Generic Electives for Semesters – I & II (2016 – 2017) offered by Department of Computer Science and Applications
Under the Framework of Honors School System
OUTLINES OF TESTS

GENERAL ELECTIVES OFFERED BY
DEPARTMENT OF COMPUTER SCIENCE AND APPLICATIONS
UNDER THE FRAMEWORK OF HONORS SCHOOL SYSTEM
(SEMESTER SYSTEM) EXAMINATION, 2016-2017

OUTLINES OF TESTS

GENERIC ELECTIVE (COMPUTER SCIENCE)

Semester - I

Theory Papers:
Each student from other disciplines may opt any two of the generic electives offered by the Science Departments of Panjab University out of following:

Generic Elective - (GE-1) or (GE-2) 100 Marks (4 credits)

Practicals:
Generic Elective - Practical (GE-1) or (GE-2) Lab. 50 Marks (2 credits)

Semester - II

Theory Papers:
Each student from other disciplines may opt any two of the generic electives offered by the Science Departments of Panjab University out of following:

Generic Elective - (GE-3) or (GE-4) 100 Marks (4 credits)

Practicals:
Generic Elective - Practical (GE-3) or (GE-4) Lab. 50 Marks (2 credits)

EVALUATION

1. There shall be one Mid Term Examination of 20% Marks (20 marks) in each semester.
2. End-semester examination will be of 80% of total marks (80 marks).
3. Each practical examination shall be of 3 hours duration.
4. There shall be continuous internal assessment for practicals of 20% marks (10 marks). The final examination will be of 80% marks (40 marks).

Pattern of end-semester question paper
(i) Nine questions in all with equal weightage (16 marks). The candidate will be asked to attempt five questions
(ii) One Compulsory question (consisting of short answer type questions) covering whole syllabus. There will be no choice in this question.
(iii) The remaining eight questions will have Four Units comprising two questions from each Unit.
(iv) Students will attempt one question from each unit and the compulsory question.
The Computer Culture at the Panjab University dates back to 1966. An independent Centre for Computer Science and Applications (now a full fledged department) was set-up in 1983. The department aims at ingraining the spirit of ingenuity, innovativeness and technical competence in the students through rigorous competition and regular guidance. The department also caters to the need of users in the region and organizes training programmes for teaching and research communities.

The Department is running Master of Computer Applications (MCA) (3 year full time course) and was initiated in 1992-93. Admissions are held through an annual entrance test conducted by the Panjab University. Ph.D. program has been started from year 2005. The department has its own library with over 2700 books for exclusive use of the students and the faculty. The library has separate magazine and journal sections. Various computer journals are available online through the University Library.
## COURSE STRUCTURE COMPUTER SCIENCE
### (GENERAL ELECTIVE)

<table>
<thead>
<tr>
<th>SEMESTER I</th>
<th>SEMESTER II</th>
</tr>
</thead>
<tbody>
<tr>
<td>GE1* OR GE2*</td>
<td>Theory and Practical:</td>
</tr>
<tr>
<td>GE1* - Computer Fundamentals OR GE2* - Computer Networks and Internet Technologies</td>
<td>GE3* OR GE4*</td>
</tr>
<tr>
<td>GE3* - Introduction to Programming OR GE4* - Web and E-Commerce Technologies</td>
<td></td>
</tr>
</tbody>
</table>

**GE:** General Elective

*: GE subjects are to be selected by the students from the pool of GE Subjects offered by various Departments of the University. Above mentioned GE are offered by Computer Science Department.
Objective: The student becomes aware of fundamentals of computer related to its hardware, software and data storage.

Note: The question paper for the End-semester examination will consist of 7 questions including one compulsory question covering the whole syllabus. The candidate will attempt five questions in all including compulsory question. All questions will carry equal marks and duration of examination will be 3 hours.

UNIT - I
Introduction: Introduction to computers, characteristics of computer; History of computers; Classification of computers on size: (Micro, Mini, Mainframe and super computers), Generations; Applications of computers; commonly used terms–Hardware, Software, Firmware.

Data Representation: Number systems and character representation, binary arithmetic.

UNIT - II
Human Computer Interface: Types of software: System and Application software; Programming Languages: Generation of Languages; Translators - Interpreters, Compilers, Assemblers and their comparison ; Operating system as user interface, utility programs.

UNIT - III
Devices: Input and output devices (with connections and practical demo), keyboard, mouse, joystick, scanner, OCR, OMR, bar code reader, web camera, monitor, printer, plotter.

Memory: Primary, secondary, auxiliary memory, RAM, ROM, cache memory, hard disks, optical disks.

UNIT - IV
Computer Organisation and Architecture: C.P.U., registers, system bus, main memory unit, cache memory, Inside a computer, SMPS, Motherboard, Ports and Interfaces, expansion cards, ribbon cables, memory chips, processors.

Overview of Emerging Technologies: Bluetooth, cloud computing, big data, data mining, mobile computing and embedded systems.

Reference Books:
MS Word
1. Prepare a grocery list having four columns (Serial number, The name of the product, quantity and price) for the month of April, 06.
   - Font specifications for Title (Grocery List): 14-point Arial font in bold and italics.
   - The headings of the columns should be in 12-point and bold.
   - The rest of the document should be in 10-point Times New Roman.
   - Leave a gap of 12-points after the title.

2. Create a telephone directory.
   - The heading should be 16-point Arial Font in bold
   - The rest of the document should use 10-point font size
   - Other headings should use 10-point Courier New Font.
   - The footer should show the page number as well as the date last updated.

3. Design a time-table form for your college.
   - The first line should mention the name of the college in 16-point Arial Font and should be bold.
   - The second line should give the course name/teacher’s name and the department in 14-point Arial.
   - Leave a gap of 12-points.
   - The rest of the document should use 10-point Times New Roman font.
   - The footer should contain your specifications as the designer and date of creation.

4. BPB Publications plans to release a new book designed as per your syllabus. Design the first page of the book as per the given specifications.
   - The title of the book should appear in bold using 20-point Arial font.
   - The name of the author and his qualifications should be in the center of the page in 16-point Arial font.
   - At the bottom of the document should be the name of the publisher and address in 16-point Times New Roman.
   - The details of the offices of the publisher (only location) should appear in the footer.

5. Create the following one page documents.
   a. Compose a note inviting friends to a get-together at your house, Including a list of things to bring with them.
b. Design a certificate in landscape orientation with a border around the document.
c. Design a Garage Sale sign.
d. Make a sign outlining your rules for your bedroom at home, using a numbered list.

6. Create the following documents:
   (a) A newsletter with a headline and 2 columns in portrait orientation, including at least one image surrounded by text.
   (b) Use a newsletter format to promote upcoming projects or events in your classroom or college.

7. Convert following text to a table, using comma as delimiter
   Type the following as shown (do not bold).
   **Type**
   **Color, Style, Item**
   **Blue, A980, Van**
   **Red, X023, Car**
   **Green, YL724, Truck**
   **Name, Age, Sex**
   **Bob, 23, M**
   **Linda, 46, F**
   **Tom, 29, M**

8. Enter the following data into a table given on the next page.

<table>
<thead>
<tr>
<th>Salesperson</th>
<th>Dolls</th>
<th>Trucks</th>
<th>Puzzles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kennedy, Sally</td>
<td>1327</td>
<td>1423</td>
<td>1193</td>
</tr>
<tr>
<td>White, Pete</td>
<td>1421</td>
<td>3863</td>
<td>2934</td>
</tr>
<tr>
<td>Pillar, James</td>
<td>5214</td>
<td>3247</td>
<td>5467</td>
</tr>
<tr>
<td>York, George</td>
<td>2190</td>
<td>1278</td>
<td>1928</td>
</tr>
<tr>
<td>Banks, Jennifer</td>
<td>1201</td>
<td>2528</td>
<td>1203</td>
</tr>
<tr>
<td>Atwater, Kelly</td>
<td>4098</td>
<td>3079</td>
<td>2067</td>
</tr>
<tr>
<td>Pillar, James</td>
<td>5214</td>
<td>3247</td>
<td>5467</td>
</tr>
<tr>
<td>York, George</td>
<td>2190</td>
<td>1278</td>
<td>1928</td>
</tr>
<tr>
<td>Banks, Jennifer</td>
<td>1201</td>
<td>2528</td>
<td>1203</td>
</tr>
<tr>
<td>Atwater, Kelly</td>
<td>4098</td>
<td>3079</td>
<td>2067</td>
</tr>
</tbody>
</table>
Add a column Region (values: S, N, N,S,S,S) between the Salesperson and Dolls columns to the given table. Sort your table data by Region and within Region by Salesperson in ascending order:

In this exercise, you will add a new row to your table, place the word "Total" at the bottom of the Salesperson column, and sum the Dolls, Trucks, and Puzzles columns.

9. Wrapping of text around the image.

10. Following features of menu option must be covered

| FILE | Complete menu |
| EDIT | Complete menu |
| VIEW | Complete menu |
| INSERT | Complete menu |
| FORMAT | Complete menu |
| TABLE | Complete menu |
| WINDOW | Complete menu |
| HELP | Complete menu |
| TOOLS | All options except Online collaboration, Tools on Macro, Templates |

**MS Excel**

1. Enter the Following data in Excel Sheet

<table>
<thead>
<tr>
<th>State</th>
<th>Qtr1</th>
<th>Qtr2</th>
<th>Qtr3</th>
<th>QTR4</th>
<th>Qtr Total</th>
<th>Rate</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delhi</td>
<td>2020</td>
<td>2400</td>
<td>2100</td>
<td>3000</td>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Punjab</td>
<td>1100</td>
<td>1300</td>
<td>1500</td>
<td>1400</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>U.P.</td>
<td>3000</td>
<td>3200</td>
<td>2600</td>
<td>2800</td>
<td>17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Haryana</td>
<td>1800</td>
<td>2000</td>
<td>2200</td>
<td>2700</td>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rajasthan</td>
<td>2100</td>
<td>2000</td>
<td>1800</td>
<td>2200</td>
<td>20</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL AVERAGE**

(a) Apply Formatting as follow: I

.i. Title in TIMES NEW ROMAN

.ii. Font Size - 14

.iii. Remaining text - ARIAL, Font Size -10

.iv. State names and Qtr. Heading Bold, Italic with Gray Fill Color.

.v. Numbers in two decimal places.

.vi. Qtr. Heading in center Alignment.

.vii. Apply Border to whole data.
(b) Calculate State and Qtr. Total
(c) Calculate Average for each quarter
(d) Calculate Amount = Rate * Total.

2. Given the following worksheet

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Roll No.</td>
<td>Name</td>
<td>Marks</td>
<td>Grade</td>
</tr>
<tr>
<td>2</td>
<td>1001</td>
<td>Sachin</td>
<td>99</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1002</td>
<td>Sehwag</td>
<td>65</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>1003</td>
<td>Rahul</td>
<td>41</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>1004</td>
<td>Sourav</td>
<td>89</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>1005</td>
<td>Har Bhajan</td>
<td>56</td>
<td></td>
</tr>
</tbody>
</table>

Calculate the grade of these students on the basis of following guidelines:

<table>
<thead>
<tr>
<th>If Marks</th>
<th>Then Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;= 80</td>
<td>A+</td>
</tr>
<tr>
<td>&gt;= 60 &lt; 80</td>
<td>A</td>
</tr>
<tr>
<td>&gt;= 50 &lt; 60</td>
<td>B</td>
</tr>
<tr>
<td>&lt; 50</td>
<td>F</td>
</tr>
</tbody>
</table>

3. Given the following worksheet

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Salesman</td>
<td>Sales in (Rs.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>No.</td>
<td>Qtr1</td>
<td>Qtr2</td>
<td>Qtr3</td>
<td>Qtr4</td>
<td>Total</td>
<td>Commission</td>
</tr>
<tr>
<td>3</td>
<td>S001</td>
<td>5000</td>
<td>8500</td>
<td>12000</td>
<td>9000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>S002</td>
<td>7000</td>
<td>4000</td>
<td>7500</td>
<td>11000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>S003</td>
<td>4000</td>
<td>9000</td>
<td>6500</td>
<td>8200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>S004</td>
<td>5500</td>
<td>6900</td>
<td>4500</td>
<td>10500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>S005</td>
<td>7400</td>
<td>8500</td>
<td>9200</td>
<td>8300</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>S006</td>
<td>5300</td>
<td>7600</td>
<td>9800</td>
<td>6100</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Calculate the commission earned by the salesmen on the basis of following Candidates:

<table>
<thead>
<tr>
<th>If Total Sales</th>
<th>Commission</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 20000</td>
<td>0% of sales</td>
</tr>
<tr>
<td>&gt; 20000 and &lt; 25000</td>
<td>4% of sales</td>
</tr>
<tr>
<td>&gt; 25000 and &lt; 30000</td>
<td>5.5% OF SALES</td>
</tr>
<tr>
<td>&gt; 30000 and &lt; 35000</td>
<td>8% of sales</td>
</tr>
</tbody>
</table>
The total sales is sum of sales of all the four quarters.

4. A company XYZ Ltd. pays a monthly salary to its employees which consists of basic salary, allowances & deductions. The details of allowances and deductions are as follows:

**Allowances**
- HRA Dependent on Basic
  - 30% of Basic if Basic <=1000
  - 25% of Basic if Basic>1000 & Basic<=3000
  - 20% of Basic if Basic >3000
- DA Fixed for all employees, 30% of Basic
- Conveyance Allowance Rs. 50/- if Basic is <=1000 Rs.
  - 75/- if Basic >1000 & Basic<=2000
  - Rs. 100 if Basic >2000
- Entertainment Allowance NIL if Basic is
  - <=1000 Rs. 100/- if Basic > 1000

**Deductions**
- Provident Fund 6% of Basic
- Group Insurance Premium Rs. 40/- if Basic is <=1500
  - Rs. 60/- if Basic > 1500 & Basic<=3000
  - Rs. 80/- if Basic >3000

Calculate the following:
- Gross Salary = Basic + HRA + DA + Conveyance + Entertainment
- Total deduction = Provident Fund + Group Insurance Premium
- Net Salary = Gross Salary – Total Deduction

5. Create Payment Table for a fixed Principal amount, variable rate of interests and time in the format below:

<table>
<thead>
<tr>
<th>No. of Installments</th>
<th>5%</th>
<th>6%</th>
<th>7%</th>
<th>8%</th>
<th>9%</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
</tr>
<tr>
<td>4</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
</tr>
<tr>
<td>5</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
</tr>
<tr>
<td>6</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
</tr>
</tbody>
</table>

6. Use an array formula to calculate Simple Interest for given principal amounts given the rate of Interest and time
- Rate of Interest 8%
- Time 5 Years
Principal Simple Interest
(A) 1000 (B) 18000 (C) 5200 ?

7. The following table gives year wise sale figure of five salesmen in Rs.

<table>
<thead>
<tr>
<th>Salesman</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1</td>
<td>10000</td>
<td>12000</td>
<td>20000</td>
<td>50000</td>
</tr>
<tr>
<td>S2</td>
<td>15000</td>
<td>18000</td>
<td>50000</td>
<td>60000</td>
</tr>
<tr>
<td>S3</td>
<td>20000</td>
<td>22000</td>
<td>70000</td>
<td>70000</td>
</tr>
<tr>
<td>S4</td>
<td>30000</td>
<td>30000</td>
<td>100000</td>
<td>80000</td>
</tr>
<tr>
<td>S5</td>
<td>40000</td>
<td>45000</td>
<td>125000</td>
<td>90000</td>
</tr>
</tbody>
</table>

(a) Calculate total sale year wise.
(b) Calculate the net sale made by each salesman
(c) Calculate the maximum sale made by the salesman
(d) Calculate the commission for each salesman under the condition.
   (i) If total sales >4,00,000 give 5% commission on total sale made by the salesman.
   (ii) Otherwise give 2% commission.
(e) Draw a bar graph representing the sale made by each salesman. (f) Draw a pie graph representing the sale made by salesman in 2000.

8. Enter the following data in Excel Sheet

<table>
<thead>
<tr>
<th>PERSONAL BUDGET FOR FIRST QUARTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monthly Income (Net): 1,475</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EXPENSES</th>
<th>JAN</th>
<th>FEB</th>
<th>MARCH QUARTER</th>
<th>QUARTER TOTAL</th>
<th>QUARTER AVERAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rent</td>
<td>600.00</td>
<td>600.00</td>
<td>600.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Telephone</td>
<td>48.25</td>
<td>43.50</td>
<td>60.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Utilities</td>
<td>67.27</td>
<td>110.00</td>
<td>70.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Credit Card</td>
<td>200.00</td>
<td>110.00</td>
<td>70.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil</td>
<td>100.00</td>
<td>150.00</td>
<td>90.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AV to Insurance</td>
<td>150.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cable TV</td>
<td>40.75</td>
<td>40.75</td>
<td>40.75</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Monthly Total**
Calculate Quarter total and Quarter average.
(a) Calculate Monthly total.
(b) Surplus = Monthly income - Monthly total.
(c) What would be total surplus if monthly income is 1500.
(d) How much does telephone expense for March differ from quarter average.
(e) Create a 3D column graph for telephone and utilities.
(f) Create a pie chart for monthly expenses.

9. Enter the following data in Excel Sheet

**TOTAL REVENUE EARNED FOR SAM’S BOOKSTALL**

<table>
<thead>
<tr>
<th>Publisher name</th>
<th>1997</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
<th>total</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Rs. 1,000.00</td>
<td>Rs. 1,100.00</td>
<td>Rs. 1,300.00</td>
<td>Rs. 800.00</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Rs. 1,500.00</td>
<td>Rs. 700.00</td>
<td>Rs. 1,000.00</td>
<td>Rs. 2,000.00</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Rs. 700.00</td>
<td>Rs. 900.00</td>
<td>Rs. 1,500.00</td>
<td>Rs. 600.00</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Rs. 1,200.00</td>
<td>Rs. 500.00</td>
<td>Rs. 200.00</td>
<td>Rs. 1,100.00</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Rs. 800.00</td>
<td>Rs. 1,000.00</td>
<td>Rs. 3,000.00</td>
<td>Rs. 560.00</td>
<td></td>
</tr>
</tbody>
</table>

(a) Compute the total revenue earned.
(b) Plot the line chart to compare the revenue of all publisher for 4 years.
(c) Chart Title should be “Total Revenue of Sam’s Bookstall (1997-2000)”
(c) Give appropriate categories and value axis title.

10. Generate 25 random numbers between 0 & 100 and find their sum, average and count. How many no. are in range 50-60
CSC-GE2 COMPUTER NETWORKS AND INTERNET TECHNOLOGIES

THEORY

Total Lectures : 60

Credits: 4

Max. Marks: 100

Objective : The student will gather knowledge about the various concepts related to computer networks. In addition he/she will be able to design a dynamic website using HTML and JavaScript.

Note: The question paper for the End-semester examination will consist of 7 questions including one compulsory question covering the whole syllabus. The candidate will attempt five questions in all including compulsory question. All questions will carry equal marks and duration of examination will be 3 hours.

UNIT - I

Computer Networks: Introduction to computer network, data communication, components of data communication, data transmission mode, data communication measurement, LAN, MAN, WAN, wireless LAN, internet, intranet, extranet (6 Lectures)

Network Models: Client/server network and Peer-to-peer network, OSI, TCP/IP, layers and functionalities. (8 Lectures)

UNIT - II


LAN Topologies: Basic concepts advantages and disadvantages of various network topologies like Ring, bus, star, mesh and tree topologies. (2 Lectures)

Network Devices: NIC, repeaters, hub, bridge, switch, gateway and router. (2 Lectures)

UNIT – III

Internet Terms: Web page, Home page, website, internet browsers, URL, Hypertext, ISP, Web server, download and upload, online and offline. (2 Lectures)

Internet Applications: www, telnet, ftp, e-mail, social networks, search engines, Video Conferencing, e-Commerce, m-Commerce, VOIP, blogs. (6 Lectures)

UNIT - IV

Introduction to Web Design: Introduction to hypertext markup language (html). Document type definition, creating web pages, lists, hyperlinks, tables, web forms, inserting images, frames, hosting options and domain name registration. Customized Features: Cascading style sheet (css) for text formatting and other manipulations. (16 Lectures)

JavaScript Fundamentals: Data types and variables, functions, methods and events, controlling program flow, JavaScript object model, built-in objects and operators. (14 Lectures)
Reference Books:
1. Andrew S. Tanenbaum, David J. Wetherall Computer Networks (5th Edition), PHI, 2010
Practical exercises based on concepts listed in theory using HTML.

1. Create HTML document with following formatting – Bold, Italics, Underline, Colors, Headings, Title, Font and Font Width, Background, Paragraph, Line Brakes, Horizontal Line, Blinking text as well as marquee text.

2. Create HTML document with Ordered and Unordered lists, Inserting Images, Internal and External linking

3. Create HTML document with Table:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Some image here</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. Create Form with Input Type, Select and Text Area in HTML.

5. Create an HTML containing Roll No., student’s name and Grades in a tabular form.

6. Create an HTML document (having two frames) which will appear as follows:

<table>
<thead>
<tr>
<th>About</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Department 1</td>
<td></td>
</tr>
<tr>
<td>Department 2</td>
<td></td>
</tr>
<tr>
<td>Department 3</td>
<td></td>
</tr>
<tr>
<td>This frame would show the contents according to the link clicked by the user on the left frame</td>
<td></td>
</tr>
</tbody>
</table>

7. Create an HTML document containing horizontal frames as:

<table>
<thead>
<tr>
<th>follows: Department Names (could be along with Logos)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contents according to the Link clicked</td>
</tr>
</tbody>
</table>

8. Create a website of 6 – 7 pages with different effects as mentioned in above problems.
9. Create HTML documents (having multiple frames) in the following three formats:

Frame1

Frame2

Frame1

Frame2

Frame3

10. Create a form using HTML which has the following types of controls:

V. Text Box
VI. Option/radio buttons
VII. Check boxes
VIII. Reset and Submit buttons

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☐ Here on the Web ☐ In a magazine ☐ Television ☐ Other
Would you like to be on our regular mailing list?
☑ Yes, we love junk emails

[Reset] [Send it In]
List of Practicals using Javascript:

Create event driven program for following:

1. Print a table of numbers from 5 to 15 and their squares and cubes using alert.
2. Print the largest of three numbers.
3. Find the factorial of a number n.
4. Enter a list of positive numbers terminated by Zero. Find the sum and average of these numbers.
5. A person deposits Rs 1000 in a fixed account yielding 5% interest. Compute the amount in the account at the end of each year for n years.
6. Read n numbers. Count the number of negative numbers, positive numbers and zeros in the list.
Objective: The student will learn the basic constructs of programming which will enable him to develop programs using C/C++ programming languages.

Note: The question paper for the End-semester examination will consist of 7 questions including one compulsory question covering the whole syllabus. The candidate will attempt five questions in all including compulsory question. All questions will carry equal marks and duration of examination will be 3 hours.

UNIT - I

Introduction to C and C++
History of C and C++, Overview of Procedural Programming and Object-Orientation Programming, Using main() function, Compiling and Executing Simple Programs in C++. (5 Lectures)

Declaring, Defining and Initializing Variables, Scope of Variables, Using Named Constants, Keywords, Data Types, Casting of Data Types, Operators (Arithmetic, Logical and Bitwise), Using Comments in programs, Character I/O (getc, getchar, putc, putcharetc), Formatted and Console I/O (printf(), scanf(), cin, cout), Using Basic Header Files (stdio.h, iostream.h, conio.hetc). (10 Lectures)

Expressions, Conditional Statements and Iterative Statements: Simple Expressions in C++ (including Unary Operator Expressions, Binary Operator Expressions), Understanding Operators Precedence in Expressions, Conditional Statements (if construct, switch-case construct), Understanding syntax and utility of Iterative Statements (while, do-while, and for loops), Use of break and continue in Loops, Using Nested Statements (Conditional as well as Iterative) (10 Lectures)

UNIT - II

Functions and Arrays: Utility of functions, Call by Value, Call by Reference, Functions returning value, Void functions, Inline Functions, Return data type of functions, Functions parameters, Differentiating between Declaration and Definition of Functions, Command Line Arguments/Parameters in Functions, Functions with variable number of Arguments.

Creating and Using One Dimensional Arrays (Declaring and Defining an Array, Initializing an Array, Accessing individual elements in an Array, Manipulating array elements using loops), Use Various types of arrays (integer, float and character arrays / Strings) Two-dimensional Arrays (Declaring, Defining and Initializing Two Dimensional Array, Working with Rows and Columns), Introduction to Multi-dimensional arrays. (10 Lectures)
Derived Data Types (Structures and Unions) Understanding utility of structures and unions, Declaring, initializing and using simple structures and unions, Manipulating individual members of structures and unions, Array of Structures, Individual data members as structures, Passing and returning structures from functions, Structure with union as members, Union with structures as members. (5 Lectures)

UNIT - III

File I/O, Preprocessor Directives
Opening and closing a file (use of fstream header file, ifstream, ofstream and fstream classes), Reading and writing Text Files, Using put(), get(), read() and write() functions, Random access in files, Understanding the Preprocessor Directives (#include, #define, #error, #if, #else, #elif, #endif, #ifdef, #ifndef and #undef), Macros. (8 Lectures)

UNIT - IV

Using Classes in C++
Principles of Object-Oriented Programming, Defining & Using Classes, Class Constructors, Constructor Overloading, Function overloading in classes, Class Variables & Functions, Objects as parameters, Specifying the Protected and Private Access, Copy Constructors, Overview of Template classes and their use, Introduction to Inheritance. (12 Lectures)

Reference Books:
CSC-GE3 PRACTICAL  INTRODUCTION TO PROGRAMMING LAB

PRACTICAL

Total Lectures : 60          Credits: 2
Max. Marks : 50

Note: The student should develop programs using C and C++ to implement the various programming concepts. Following list is not exhaustive. The teacher can add more programs to it.

1. Write a program to find greatest of three numbers.
2. Write a program to find gross salary of a person
3. Write a program to find grade of a student given his marks.
4. Write a program to find divisor or factorial of a given number.
5. Write a program to print first ten natural numbers.
6. Write a program to print first ten even and odd numbers.
7. Write a program to find grade of a list of students given their marks.
8. Write a program to perform various matrix operation on a given 2-D array.
9. Write a program to read a data from file and copy into another file.
10. Write a program to implement concept of structures and union.
11. Write a program to implement concept of classes and objects in C++.
12. Write a program in C++ to implement various types of inheritance.
CSC-GE4 WEB AND E-COMMERCE TECHNOLOGIES
THEORY

Total Lectures : 60
Credits: 4
Max. Marks: 100

Objective: The student will learn the basic knowledge of e-commerce and web technologies.

Note: The question paper for the End-semester examination will consist of 7 questions including one compulsory question covering the whole syllabus. The candidate will attempt five questions in all including compulsory question. All questions will carry equal marks and duration of examination will be 3 hours.

UNIT – I


UNIT – II

The Internet and WWW: Evolution of Internet, Domain Names and Internet Organization (.edu, .com, .mil, .gov, .net etc.) , Types of Network, Internet Service Provider, World Wide Web, Internet & Extranet, Role of Internet in B2B Application, building own website, Cost, Time, Reach, Registering a Domain Name, Web promotion, Target email, Banner, Exchange,Shopping bots. (10 Lectures)


UNIT – III


UNIT – IV

Planning for Electronic Commerce: Planning Electronic Commerce initiates, Linking objectives to business strategies, Measuring cost objectives, Comparing benefits to Costs, Strategies for developing electronic commerce web sites (10 Lectures)

Internet Marketing: The PROS and CONS of online shopping, The cons of online shopping, Justify an Internet business, Internet marketing techniques, The E-cycle of Internet marketing, Personalization e-commerce. (10 Lectures)
Recommended Books:
CSC-GE4 PRACTICAL WEB AND E-COMMERCE TECHNOLOGIES LAB PRACTICAL

Total Lectures : 60          Credits: 2
Max. Marks : 50

Web and E-Commerce Technologies LAB (based on the following topics):

**HyperText Markup Language (HTML):** structural setup; page layout; text manipulation; special characters; images; links. Intermediate: image maps; tables; frames, forms; meta tags; web forms.

**Cascading Style Sheets (CSS):** embedding/linking; HTML element selectors; classes; ID selectors, text manipulation; background; borders and spacing; layout; context selectors and grouping, pseudo-classes; pseudo-elements.

**JavaScript:** writing your first script; creating HTML tags; user input and output; loops and tables; payroll calculator, forms and text fields; validating an email address; radio buttons; check boxes; self-grading tests, image rollovers; slide shows; real-time clock; controllable clock; working with cookies.

**ASP structural setup:** response.write; retrieving from forms; retrieving from querystring; variables; control constructs; subroutines and functions; session state; application variables; server variables; debugging, reading and writing cookies; server-side includes; response object methods; VBScript functions; error handling; debugging, browser details; CDONTS; files; output from a recordset; global.asa; setup instructions for using IIS and ASP. Flash 3 Create Flash movies of moving and interactive objects.

**Perl/CGI 10:** sample Perl operations; random numbers; lists; dealing four poker hands; time manipulation; subroutines, hash tables; files; string matching, CGI; registration lists; surveys.

**SQL and regular expressions:** Regular expressions: select; where; order by; insert; update; delete, like; aggregate functions; create table; alter table; drop deterministic functions; non-deterministic functions.