L1)

9. 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
2  2
1  2  3
1  2  3  4
1  2  3  4  5
```

(L1)

10. Write a PHP program to accept User Id and password and check whether it is valid or not. If it is correct then display the message "Successfully Logged In" else display the message "Invalid User Id or Password". (The User Id and password are to be stored in a table in a database and accessed from the PHP program) (L3)

SQL – 5 Qns. (L1 – 2, L2 – 2, L3 – 1)

1. Create a table Student with the following fields and insert at least 5 records into the table except for the column Total. (L1)

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. (L1)

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

a) Update DA with 75% of Basic.

b) Display the details of employees in Purchase, Sales and HR departments.

c) Update the Gross_pay with the sum of Basic 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 a shop, with the following fields and insert at least 10 records into the table. (L2)

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 31/12/2015 and 01/06/2016.

d. Add a new column named 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. (L3)

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

a. 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, current price and the 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. (L2)

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

a. Display the branch-wise details of account holders in the ascending order of the amount.

b. Insert a new column named Minimum_Amount into the table with default value 1000.

c. Update the Minimum_Amount column with the value 1000 for the customers in branches other than Alappuzha and Malappuram.

d. Find the number of customers who do not have the minimum amount 1000.

e. Remove the details of SB accounts from Thiruvananthapuram branch who have zero (0) balance in their account.

Part III

Practical Evaluation

GUIDELINES FOR LAB WORK AND PRACTICAL EVALUATION OF COMPUTER APPLICATIONS (HUMANITIES)

2014 – 15 Admission onwards

We follow outcome focussed assessment approach in the evaluation process in the Kerala School Curriculum 2013. Term-end Evaluation is an important aspect of assessment. Along with Term-end Evaluation at the end of an academic year, Practical Evaluation (PE) is to be conducted. PE is the term-end assessment of the lab work done in the academic year. Lab work is an integral part of the Continuous and Comprehensive Evaluation (CCE). Hence, it should be considered for the process assessment and portfolio assessment which are the components of Continuous Evaluation (CE) score.

A. Syllabus for Practical

Lab work is a part of the transaction of certain contents in the syllabus. Students can attain the learning outcomes associated with some of the concepts / content only through the lab work. Hence the practical should begin in Class XI itself and it should go on with the respective theoretical aspects. Areas to be covered for the lab work and the minimum number of problems in the three subjects are given below:

1. Office packages (10 problems)

- Spreadsheet (2 problems)
- Presentation software (2 problems)
- Image editing (2 problems)

- Word processing including table, mail merge, indexing, table of contents (4 problems)

2. Web applications (10 problems)

- Basic tags in HTML (1 problem)
- Inserting image (1 problem)
- Lists (2 problems)
- Hyper linking (1 problem)
- Table (1 problem)
- Frame (1 problem)
- Form (1 problem)
- CSS (2 problems)

3. Database queries using MySQL (5 problems)

- Five tables should be identified and queries should be designed in such a way that all clauses, operators and aggregate functions are to be covered.

B. Lab Work

This is an activity by which, the concepts acquired and observations noted are practically implemented in the lab, and thereby, more clarity about the concepts and operational skills are achieved. The students should also be convinced about the use of computer for problem solving with the help of user developed programs. This activity makes the students utilise the computer to develop applications in various fields. The active participation and involvement of the students are to be ensured.

A minimum of 25 problems, as specified above, are to be solved through the lab work. Sample questions from each area are given as Appendix-1 of this document. The questions are grouped into three levelsfor each area, based on the difficulty level. While selecting the minimum required questions, we should ensure that, questions are chosen from all the three levels. The number of questions from each level should be in the ratio 5:3:2 for each area of the syllabus. A sample list of 25 problems as per the foresaid criteria is given as Appendix-2.

Practical Log Book

Practical Log Book (PLB) is a standard record book in which all the activities related to lab work are recorded. A PLB is opened in Class XI

for the lab work and the same is used in Class XII. Lab work is a continuous process. The PLB should contain a minimum of 25 works as specified in the practical syllabus. The format of recording in Practical Log Book may be as follows:

Office Packages

LHS page	RHS page
• Print out of final product • Name of file and folder	• Problem number and Date of practical work • Procedure in steps • Menus/Commands/Tools used

Web Applications (HTML documents, CSS)

LHS page	RHS page
• Tags and attributes required • Printout of resultant web page	• Problem number and Date of practical work • Problem statement • HTML Code

Database queries using MySQL

LHS page	RHS page
• Table with sample records • Output of querieso	• Problem number and Date of practical work • Table structure and queries • SQL statements

The teacher should verify the correctness of each work and affix his/her signature along with date and remarks, if any.

Procedure

The lab work consists of threefold procedure - preparatory work, tryout and reporting. Teachers should ensure that the students pass through all these three stages sequentially throughout the academic year.

Preparatory work: The student who comes to the computer lab to do practical work should be clear about the work he/she intends to do. He/She should also know the steps for doing the job using a computer, the software to be used, how it has to be operated, what the product should be, what should be its specifications and program code. All students

should have their Practical Log Book while attending the lab period with the following details:

- Program number and date
- Problem statement
- Menus and commands /Tags and attributes
- Procedure / HTML code / SQL statements

Tryout: In the case of web applications, the html code is typed and executed in the lab. During the debugging process, the corrections, if any, are noted down in the PLB also. When the output is obtained, it should be intimated to the teacher. Teacher performs process assessment and makes necessary recordings in both the PLB and Teacher's manual. Students record sample output in the PLB or take the printout of the output.

Reporting: The PLB with the final code and sample output (pasted printout in the case of web applications and office packages) is submitted and get it signed by the teacher before the next lab period.

The programs discussed in the class room are to be tried out in the lab. More problems are also available in the text book. Teacher is expected to ensure a minimum number of problems in the Practical Log Book covering all the areas suggested for practical evaluation. The prescribed proportion among the three groups should be strictly followed in the selection of questions.

C. Practical Evaluation (PE)

The problem solving skills and the competency in using various software packages are to be assessed through PE. The following are the guidelines to be followed while conducting PE:

- The questions should strictly be from the prescribed syllabus.
- Examination will be of 3 hours duration and maximum score will be 40.
- Practical evaluation will be conducted in batches. The maximum number of students in each batch is limited to 15.
- Students must attend the PE with Practical Log Book. It should contain a minimum of 25 programs covering the practical syllabus as described earlier. Only one notebook is enough for the Practical Log Book (no rough - fair separation). Practical Log Book should be certified at the end of Class XI as well as Class XII by the teacher-in-charge. The same should be verified and signed by the external examiner.

- The questions are to be finalised from the pool issued by the DHSE referring to the PLB.
- There will be three parts in the question paper. Part A contains questions from Office packages in the case of Computer Applications (Humanities). Part B contains questions for web applications from the respective syllabus and Part C includes questions for database queries. A candidate has to attend two questions - one from Part A and the other from either Part B or C whichever is assigned.
- There should be a minimum of 16 question papers for each batch of 15 students. Each question paper should contain a question from Part A and another Question from Part B or C. While framing questions for each Question paper, it should be noted that if the question from Part A requires more time due to its higher level, the second question from Part B or C should be of lower level and vice versa.
- One question paper will be selected by the student at random from a set of 16 Question papers. Appropriate strategy may be adopted by the examiner to ensure the fair conduct of examination.
- Once the learner is assigned the questions, he/she should write the source code/procedure/statements for any one of the questions and submit it to the examiner. The examiner checks the correctness of the logic or procedure and allows doing it on the computer if found correct. If the logic or procedure is approximately 70% correct, some clues or hints may be given and the student is allowed to try on the computer. If the logic (or procedure) is wrong, the examiner can give another problem from the same area with the same level. The student may be allowed to change the question within half an hour, if the question is found unanswerable. In such cases, score should be deducted appropriately.
- The debugging skills are to be assessed and credit should be given.
- The accuracy in the output is to be tested with proper sample data.
- The score distribution for each question in C++ should be as follows:

The score distribution for each question in C++ should be as follows:

- Logic of the solution (Program coding) – 8 score
- Debugging skills (Error correction and execution) – 6 score
- Dynamic problem solving skills – 2 score

} *16 score*

The score distribution for each question in web application should be as follows:

- Proper tags and attributes (Script if required) – 8 score
- Debugging skills (Error correction and execution) – 6 score
- Dynamic problem solving skills – 2 score

} *16 score*

The score distribution for each question in SQL should be as follows:

- Proper commands, clauses, operators, etc. – 8 score
- Debugging skills (Error correction and execution) – 6 score
- Dynamic problem solving skills – 2 score

} *16 score*

The score distribution for each question in Office packages should be as follows:

- Procedure / Formula / Menus & Commands / Tools – 10 score
- Creativity and formatting ability – 4 score
- Dynamic skill in using the software – 2 score

} *16 score*

Total score for 2 questions – 32 score
Practical Log Book – 4 score
Viva voce – 4 score

} ***40 score***

- Viva voce should not create sense of fear among the students. It should not be formal in the form of an interview. It should be a casual interaction with the students during the evaluation to check whether he / she has conceptual / process clarity in the given two questions only. The examiner may ask 4 to 6 questions to award the scores for viva voce.
- The mark-list of the students should be prepared, reflecting the split scores along with the total score.
- The scores of the students are to be recorded in the mark sheet issued by the DHSE and send it to the DHSE as per the instructions given by the directorate.

Dynamic problem solving skills may be tested as follows:

- After completing the program, a slight modification in the problem can be made and let the learner modify the code to effect the change.
- The ability of the learner can be credited by awarding the 2 scores suitably.
- E.g.: If the original question is to find the largest among three numbers, ask to modify the code to find the smallest.

Sl. No.	Register Number	Qn. No.	Score Distribution						Total Score (40)
			Logic / Procedure (8 or 10)	Execution/ Output (6 or 4)	Dynamic Skills (2)	Total for 2 Qns. (32)	Practical Log Book (4)	ViVa Voice (4)	
1									
2									
3									
15									

Date of Exam: .....

Signature: .....

Name and Designation of Examiner

.....

.....

APPENDIX – 1

Pool of Questions
Office Packages (10 x 3 = 30 questions)

(Spreadsheet - 2, Presentation - 2, Image Editing - 2, Word processing- 4)

Level 1

1. Prepare an examination time table using Spreadsheet software as given below:

Date	Subject	Time	Venue
12/8/2015	English	10:00 - 11:00	Library hall
13/8/2015	Sec. Lang.	10:00 - 11:00	Auditorium
14/8/2015	Political Science	10:00 - 11:00	Audio-Visual room
15/8/2015	Gandhian Studies	10:00 - 11:00	Library hall
16/8/2015	Comp. Appln.	10:00 - 11:00	Computer Lab

   a. Save the file with name 'EXAM'.
   b. Bold face all column titles.
   c. Make the contents of the entire cell Italic.
   d. Change the row height to 20.
   e. Increase the column width of the table to fit the contents of the cells in a single line.
   f. Insert a new column with column title 'Sl.No.' as the first column.
   g. Save the worksheet again.

2. Create the following sales bill using worksheet software:

ABC Sales Emporium			
	Sales Bill	Date:	
		Unit Price	
Sl.No.	Items Name	Rs.	Ps.
1	Book	25	00
2	Pen	15	50
3	Paper	30	00
	Total Amount	70	50

a. Save the file as 'BILL'.
b. Bold face all the contents of the bill.
c. Increase the font size of entire contents to 13.
d. Enter the current date in the place provided at the top right side and format the cell in dd-mmm-yy format.
e. Format the cells containing price in currency format.
f. Save the file again.

3. Open a new presentation file and perform the following activities
   a. In the first slide type the matter "PROTECT OUR ENVIRONMENT".
   b. Bold face the matter and change size to 16.
   c. Insert a picture (provided) as the back ground.
   d. Duplicate the slide.
   e. Change the content to "PLANT MORE TREES".
   f. Insert a video file (provided).
   g. Save the file.

4. Create a new presentation file and perform the following tasks:
   a. Insert the following content in the first slide

TOURIST SPOTS IN KERALA
• Munnar
• Kovalam
• Ponmudi
• Thekkady

   a. Change the background colour of the slide
   b. Insert a new slide and insert an image of Kerala state (provided).
   c. Insert a note to the slide as God's Own Country.
   d. Save the file.

5. Open a file in GIMP. Create the picture of Indian national flag. Save the file with name 'INDIA.XCF'. Export it to 'jpg' format.

6. You are supplied with the image of a car (car.jpg). Open the file in GIMP and perform the following operations:

a. Rotate the picture to 40 degrees.
b. Flip the picture
c. Shear the picture.
d. Save the picture after each activity with different names.

7. Using the word processor (LibreOffice Writer), create a leave letter addressed to your class teacher, requesting for one day leave. Perform the following activities also in the same document
   a. Save the file as 'Leave.odt'.
   b. Bold face the 'From' and 'To' addresses appearing in the document.
   c. Change the font size of above addresses to 12.
   d. Make the body of the letter justify within left and right margins.
   e. Change the line spacing of the body of the letter to double and font size 11.
   f. Right align the name and signature at the end of the document.
   g. Save the file again.
8. Prepare your class time table using Writer.
   a. Save the document with name 'Timetable.odt'.
   b. Bold face the contents.
   c. Change the column width so as to adjust the contents of the cell.
   d. Format the table using an attractive predefined format.
   e. Insert a new row at the top of the table and enter the title 'TIME TABLE'.
   f. Insert a column after the fifth period and enter the content as 'LUNCH BREAK'.
   g. Save the file with new name 'TIME TABLE'.
9. Prepare the following table using Writer:

Section		**Male**	**Female**	**Total**
UP		7	10	17
HS		12	17	29
HSS	Science	3	7	10
	Commerce	2	3	5
	Humanities	2	1	3
	Languages	7	8	15
Total		**33**	**46**	**79**

a. Save the file as 'STAFF.ODT'.

b. Format the table using an attractive pre-defined format.

c. Insert a row immediately after the header row and store the details of LP section.

10. Open a new document in Writer. Type the following matter and do the given tasks:

MICROCOMPUTERS

The Microcomputer has the lowest level capacity. The machine has memories that are generally made of semiconductors fabricated on silicon chips. Large-scale production of silicon chips began in 1971 and this has been of great use in the production of microcomputers. The microcomputer is a digital computer system that is controlled by a stored program that uses a microprocessor, a programmable ROM and a RAM. The ROM defines the instructions to be executed by the computer while RAM is the functional equivalent of computer memory.

a. Save the file with name 'COMPUTER'.

b. Centralise the heading 'MICROCOMPUTER'.

c. Change the font face of the paragraph to 'Times New Roman' and font size to 14.

d. Bold face and underline the paragraph heading.

e. Change the colour of the heading text to Green and paragraph text to Blue.

f. Copy the first sentence of the paragraph and place it at the end.

g. Change the line spacing of the paragraph to double spacing and justify the paragraph.

h. Save the document.

Level 2

1. Create the sales bill given above (Question 2 - Level 1) using spreadsheet software and do the following tasks:

a. Save the file with name 'SALES'

b. Add two more sample data in the bill.

c. Add two new columns with column header 'Discount'.

d. Enter the Discount percentage in a separate cell in the worksheet.

e. Calculate Discount for all products based on Unit Price (Rs. part only).

(Hint: Use absolute referencing to the cells containing the Discount percentage.)

f. Add a new column with column header 'Net Price'.

g. Calculate Net Price for all products (Net Price= Unit Price – Discount).

h. Calculate the total bill amount.

i. Save the file with name 'SALES'.

2. Create a worksheet containing the details of 5 employees in a company with the following fields:

Employee Name, Designation, Basic salary, DA, HRA, Gross Salary, PF, Net Salary

a. Save the file with name 'EMPLOY'.

b. Calculate DA, HRA, Gross Salary, PF and Net Salary for all employees.

c. Find the total salary paid to all employees by the company in a separate cell.

d. Save the file.

Calculations:

DA is 60% of Basic salary, HRA is 5% of Basic salary and PF is 10%.

Gross salary = Basic salary + DA+ HRA

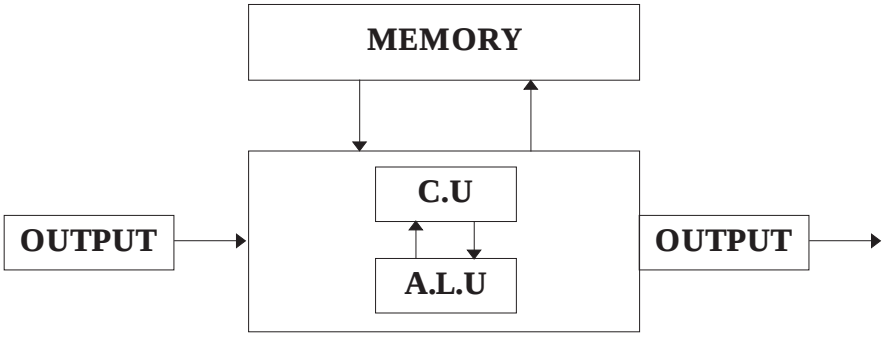
Net salary = Gross salary – PF

3. Open a new presentation file and place the given details in appropriate slide types. Also perform the following activities:

Details:

i. The picture of a computer – provided

ii. Functional units of a computer – block diagram – To be drawn as follows:



iii. Input – Output devices

- Keyboard
- Mouse
- Scanner
- Monitor
- Printer
- Plotter

a. Save the file with name 'COMPUTER'.

b. Add an introductory slide as the first slide of the presentation and a closing slide as the last slide for the presentation.

c. Change the background of each slide.

d. Apply suitable slide transition to each slide.

e. Provide slide transition time to each slide.

f. Save the file.

4. Create a Presentation on the topic Electronic waste with minimum five slides.

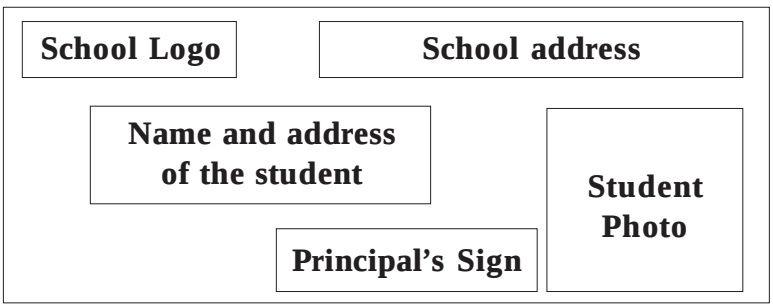
a. Save the file with name 'E-WASTE'.

b. Insert suitable pictures.

c. Set slide transition and slide show timings.

d. Save the file.

5. Design an identity card for your school with school logo, and the photo of the student as given below:



6. Design a sign board (poster) picture to spread the message 'NO SMOKING' on the 'World Tobacco Day'. Save the file with name 'LIFE'.

7. Open a new document and type paragraph given in question 4 of Level 1. Perform the following tasks:
    a. Save the document with name 'MICRO'.
    b. Centralise the heading and make it Bold, Italic & Underlined.
    c. Search the word ROM in the paragraph and replace it with 'Read Only Memory'.
    d. Copy the same format of the paragraph heading to the word RAM in the paragraph using a button present in the toolbar.
    e. Change the left margin of the page to 3 cm and right margin to 2.5 cm. Save the file again.
    f. Apply Drop Caps feature to the paragraph.
    g. Insert a suitable header and footer to the document. Save the file again.

8. You are supplied with a Writer file. Open it. Suppose the underlined words are chapter names in the document. Prepare a Table of Index page with these chapter names. Save the whole document with a new name.

    The major forms of pollution are listed below along with the particular contaminant relevant to each of them. Air pollution is the release of chemicals and particulates into the atmosphere. Common gaseous pollutants include carbon monoxide, sulphur dioxide, chlorofluorocarbons and nitrogen oxides produced by industry and motor vehicles. Light pollution includes light trespass, over-illumination and astronomical interference. Littering is the criminal throwing of inappropriate man-made objects, unresolved, Noise pollution: which encompasses roadway noise, aircraft noise, industrial noise as well as high-intensity sonar. Soil contamination occurs when chemicals are released by spill or underground leakage. Among the most significant contaminants are hydrocarbons, heavy metals, herbicides, pesticides and chlorinated hydrocarbons. Radioactive contamination, resulting from 20th century activities in atomic physics, such as nuclear power generation and nuclear weapons research, manufacture and deployment. Thermal pollution, is a temperature change in natural water bodies caused by human influence, such as use of water as coolant in a power plant.

9. Some data about students are given below. Convert the data directly into tabular form using the word processor.

   ClassNo,Name,Sub1,Sub2,Sub3,Total

   1. Aneesh.50.45.55.150
   2. Parvathi.50.40.50.140
   3. Sreedev.40.30.50.120
   4. Sreedhar.40.40.30.110
   5. Rahul.50.50.40.140

   Hint. The text separator is full stop (.)

   a. Save the file as 'MARKLIST.ODT'.
   b. Insert a new row in between 3rd and 4th row and enter a sample record.
   c. Format the table using an attractive pre-defined format.
   d. Remove the last column of the table.
   e. Remove the 4th row of the table.

10. Create a document with the following matter and perform the following tasks:

    Mathematics is considered as the king of all sciences. The ancient people need to count certain things: cattle, cornstalks, and so on. There is the need to deal with simple geometrical situations in providing shelter and dealing with land. Once some form of writing is added into the mix, mathematics cannot be far behind. It might even be said that the symbolic approach precedes and leads to the invention of writing.

    Some famous mathematicians are listed below:

    Galileo Galilei
    Aristotle
    Charles Babbage
    Pythagoras
    Archimedes
    Leibniz
    Euclid

a. Save the document with name 'MATHS'.

b. Centralise the heading, change the font size 15.

c. Justify the paragraph and change the font to 'Arial'.

d. Apply bullets to the name of scientists.

e. Type the given mathematical equation.

$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

f. Apply page border, change the page size to A4 type and take the print preview.

g. Save the file again.

Level 3

1. Enter the following data using spreadsheet software:

Name	Marks1	Marks2	Marks3	Total	Percentage	Grade
Amit	80	70	80			
Renu	70	60	90			
Rajeev	60	50	80			
Manish	50	30	90			
Sanjeev	40	40	80			
Anita	70	70	90			

Do the following:

a. Save the file with name 'STUDENT'.

b. Compute the total marks and percentage of each student by entering appropriate formula.

c. Compute the grades based on following criteria:

If percentage >= 90 then grade = A

If percentage >= 80 and <90 then grade = B

If percentage >= 70 and <80 then grade = C

If percentage >= 60 and <70 then grade = D

If percentage < 60 then grade = E

2. Create a worksheet as given below and do the following tasks:

Name	Age	Dept	Salary	Can Avail Holidays	Tax	Take Home Income	Grade
Alex	21	Sales	2200				
Ben	22	HR	3210				
Rahul	25	MKT	5210				
Renuka	29	Sales	4521				
Fiaz	22	MKT	1236				
Vrinda	27	HR	2145				
Rizwan	31	HR	3652				

Youngest Employee (Age)	
Eldest Employee (Age)	
Average Salary	
Highest salary taker (Name)	

a. Save the file with name 'SALARY'.

b. Fill in the 5th column of the worksheet with either 'Yes' or 'No' (only Sales Dept. employees can avail holidays).

c. Find the Tax in the 6th column (2% for Age less than 25 otherwise 3%, rounded to next number).

d. Find the Take Home Income in the 7th column for all (Salary – Tax).

i. Find the Grade in the 8th column ('A' for employees in Sales and HR departments having age less than and equal to 26 and 'B' for all other employees)

e. Find the youngest employee (employee with the least age).

f. Find the eldest employee (employee with the highest age).

g. Find the highest salary taker (employee with the highest salary).

h. Find the average Take Home Salary of all employees.

i. Save the file.

3. Create a presentation with 5 slides about your school Annual Day celebrations

a. Save the file with name 'SCHOOL'.

b. Insert pictures, links and tables wherever needed.

c. Insert an audio or video clipping.

d. Save the file.

4. Create a presentation (minimum 5 slides) about various sports / games popular in India.
   a. Save the file with name 'SPORTS'.
   b. Insert suitable pictures.
   c. Set slide transition and slide show timings.
   d. Save the file.
5. You are supplied with images of various modes of environment pollution. Create an attractive collage. Save the file with name 'POLLUTION'.
6. Design the front page of your school magazine. The image should contain the following items
   a. School logo.
   b. An attractive title.
   c. School name and year of release.
   d. An attractive background picture.
   e. Save the file with name 'MAGAZINE'.
7. Open the given Writer file. The underlined words are important in the document. Prepare an index page. Save the whole document with a new name.

   Pollution is the introduction of contaminants into the natural environment that cause adverse change. Pollution can take the form of chemical substances or energy, such as noise, heat or light. Pollutants, the components of pollution, can be either foreign substances / energies or naturally occurring contaminants. Pollution is often classed as point source or nonpoint source. Pollution control is a term used in environmental management. It means the control of emissions and effluents into air, water or soil. Without pollution control, the waste products from consumption, heating, agriculture, mining, manufacturing, transportation and other human activities, whether they accumulate or disperse, will degrade the environment. In the hierarchy of controls, prevention and waste minimization are more desirable than pollution control. In the field of land development, low impact development is a similar technique for the prevention of urban runoff.

8. Create a new Writer document and prepare your own bio-data. Save the file as 'BIODATA'. The bio-data must contain the following:
    a. Name, age, address, phone number, qualifications, hobbies and references.
    b. Insert a photograph at the suitable place.
    c. The qualifications must be typed in a table with suitable rows and columns.
    d. Apply character formatting features to make it attractive.
    e. Apply a stylish border to the page.
    f. Insert header and footer.
    g. Change the page size to A4 type.
    h. Take a print preview.
    i. Save the file.

9. Suppose your school day is planned to be celebrated on the next Monday. Invitation letters are to be sent to the nearby schools addressed to respective principals. The content of the letter is same, but the sending addresses are different. Use the mail merge facility to do the task.

    Sample letter is given below:

From

The Principal,
Name of your school,
Place.

To

Mr /Ms/Mrs .....

Sir/Madam,

Sub – Invitation

This is to inform you that our school anniversary is planned to be conducted on next Friday. You are invited to attend the function.

Yours faithfully

Principal

Place
Date

Sample addresses are listed below:

I. Principal, St. Paul's H.S.S., Attingal

II. Principal, Model H.S.S., Varkala

III. Principal, New H.S.S., Pallickal

IV. Principal, Al-Mina H.S.S., Alamcode

10. A company is conducting an interview for the post of computer operator. The call letter is given below. The addresses of the candidates are also given. Prepare individual call letters to the candidates using mail merge feature of the word processor.

From

The H.R. Manager,
National Computer Centre,
Trivandrum.

To

.....
.....
.....

Dear applicant,
Sub: Interview

This is to inform you that an interview for the post of Computer Operator is going to be conducted on 12-2-2016 at the head office of this company. You are requested to attend the interview without fail. All certificates and experience certificates (if any) are to be brought. No TA/DA will be issued for attending the interview.

With regards

Manager (HR)

Place
Date

Addresses of the candidates

I. Ramesh Kumar, T.C 12/3453, Palayam, Trivandrum

II. Anjana Devi, Kousthoobham, Poojappura, Ernakulam

III. John Britto, Grace Villa, Nalanchira, Kottayam

IV. Mohammed Nihas, Star Manzil, Sreekaryam, Malappuram

Web Applications (10 x 3 = 30 Questions)
(HTML - 8, CSS - 2)

Level 1

1. Design a simple web page for an arts and sports club of your locality. The page should be formatted with background colour, text formatting, font tags, etc.
2. Design a simple and attractive web page for Kerala Tourism. It should contain features like background colour/image, headings, text formatting and font tags, images, etc.
3. Design a web page as shown below using appropriate list tags.

Permanent members in UN Security Council

- Russia
- China
- USA
- UK
- France

4. Design a web page as shown below using appropriate list tags.

Top Arts Colleges in India

1. Lady Shriram College for Women, Delhi
2. Loyola College, Chennai
3. St. Stephen's College, Delhi
4. St. Xavier's College, Mumbai
5. Miranda House, University College for Women, Delhi

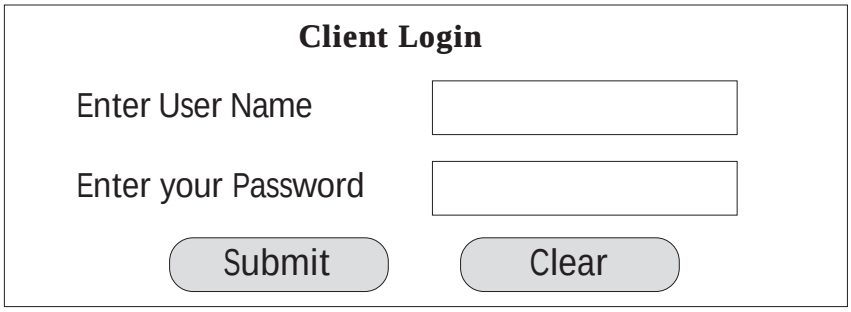
5. Design a personal web page for your friend. It should have a link to his e-mail address.
6. Design a web page containing a table as shown below.

Speed Limits in Kerala

Vehicles	**Near School** ***(In Km/hour)***	**Within Corporation/ Municipality** ***(In Km/hour)***	**In other roads** ***(In Km/hour)***
Motor Cycle	25	40	50
Motor Car	25	40	70
Light motor vehicles	25	40	60
Heavy motor vehicles	15	35	60

7. Design a web page with the heading "Department of Tourism, Government of Kerala" and save it with the file name "TourHead.htm". Create a frame page which divides it horizontally in the ratio 20:80. In the smaller area use the webpage "TourHead.htm". In the larger area use the web page created for Kerala Tourism in Question No. 2.

8. Design a simple web page as shown below:



9. Design a web page that promotes cleanliness in public places. The web pages should contain a description for cleanliness, images and a set of instructions for keeping public places clean. The CSS style rules should be specified as internal style sheet using class selectors. Following are the style rules to be followed.

   Heading : font- Tahoma, size – 18, colour-green, underline

   Paragraphs: font-Garamond, size-12, colour-blue.

   Lists: font-Arial, size-12, colour-brown, italics, line height should be 1.5 lines.

   The paragraphs should have a margin of 30 pixels and background colour yellow.

10. Design a web page that promotes cleanliness in public places. The web pages should contain a description for cleanliness, images and a set of instructions for keeping public places clean. The CSS style rules should be specified as external style sheet using class selectors. Following are the style rules to be followed.

    Heading: font- Tahoma, size – 18, colour-green, underline

    Paragraphs: font- Garamond, size-12, colour-blue.

    Lists: font-Arial, size-12, colour-brown, italics, line height should be 1.5 lines.

The paragraphs should have a margin of 30 pixels and background colour yellow.

Level 2

1. Design a web page containing details about your district. The page should be formatted with background colour, text formatting, font tags, etc.

2. Design a web page for promoting vegetable cultivation at homes as shown in the figure. It should contain features like background colour/ image, headings and stylish fonts, images, marquee, etc.

3. Design a web page 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".

C V 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.

4. Design an attractive web page showing the following list.

Graduate Level Courses in Leading Institutions in Kerala

- Indian Institute of Technology, Palakkad
  - B. Tech.
- National Institute of Technology, Calicut
  - B. Tech.
  - B. Arch.
- Indian Institute of Science Education and Research, Thiruvananthapuram
  - BS-MS Dual Degree
- National University of Advanced Legal Studies, Kochi
  - B.A. LL.B. (Hons.)
- Indian Institute of Space Science and Technology
  - B. Tech. (Aerospace Engineering, Avionics)
  - Dual Degree (B. Tech. + M.S./M. Tech.)

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

6. Design a web page that displays the indent for Plus Two text books as given below.

Section	Book Name	Quantity
Language	English	100
	Malayalam	100
Humanities	Communicative English	80
	Gandhian Studies	90
	Social Work	85
	Computer Applications	100

7. Design a web page 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.

8. Consider that your school is hosting an inter-school IT fair. Design a form web page that contains a form for accepting registrations. The form page should contain facility to enter school name, user name, password and a mobile phone number. It should also contain buttons for saving and clearing the data entered.

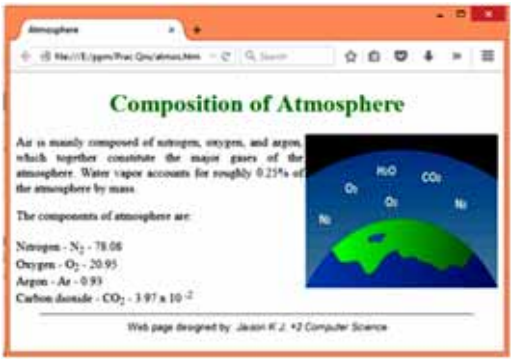
9. Design a web page on *Akshaya Centers* in Kerala. Use an internal style sheet to format the web page. Give suitable font, colour and line spacing for heading and paragraphs using type selector.

10. Design a web page on *Akshaya Centers* in Kerala. Use an external style sheet to format the web page. Give suitable font, colour and line spacing for heading and paragraphs using type selector.

Level 3

1. Design a web page for blood donation campaign. The page should be formatted with background colour, text formatting, font tags, etc.

2. Design a web page about atmosphere as shown in the figure. It should contain features like background colour/ image, headings and stylish fonts, images, etc.



3. Design a web page showing the following:

Road Safety Regulations

- Do's
  1. Use helmet while driving two wheelers
  2. All passengers should use seat belts in four wheelers
  3. Give priority for pedestrians
  4. Keep your license and vehicle records while driving
- Do not's
  a. Do not use mobile phone while driving
  b. Do not drink and drive
  c. Do not overspeed

4. Design a web page 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

5. Design an attractive web page about India. Provide details about the Indian freedom movement at the lower part of the web page. Also create another web page containing the list of states in India, named 'states.htm'. Create two links in the main webpage – one to link to the bottom of the web page where details about freedom movement is given and another to the web page 'states.htm'.

6. Design the following table using HTML.

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

7. Design three web pages – one containing a heading displaying your school name, named 'head.htm'; second web page containing the list of teachers, named 'teachers.htm'; and the third webpage about your school, named 'school.htm'. Create a frame dividing the browser window into two sections horizontally in the ratio 15:85. The top frame should display the web page 'head.htm'. The bottom frame has to be divided into 2 frames vertically in the ratio 30:70. The left part should display the web page 'teachers.htm' and the right part should display the web page 'school.htm'.

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. Design a web page for tourism promotion-Incredible India-and format it using internal style sheet. Class selectors should be used to provide the style rules. Give suitable background colour, font, margins and font colour for the whole page. The popular tourist destinations should be given in brown colour, using Tahoma font and in bold.

10. Design a web page for tourism promotion-Incredible India-and format it using external style sheet. Class selectors should be used to provide the style rules. Give suitable background colour, font, margins and font colour for the whole page. The popular tourist destinations should be given in brown colour, using Tahoma font and in bold.

SQL (5 x 3 = 15 Questions)

Level 1

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	Decimal (10,2)	
DA	Decimal (10,2)	
Gross_pay	Decimal (10,2)	

   a) Update DA with 75% of Basic.

   b) Display the details of employees in Purchase, Sales and HR departments.

   c) Update the Gross_pay with the sum of Basic 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 a 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 on 31/3/2016.

b. Display the item names with stock zero.

c. Remove the items which expire on 31/12/2015.

d. Increase the unit price of all items by 10%.

e. List the items manufactured by "ABC & Co" with quantity above 100.

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. 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 with the title containing the word "Programming" at the end.

e. Remove all the books written by "Balaguruswamy".

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 of customers in Thrissur branch having a minimum balance of Rs. 5000.

e. Delete all the current accounts in Mahe branch.

Level 2

1. Use *Student* table 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 students 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.
2. Use *Employee* table and write SQL statements for the following:
   a. Update DA with 75% of Basic for Managers and 80% Basic for all other employees.
   b. Update the Gross_pay with the sum of Basic and DA
   c. Display the details of employees in Purchase, Sales and HR departments in descending order of Gross pay.
   d. Find the number of employees in Accounts department.
   e. Delete the details of clerks whose Gross pay is below 5000.

3. Use *Stock* table and write SQL statements for the following:
    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 31/12/2015 and 01/06/2016.
    d. Add a new column named 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. Use *Book* table and write SQL statements for the following:
    a. Insert a column named Number_of_pages into the table.
    b. Display the details of books of the same author together in the descending order of the price published by NCERT.
    c. Display the average price of books published by "BPB" and written by "Robert Lafore".
    d. List the details of books published by "PHI" that contains the word "Programming" in the title.
    e. Remove all the books written by "Balaguruswamy", "Kanetkar" or "Robert Lafore".
5. Use *Bank* table and write SQL statements for the following:
    a. Display the branch-wise details of account holders in the ascending order of the amount.
    b. Insert a new column named Minimum_Amount into the table with default value 1000.
    c. Update the Minimum_Amount column with the value 1000 for the customers in branches other than Alappuzha and Malappuram.
    d. Find the number of customers who do not have the minimum amount 1000.
    e. Remove the details of SB accounts from Thiruvananthapuram branch who have zero (0) balance in their account.

Level 3

1. Use *Student* table and write SQL statements for the following:
    a. Update the column Total with the sum of Mark1, Mark2 and Mark3.
    b. Add a new column Average to the table Student.
    c. Update the column Average with average marks.
    d. List the details of student who has the highest Total.
    e. Delete the students of Commerce batch who failed in any two subjects.
2. Use *Employee* table and write SQL statements for the following:
    a. Update DA with 75% of Basic for Managers and 80% of Basic for all other employees.
    b. Update the Gross_pay with the sum of Basic and DA.
    c. Display name, department and gross pay of employees in Purchase, Sales and HR departments. The employees in the same department should appear together in the ascending order of Gross pay.
    d. Find the number of employees in each department where there is minimum of 5 employees.
    e. Show the details of employee with Gross pay greater than the average gross pay.
3. Use *Stock* table and write SQL statements for the following:
    a. Display the number of items manufactured by each company which expire after 31/3/2016.
    b. Add a new column Reorder in the table to store the reorder level of items.
    c. Update the column Reorder with value obtained by deducting 10% of the current stock.
    d. Display the details of items which expire at last.
    e. Remove the items which expire before 01/03/2015 or that are manufactured by "ABC & Co".
4. Use *Book* table and write SQL statements for the following:
    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, current price and the price after a discount of 10% in the alphabetical order of book title.

5. Use *Bank* table and write SQL statements for the following:

a. Display the number and total amount of all the account holders in each branch.

b. Display the number of Savings Bank account holders in each branch.

c. Display the details of customers with the lowest balance amount.

d. Display the branch and number of Current accounts in the descending order of the count.

e. Display the details of customers in Kozhikode branch whose amount is greater the average amount.

APPENDIX – 2

Sample List of Questions for Lab Work

Programming in C++ – 10 Qns. (L1 – 5, L2 – 3, L3 – 2)

1. Prepare an examination time table using Spreadsheet software as given below: (L1)

Date	Subject	Time	Venue
12/8/2015	English	10:00 – 11:00	Library hall
13/8/2015	Sec. Lang.	10:00 – 11:00	Auditorium
14/8/2015	Political Science	10:00 – 11:00	Audio-Visual room
15/8/2015	Gandhian Studies	10:00 – 11:00	Library hall
16/8/2015	Comp. Appln.	10:00 – 11:00	Computer Lab

   a. Save the file with name 'EXAM'.
   b. **Bold** face all column titles.
   c. Make the contents of the entire cell *Italic*.
   d. Change the row height to 20.
   e. Increase the column width of the table to fit the contents of the cells in a single line.
   f. Insert a new column with column title 'Sl.No.' as the first column.
   g. Save the worksheet again.

2. Create a worksheet containing the details of 5 employees in a company with the following fields:

   Employee Name, Designation, Basic salary, DA, HRA, Gross Salary, PF, Net Salary

   a. Save the file with name 'EMPLOY'.
   b. Calculate DA, HRA, Gross Salary, PF and Net Salary for all employees.
   c. Find the total salary paid to all employees by the company in a separate cell.
   d. Save the file.

Calculations:

DA is 60% of Basic salary, HRA is 5% of Basic salary and PF is 10%.

Gross salary = Basic salary + DA+ HRA

Net salary = Gross salary – PF (L2)

3. Open a new presentation file and perform the following activities: (L1)
    a. In the first slide type the matter "PROTECT OUR ENVIRONMENT".
    b. Bold face the matter and change size to 16.
    c. Insert a picture (provided) as the back ground.
    d. Duplicate the slide.
    e. Change the content to "PLANT MORE TREES".
    f. Insert a video file (provided).
    g. Save the file.
4. Create a presentation (minimum 5 slides) about various sports/ games popular in India.
    a. Save the file with name 'SPORTS'.
    b. Insert suitable pictures.
    c. Set slide transition and slide show timings.
    d. Save the file. (L3)
5. Open a file in GIMP. Create the picture of Indian national flag. Save the file with name 'INDIA.XCF'. Export it to 'jpg' format. (L1)
6. Design a sign board (poster) picture to spread the message 'NO SMOKING' on the 'World Tobacco Day'. Save the file with name 'LIFE'. (L2)
7. Using the word processor (LibreOffice Writer), create a leave letter addressed to your class teacher, requesting for one day leave. Perform the following activities also in the same document
    a. Save the file as 'Leave.odt'.
    b. Bold face the 'From' and 'To' addresses appearing in the document.
    c. Change the font size of above addresses to 12.
    d. Make the body of the letter justify within left and right margins.

e. Change the line spacing of the body of the letter to double and font size 11.

f. Right align the name and signature at the end of the document.

g. Save the file again. (L1)

8. You are supplied with a Writer file. Open it. Suppose the underlined words are chapter names in the document. Prepare a Table of Index page with these chapter names. Save the whole document with a new name. (L2)

The major forms of pollution are listed below along with the particular contaminant relevant to each of them. Air pollution is the release of chemicals and particulates into the atmosphere. Common gaseous pollutants include carbon monoxide, sulphur dioxide, chlorofluorocarbons and nitrogen oxides produced by industry and motor vehicles. Light pollution includes light trespass, over-illumination and astronomical interference. Littering is the criminal throwing of inappropriate man-made objects, unresolved, Noise pollution: which encompasses roadway noise, aircraft noise, industrial noise as well as high-intensity sonar. Soil contamination occurs when chemicals are released by spill or underground leakage. Among the most significant contaminants are hydrocarbons, heavy metals, herbicides, pesticides and chlorinated hydrocarbons. Radioactive contamination, resulting from 20th century activities in atomic physics, such as nuclear power generation and nuclear weapons research, manufacture and deployment. Thermal pollution, is a temperature change in natural water bodies caused by human influence, such as use of water as coolant in a power plant.

9. Suppose your school day is planned to be celebrated on the next Monday. Invitation letters are to be sent to the nearby schools addressed to respective principals. The content of the letter is same, but the sending addresses are different. Use the mail merge facility to do the task.

Sample letter is given below:

From

The Principal,
Name of your school,
Place.

To

Mr /Ms/Mrs .....

Sir/Madam,

Sub – Invitation

This is to inform you that our school anniversary is planned to be conducted on next Friday. You are invited to attend the function.

Yours faithfully

Principal

Place
Date

Sample addresses are listed below:

I. Principal, St. Paul's H.S.S., Attingal

II. Principal, Model H.S.S., Varkala

III. Principal, New H.S.S., Pallickal

IV. Principal, Al-Mina H.S.S., Alamcode

10. Open a new document in Writer. Type the following matter and do the given tasks:

MICROCOMPUTERS

The Microcomputer has the lowest level capacity. The machine has memories that are generally made of semiconductors fabricated on silicon chips. Large-scale production of silicon chips began in 1971 and this has been of great use in the production of microcomputers. The microcomputer is a digital computer system that is controlled by a stored program that uses a microprocessor, a programmable ROM and a RAM. The ROM defines the instructions to be executed by the computer while RAM is the functional equivalent of computer memory.

a. Save the file with name 'COMPUTER'.
b. Centralise the heading 'MICROCOMPUTER'.
c. Change the font face of the paragraph to 'Times New Roman' and font size to 14.
d. Bold face and underline the paragraph heading.
e. Change the colour of the heading text to Green and paragraph text to Blue.
f. Copy the first sentence of the paragraph and place it at the end.
g. Change the line spacing of the paragraph to double spacing and justify the paragraph.
h. Save the document.

Web Applications - 10 Qns. (L1 - 5, L2 - 3, L3 - 2)

1. Design a webpage for blood donation campaign. The page should be formatted with background colour, text formatting, font tags, etc. (L3)

2. 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. (L1)

3. Design a webpage as shown below using appropriate list tags. (L2)

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".

C V 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.

4. Design a web page as shown below using appropriate list tags. (L1)

Top Arts Colleges in India

1. Lady Shriram College for Women, Delhi
2. Loyola College, Chennai
3. St. Stephen's College, Delhi
4. St. Xavier's College, Mumbai
5. Miranda House, University College for Women, Delhi

5. 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. (L2)

6. Design the following table using HTML: (L3)

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

7. 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. (L2)

8. Design a simple webpage as shown below: (L1)

Client Login

Enter User Name

Enter your Password

Submit Clear

\

9. Design a webpage that promotes cleanliness in public places. The web pages should contain a description for cleanliness, images and a set of instructions for keeping public places clean. The CSS style rules should be specified as internal style sheet using class selectors.

Following are the style rules to be followed.

Heading : font- Tahoma, size – 18, colour-green, underline

Paragraphs: font-Garamond, size-12, colour-blue.

Lists: font-Arial, size-12, colour-brown, italics, line height should be 1.5 lines.

The paragraphs should have a margin of 30 pixels and background colour yellow. (L1)

10. Design a webpage that promotes cleanliness in public places. The web pages should contain a description for cleanliness, images and a set of instructions for keeping public places clean. The CSS style rules should be specified as external style sheet using class selectors. Following are the style rules to be followed.

    Heading: font- Tahoma, size – 18, colour-green, underline

    Paragraphs: font- Garamond, size-12, colour-blue.

    Lists: font-Arial, size-12, colour-brown, italics, line height should be 1.5 lines.

    The paragraphs should have a margin of 30 pixels and background colour yellow. (L1)

SQL – 5 Qns. (L1 – 2, L2 – 2, L3 – 1)

1. Create a table Student with the following fields and insert at least 5 records into the table except for the column Total. (L1)

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. (L1)

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

a) Update DA with 75% of Basic.

b) Display the details of employees in Purchase, Sales and HR departments.

c) Update the Gross_pay with the sum of Basic 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 a shop, with the following fields and insert at least 10 records into the table. (L2)

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 31/12/2015 and 01/06/2016.

d. Add a new column named 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. (L3)

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

a. 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, current price and the 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. (L2)

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

a. Display the branch-wise details of account holders in the ascending order of the amount.

b. Insert a new column named Minimum_Amount into the table with default value 1000.

c. Update the Minimum_Amount column with the value 1000 for the customers in branches other than Alappuzha and Malappuram.

d. Find the number of customers who do not have the minimum amount 1000.

e. Remove the details of SB accounts from Thiruvananthapuram branch who have zero (0) balance in their account.

Practical Evaluation

GUIDELINES FOR LAB WORK AND PRACTICAL EVALUATION OF COMPUTER APPLICATIONS (COMMERCE)

2014 – 15 Admission onwards

We follow outcome focussed assessment approach in the evaluation process in the Kerala School Curriculum 2013. Term-end evaluation is an important aspect of assessment. Along with Term-end Evaluation at the end of an academic year, Practical Evaluation (PE) is to be conducted. PE is the term-end assessment of the lab work done in the academic year. Lab work is an integral part of the Continuous and Comprehensive Evaluation (CCE). Hence, it should be considered for the process assessment and portfolio assessment which are the components of Continuous Evaluation (CE) score.

A. Syllabus for Practical

Lab work is a part of the transaction of certain contents in the syllabus. Students can attain the learning outcomes associated with some of the concepts / content only through the lab work. Hence the practical should begin in Class XI itself and it should go on with the respective theoretical aspects. Areas to be covered for the lab work and the minimum number of problems are given below:

1. Programming in C++ (10 problems)

- if – else statements (2 problems)
- switch statement (1 problem)
- Looping statements (3 problems)
- Array manipulation (2 problems)
- Functions (2 problem)

2. Developing HTML documents (7 problems)

- Basic tags, <IMG> tag (1 problem)
- Lists (nesting) (1 problems)
- Hyper linking (1 problem)
- Table (2problems)
- Frame (1 problem)
- Form (1 problem)

3. Client side programming with JavaScript (3 problems)

- Control structure (2 problems)
- Data validation (1 problem)

4. Database queries using MySQL (5 problems)

- Five tables should be identified and queries should be designed in such a way that all clauses, operators and aggregate functions are to be covered.

B. Lab Work

This is an activity by which, the concepts acquired and observations noted are practically implemented in the lab, and thereby, more clarity about the concepts and operational skills are achieved. The students should also be convinced about the use of computer for problem solving with the help of user developed programs. This activity makes the students utilise the computer to develop applications in various fields. The active participation and involvement of the students are to be ensured.

A minimum of 25 problems, as specified above, are to be solved through the lab work. Sample questions from each area are given as Appendix-1 of this document. The questions are grouped into three levels for each area, based on the difficulty level. While selecting the minimum required questions, we should ensure that, questions are chosen from all the three levels. The number of questions from each level should be in the ratio 5:3:2 for each area of the syllabus. A sample list of 25 problems as per the foresaid criteria is given as Appendix-2.

Practical Log Book

Practical Log Book (PLB) is a standard record book in which all the activities related to lab work are recorded. A PLB is opened in Class XI for the lab work and the same is used in Class XII. Lab work is a continuous

process. The PLB should contain a minimum of 25 works as specified in the practical syllabus. The format of recording in Practical Log Book may be as follows:

Programming in C++

LHS page	RHS page
• Algorithm / Flowchart • Sample Input and Output	• Problem number and Date of practical work • Problem statement • Source Code

Web Applications (HTML documents, JavaScript)

LHS page	RHS page
• Tags and attributes required • Printout of resultant web page	• Problem number and Date of practical work • Problem statement • HTML Code

Database queries using MySQL

LHS page	RHS page
• Table with sample records • Output of querieso	• Problem number and Date of practical work • Table structure and queries • SQL statements

The teacher should verify the correctness of each work and affix his/her signature along with date and remarks, if any.

Procedure

The lab work consists of threefold procedure – preparatory work, tryout and reporting. Teachers should ensure that the students pass through all these three stages sequentially throughout the academic year.

Preparatory work: The student who comes to the computer lab to do practical work should be clear about the work he/she intends to do. He/She should also know the steps for doing the job using a computer, the software to be used, how it has to be operated, what the product should be, what should be its specifications and program code. All students should have their Practical Log Book while attending the lab period with the following details:

- Program number and date
- Problem statement
- Algorithm / Flowchart / Tags and attributes
- C++ source code/ HTML code / SQL statements

Tryout: In the case of C++ programming and web applications, the source code is typed, compiled and executed in the lab. During the debugging process, the corrections, if any, are noted down in the PLB also. When the output is obtained, it should be intimated to the teacher. Teacher performs process assessment and makes necessary recordings in both the PLB and Teacher's manual. Students record sample output in the PLB or take the printout of the output.

Reporting: The PLB with the final code and sample output (pasted printout in the case of web applications and office packages) is submitted and get it signed by the teacher before the next lab period.

The programs discussed in the class room are to be tried out in the lab. More problems are also available in the text book. Teacher is expected to ensure a minimum number of problems in the Practical Log Book covering all the areas suggested for practical evaluation. The prescribed proportion among the three groups should be strictly followed in the selection of questions.

C. Practical Evaluation (PE)

The problem solving skills and the competency in using various software packages are to be assessed through PE. The following are the guidelines to be followed while conducting PE:

- The questions should strictly be from the prescribed syllabus.
- Examination will be of 3 hours duration and maximum score will be 40.
- Practical evaluation will be conducted in batches. The maximum number of students in each batch is limited to 15.
- Students must attend the PE with Practical Log Book. It should contain a minimum of 25 programs covering the practical syllabus as described earlier. Only one notebook is enough for the Practical Log Book (*no rough – fair separation*). Practical Log Book should be certified at the end of Class XI as well as Class XII by the teacher-in-charge. The same should be verified and signed by the external examiner.

- The questions are to be finalised from the pool issued by the DHSE referring to the PLB.
- There will be three parts in the question paper. Part A contains questions from Programming in C++. Part B contains questions for web applications from the respective syllabus and Part C includes questions for database queries. A candidate has to attend two questions – one from Part A and the other from either Part B or C whichever is assigned.
- There should be a minimum of 16 question papers for each batch of 15 students. Each Question paper should contain a question from Part A and another Question from Part B or C. While framing questions for each question paper, it should be noted that if the question from Part A requires more time due to its higher level, the second question from Part B or C should be of lower level and vice versa.
- One question paper will be selected by the student at random from a set of 16 Question papers. Appropriate strategy may be adopted by the examiner to ensure the fair conduct of examination.
- Once the learner is assigned the questions, he/she should write the source code/ procedure/statements for any one of the questions and submit it to the examiner. The examiner checks the correctness of the logic or procedure and allows doing it on the computer if found correct. If the logic or procedure is approximately 70% correct, some clues or hints may be given and the student is allowed to try on the computer. If the logic (or procedure) is wrong, the examiner can give another problem from the same area with the same level. The student may be allowed to change the question within half an hour, if the question is found unanswerable. In such cases, score should be deducted appropriately.
- The debugging skills are to be assessed and credit should be given.
- The accuracy in the output is to be tested with proper sample data.
- Teacher should ensure that the programs developed as part of lab work and by the previous candidates are deleted before the commencement of the examination.
- The students are not allowed to use the help files of the software.

The score distribution for each question in C++ should be as follows:

- Logic of the solution (Program coding) – 8 score
- Debugging skills (Error correction and execution) – 6 score
- Dynamic problem solving skills – 2 score

} *16 score*

The score distribution for each question in web application should be as follows:

- Proper tags and attributes (Script if required) – 8 score
- Debugging skills (Error correction and execution) – 6 score
- Dynamic problem solving skills – 2 score

} *16 score*

The score distribution for each question in SQL should be as follows:

- Proper commands, clauses, operators, etc. – 8 score
- Debugging skills (Error correction and execution) – 6 score
- Dynamic problem solving skills – 2 score

} *16 score*

The score distribution for each question in Office packages should be as follows:

- Procedure / Formula / Menus & Commands / Tools – 10 score
- Creativity and formatting ability – 4 score
- Dynamic skill in using the software – 2 score

} *16 score*

Total score for 2 questions – 32 score
Practical Log Book – 4 score
Viva voce – 4 score

} ***40 score***

- Viva voce should not create sense of fear among the students. It should not be formal in the form of an interview. It should be a casual interaction with the students during the evaluation to check whether he / she has conceptual / process clarity in the given two questions only. The examiner may ask 4 to 6 questions to award the scores for viva voce.
- The mark-list of the students should be prepared, reflecting the split scores along with the total score.
- The scores of the students are to be recorded in the mark sheet issued by the DHSE and send it to the DHSE as per the instructions given by the directorate.

Dynamic problem solving skills may be tested as follows:

- After completing the program, a slight modification in the problem can be made and let the learner modify the code to effect the change.
- The ability of the learner can be credited by awarding the 2 scores suitably.
- E.g.: If the original question is to find the largest among three numbers, ask to modify the code to find the smallest.

Sl. No.	Register Number	Qn. No.	Score Distribution						Total Score (40)
			Logic / Procedure (8 or 10)	Execution/ Output (6 or 4)	Dynamic Skills (2)	Total for 2 Qns. (32)	Practical Log Book (4)	ViVa Voice (4)	
1									
2									
3									
15									

Date of Exam: .....

Signature: .....

Name and Designation of Examiner

.....

.....

APPENDIX – 1

Pool of Questions
Programming in C++ (10 x 3 = 30 questions)

Level 1

1. Input a number and check whether it is positive, negative or zero.
2. Input three numbers and find the largest.
3. Input a digit and display the corresponding word using switch.
4. Find the sum of the digits of an integer number.
5. Display the multiplication table of a number having 12 rows.
6. Find the sum of the squares of the first N natural numbers without using any formula.
7. Find the length of a string without using strlen() function.
8. Input the heights of 10 students and find the average height.
9. Find the factorial of a number with the help of a user-defined function.
10. Read admission number, name and marks of three subjects of a student. Define a function named calc() to calculate average mark.

Level 2

1. Input three numbers and find the difference between the smallest and the largest numbers.
2. Input the principal amount, type of account (C for current a/c or S for SB a/c) and number of years, and display the amount of interest. Rate of interest for current a/c is 8.5% and that of SB a/c is 6.5%.
3. Assume that January 1 is Monday. Write a program using switch to display the name of the day when we input a day number in that month.
4. Input a number and check whether it is palindrome or not.
5. Write a C++ program to display the following patters:

```
* *    *    *    *
* *    *    *
* *    *
* *
*
```

6. Input a number and check whether it is prime or not.
7. Create an array of N numbers and count the number of even numbers and odd numbers in the array.
8. Input the price of a set of higher secondary textbooks and find the highest and lowest prices.
9. Input an integer number and display its binary equivalent with the help of a user-defined function.
10. Define a function to swap the contents of two variables. Using this function, interchange the values of three variables. E.g. A→B→C→A.

Level 3

Units consumed	Amount per Unit
Up to 100	Rs. 0.50/-
101 – 150	Rs. 0.75/-
151 – 200	Rs. 1.00/-
201 – 250	Rs. 1.50/-
Above 250	Rs. 2.00/-

1. Find the amount to be paid for the consumption of electricity when the previous and current meter-readings are given as input based on the conditions given in the table.
2. Input three numbers and find the smallest and the second smallest.
3. Find the area of a rectangle, a circle and a triangle. Use switch statement for selecting an option from a menu.
4. Display the first N terms of Fibonacci series.
5. Input two years (e.g. 1000, 2000) and display all leap years in between them.
6. Input the amount of sales for 12 months of a medical representative and find the average sales value without using an array.
7. Input a string and create a triangle using its characters as shown in the given example.

```
S
S M
S M I
S M I L
S M I L E
```

8. Read N numbers into an array and display the numbers larger than the average value.
9. Define separate functions to return simple interest and compound interest by accepting principle amount, time and rate of interest as arguments.
10. Define a function to accept an integer number and return its reverse (e.g. if the argument is 123 the return-value should be 321). Using this function display all palindrome numbers between a given range.

Web Applications (10 x 3 = 30 Questions)
(HTML - 7, JavaScript - 3)

Level 1

1. Design a simple and attractive web page 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.

Permanent members in UN Security Council

- Russia
- China
- USA
- UK
- France

3. Design a personal web page for your friend. It should have a link to his e-mail address.

4. 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

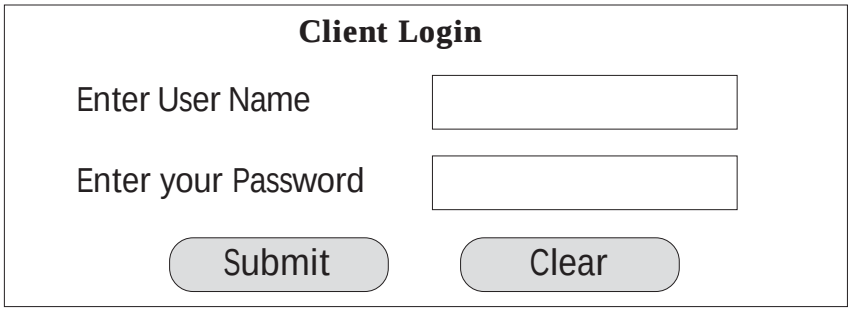
5. Design a web page containing a table as shown below.

Speed Limits in Kerala

Vehicles	**Near School** ***(In Km/hour)***	**Within Corporation/ Municipality** ***(In Km/hour)***	**In other roads** ***(In Km/hour)***
Motor Cycle	25	40	50
Motor Car	25	40	70
Light motor vehicles	25	40	60
Heavy motor vehicles	15	35	60

6. Design a web page with the heading "Department of Tourism, Government of Kerala" and save it with the file name "TourHead.htm". Create a frame page which divides it horizontally in the ratio 20:80. In the smaller area use the web page "TourHead.htm". In the larger area use the web page created for Kerala Tourism in Question No. 1.

7. Design a simple web page as shown below:



8. Develop a web page with two text boxes and a button labelled "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.

9. Develop a web page 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 sum of all numbers up to the given number. Write the required JavaScript.

10. A web page 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.

Level 2

1. Design a web page for promoting vegetable cultivation at homes as shown in the figure. It should contain features like background colour/ image, headings and stylish fonts, images, marquee, etc.

2. Design a web page 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".

C V 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 web page about your school. Create another web page named address.htm containing the school address. Give links from school page to address.htm.

4. Design a web page that displays the share prices of various companies as given below.

National Stock Exchange – Market on 13th June 2015

Sector	Company	Price (Rs.)
IT	Infosys	1978.05
	TCS	2520.00
Banking	ICICI Bank	296.15
	Axis Bank	551.90
Pharmaceuticals	Sun Pharma	814.90
	Aurobindo Pharma	1279.00

5. Design a web page that displays the indent for Plus Two text books as given below.

Section	Book Name	Quantity
Language	English	100
	Malayalam	100
Commerce	Accountancy	80
	Business Studies	90
	Economics	85
	Computer Applications	100

6. Design a web page 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.

7. Consider that your school is hosting an inter-school IT fair. Design a form web page that contains a form for accepting registrations. The form page should contain facility to enter school name, user name, password and a mobile phone number. It should also contain buttons for saving and clearing the data entered.

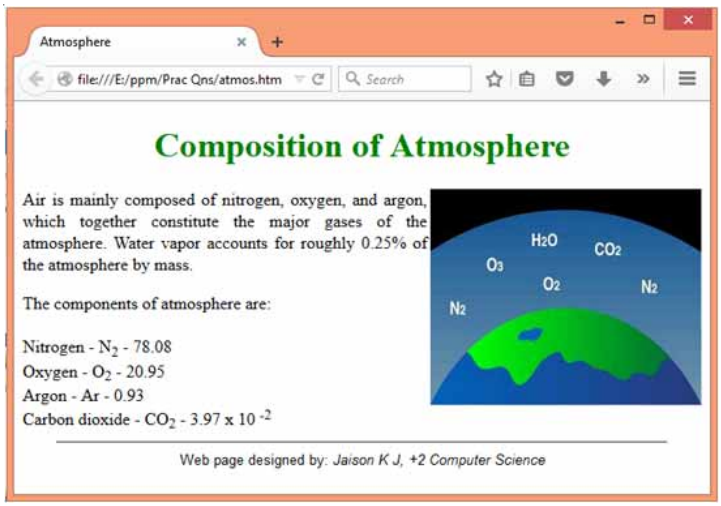
8. Develop a simple calculator using JavaScript. The web page should contain two text boxes of entering two numbers and another text box for displaying the answer. There should be four buttons to perform addition, subtraction, multiplication and division. On clicking a button, the corresponding result should be displayed in the answer box. Write the required JavaScript.

9. Develop a web page with two text boxes and a button labeled "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. Develop a web page for the inter-school IT fair conducted by your school. The web page should contain facility to enter school name, user name, password and a mobile phone number. It should also contain buttons for saving and clearing the data entered. Ensure that the data is entered in all the text boxes and the text box for mobile phone number contains only numbers. Write JavaScript for this validation.

Level 3

1. Design a web page about atmosphere as shown below. It should contain features like background colour / image, headings and stylish fonts, images, etc.



2. Design a web page 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

3. Design an attractive web page about India. Provide details about the Indian freedom movement at the lower part of the web page. Also create another web page containing the list of states in India, named

'states.htm'. Create two links in the main web page – one to link to the bottom of the web page where details about freedom movement is given and another to the web page 'states.htm'.

4. Design the following table using HTML.

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

5. Design the following catalogue of products for an IT shop using HTML.

Laser Printer	
	Model: Canon LBP 2900 Price: Rs. 6500
Scanner	
	Model: HP Scanjet G2410 Price: Rs. 3800
Monitor	
	Model: LG 22MP67VQ Price: Rs. 10500
Keyboard & Mouse Combo	
	Model: Logitech MK200 USB Price: Rs. 950

6. Design an HTML form to accept the Curriculum Vitae 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.

7. Design three web pages - one containing a heading displaying your school name, named 'head.htm'; second web page containing the list of teachers, named 'teachers.htm'; and the third webpage about your school, named 'school.htm'. Create a frame dividing the browser window into two sections horizontally in the ratio 15:85. The top frame should display the web page 'head.htm'. The bottom frame has to be divided into 2 frames vertically in the ratio 30:70. The left part should display the web page 'teachers.htm' and the right part should display the web page 'school.htm'.

8. Develop a web page to find the capital of Indian States. The page should contain a dropdown list from which the user can select a state. On clicking the show button, the web page should display the capital of the state in another text box. Write the required JavaScript.

9. Develop a web page 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 whether the number is prime or not. Write the required JavaScript.

10. Develop a web page containing a two text boxes for entering User name and Password. There should be a login button also. On clicking the login button, it should check the followings:
    a) The user name should contain at least 10 characters and all the letters should be in lower cases.
    b) The password should contain at least 7 characters and should contain at least one lower case letter, one upper case letter and a digit.

SQL (5 x 3 = 15 Questions)

Level 1

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	Decimal (10,2)	
DA	Decimal (10,2)	
Gross_pay	Decimal (10,2)	

   a) Update DA with 75% of Basic.

   b) Display the details of employees in Purchase, Sales and HR departments.

   c) Update the Gross_pay with the sum of Basic 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 a 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 on 31/3/2016.
   b. Display the item names with stock zero.
   c. Remove the items which expire on 31/12/2015.
   d. Increase the unit price of all items by 10%.
   e. List the items manufactured by "ABC & Co" with quantity above 100.

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. 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 with the title containing the word "Programming" at the end.
   e. Remove all the books written by "Balaguruswamy".

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 of customers in Thrissur branch having a minimum balance of Rs. 5000.
e. Delete all the current accounts in Mahe branch.

Level 2

1. Use Student table 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 students 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.
2. Use Employee table and write SQL statements for the following:
   a. Update DA with 75% of Basic for Managers and 80% Basic for all other employees.
   b. Update the Gross_pay with the sum of Basic and DA
   c. Display the details of employees in Purchase, Sales and HR departments in descending order of Gross pay.
   d. Find the number of employees in Accounts department.
   e. Delete the details of clerks whose Gross pay is below 5000.
3. Use Stock table and write SQL statements for the following:
   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 31/12/2015 and 01/06/2016.
   d. Add a new column named 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. Use Book table and write SQL statements for the following:
   a. Insert a column named Number_of_pages into the table.
   b. Display the details of books of the same author together in the descending order of the price published by NCERT.
   c. Display the average price of books published by "BPB" and written by "Robert Lafore".
   d. List the details of books published by "PHI" that contains the word "Programming" in the title.
   e. Remove all the books written by "Balaguruswamy", "Kanetkar" or "Robert Lafore".

5. Use Bank table and write SQL statements for the following:
   a. Display the branch-wise details of account holders in the ascending order of the amount.
   b. Insert a new column named Minimum_Amount into the table with default value 1000.
   c. Update the Minimum_Amount column with the value 1000 for the customers in branches other than Alappuzha and Malappuram.
   d. Find the number of customers who do not have the minimum amount 1000.
   e. Remove the details of SB accounts from Thiruvananthapuram branch who have zero (0) balance in their account.

Level 3

1. Use Student table and write SQL statements for the following:
   a. Update the column Total with the sum of Mark1, Mark2 and Mark3.
   b. Add a new column Average to the table Student.
   c. Update the column Average with average marks.
   d. List the details of student who has the highest Total.
   e. Delete the students of Commerce batch who failed in any two subjects.

2. Use Employee table and write SQL statements for the following:
   a. Update DA with 75% of Basic for Managers and 80% of Basic for all other employees.

b. Update the Gross_pay with the sum of Basic and DA.
c. Display name, department and gross pay of employees in Purchase, Sales and HR departments. The employees in the same department should appear together in the ascending order of Gross pay.
d. Find the number of employees in each department where there is minimum of 5 employees.
e. Show the details of employee with Gross pay greater than the average gross pay.

3. Use Stock table and write SQL statements for the following:
   a. Display the number of items manufactured by each company which expire after 31/3/2016.
   b. Add a new column Reorder in the table to store the reorder level of items.
   c. Update the column Reorder with value obtained by deducting 10% of the current stock.
   d. Display the details of items which expire at last.
   e. Remove the items which expire before 01/03/2015 or that are manufactured by "ABC & Co".

4. Use Book table and write SQL statements for the following:
   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, current price and the price after a discount of 10% in the alphabetical order of book title.

5. Use Bank table and write SQL statements for the following:
   a. Display the number and total amount of all the account holders in each branch.
   b. Display the number of Savings Bank account holders in each branch.
   c. Display the details of customers with the lowest balance amount.
   d. Display the branch and number of Current accounts in the descending order of the count.
   e. Display the details of customers in Kozhikode branch whose amount is greater the average amount.

APPENDIX – 2

Sample List of Questions for Lab Work
Computer Applications (Commerce)

Programming in C++ – 10 Qns. (L1 – 5, L2 – 3, L3 – 2)

1. Input a number and check whether it is positive, negative or zero. (L1)
2. Input the principal amount, type of account (C for current a/c or S for SB a/c) and number of years, and display the amount of interest. Rate of interest for current a/c is 8.5% and that of SB a/c is 6.5%. (L2)
3. Find the area of a rectangle, a circle and a triangle. Use switch statement for selecting an option from a menu. (L3)
4. Find the sum of the digits of an integer number. (L1)
5. Display the multiplication table of a number having 12 rows. (L1)
6. Find the sum of the squares of the first N natural numbers without using any formula. (L1)
7. Find the length of a string without using strlen() function. (L1)
8. Input the price of a set of higher secondary textbooks and find the highest and lowest prices. (L2)
9. Define separate functions to return simple interest and compound interest by accepting principle amount, time and rate of interest as arguments. (L3)
10. Define a function to swap two variables. Using this function, interchange the values of three variables. E.g. A →B →C→A. (L2)

Web Applications – 10 Qns. (L1 – 5, L2 – 3, L3 – 2)

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. (L1)
2. Design a webpage as shown below using appropriate list tags. (L2)

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".

C V 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. (L2)

4. Design the following table using HTML.

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

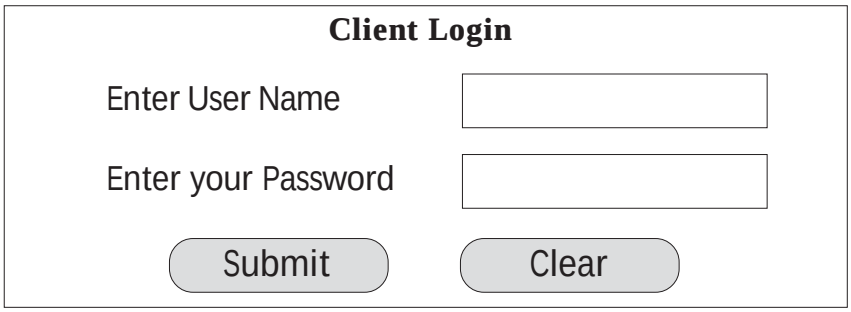
5. Design a web page containing a table as shown below: (L1)

Speed Limits in Kerala

Vehicles	**Near School (In Km/hour)**	**Within Corporation/ Municipality (In Km/hour)**	**In other roads (In Km/hour)**
Motor Cycle	25	40	50
Motor Car	25	40	70
Light motor vehicles	25	40	60
Heavy motor vehicles	15	35	60

6. 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. (L2)

7. Design a simple web page as shown below: (L1)



8. Develop a webpage to find the capital of Indian States. The page should contain a dropdown list from which the user can select a state. On clicking the show button, the web page should display the capital of the state in another text box. Write the required JavaScript. (L3)

9. Develop a webpage with two text boxes and a button labelled "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. (L1)

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. (L1)

SQL – 5 Qns. (L1 – 2, L2 – 2, L3 – 1)

1. Create a table Student with the following fields and insert at least 5 records into the table except for the column Total. (L1)

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. (L1)

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

a) Update DA with 75% of Basic.

b) Display the details of employees in Purchase, Sales and HR departments.

c) Update the Gross_pay with the sum of Basic 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 a shop, with the following fields and insert at least 10 records into the table. (L2)

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 on 31/3/2016.

b. Display the item names with stock zero.

c. Remove the items which expire on 31/12/2015.

d. Increase the unit price of all items by 10%.

e. List the items manufactured by "ABC & Co" with quantity above 100.

4. Create a table Book with the following fields and insert at least 5 records into the table. (L3)

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

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 with the title containing the word "Programming" at the end.

e. Remove all the books written by "Balaguruswamy".

5. Create a table Bank with the following fields and insert at least 5 records into the table. (L2)

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 of customers in Thrissur branch having a minimum balance of Rs. 5000.

e. Delete all the current accounts in Mahe branch.