Padasalai’s Telegram Groups!

(தானியப்படுத்தப்பட்ட வகுப்புகள் என்று எனக்கு குறிப்பிட்டியது சுருக்கம்!)

- Padasalai's NEWS - Group
  https://t.me/joinchat/NIfCqVRBNj9hhY4wu6_NgA

- Padasalai's Channel - Group
  https://t.me/padasalaichannel

- Lesson Plan - Group
  https://t.me/joinchat/NIfCqVWwo5iL-21gpzrXLw

- 12th Standard - Group
  https://t.me/Padasalai_12th

- 11th Standard - Group
  https://t.me/Padasalai_11th

- 10th Standard - Group
  https://t.me/Padasalai_10th

- 9th Standard - Group
  https://t.me/Padasalai_9th

- 6th to 8th Standard - Group
  https://t.me/Padasalai_6to8

- 1st to 5th Standard - Group
  https://t.me/Padasalai_1to5

- TET - Group
  https://t.me/Padasalai_TET

- PGTRB - Group
  https://t.me/Padasalai_PGTRB

- TNPSC - Group
  https://t.me/Padasalai_TNPSC
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</table>
1. Define Multimedia

Multimedia is an integration of many types of media like **text, images, graphics, audio, video, animation** etc.

2. List out Multimedia Components

|---------|-----------|----------|----------|-------------|

3. Classify the TEXT Component in multimedia

- Static Text
- Hyper Text

4. Classify the IMAGE Component in multimedia

- Raster or Bitmap image
- Vector Images

5. Define Animation

Animation is the process of displaying still images so quickly so that they give the impression of continuous movement.

6. List out image file formats

<table>
<thead>
<tr>
<th>1. TIFF (Tagged Image File Format)</th>
<th>4. GIF (Graphics Interchange Format)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. BMP (Bitmap)</td>
<td>5. TGA (Tagra)</td>
</tr>
<tr>
<td>3. DIB (Device Independent Bitmap)</td>
<td>6. PNG (Portable Network Graphics)</td>
</tr>
</tbody>
</table>
7. List out audio file formats

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>WAV (Waveform Audio File Format)</td>
</tr>
<tr>
<td>2.</td>
<td>MP3 (MPEG Layer-3 Format)</td>
</tr>
<tr>
<td>3.</td>
<td>OGG</td>
</tr>
<tr>
<td>4.</td>
<td>AIFF (Audio Interchange File Format)</td>
</tr>
<tr>
<td>5.</td>
<td>WMA (Windows Media Audio)</td>
</tr>
<tr>
<td>6.</td>
<td>RA (Real Audio Format)</td>
</tr>
</tbody>
</table>

8. List out video file formats

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>AVI (Audio/Video Interleave)</td>
</tr>
<tr>
<td>2.</td>
<td>MPEG (Moving Picture Experts Group)</td>
</tr>
<tr>
<td>3.</td>
<td>WMV (Windows Media Video)</td>
</tr>
<tr>
<td>4.</td>
<td>FLV (Flash Video)</td>
</tr>
</tbody>
</table>

9. Define Multimedia Production

Adequate time and efficient planning is required for multimedia production.

10. List out Multimedia Production team members

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Production Manager</td>
</tr>
<tr>
<td>2.</td>
<td>Content Specialist</td>
</tr>
<tr>
<td>3.</td>
<td>Script Writer</td>
</tr>
<tr>
<td>4.</td>
<td>Text Editor</td>
</tr>
<tr>
<td>5.</td>
<td>Multimedia Architect</td>
</tr>
<tr>
<td>6.</td>
<td>Computer Graphic Artist</td>
</tr>
<tr>
<td>7.</td>
<td>Audio and Video Specialist</td>
</tr>
<tr>
<td>8.</td>
<td>Computer Programmer</td>
</tr>
<tr>
<td>9.</td>
<td>Web Master</td>
</tr>
</tbody>
</table>
1. Briefly Explain about Multimedia Components

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text</td>
<td>It is the most common ways of communicating information to other person.</td>
</tr>
<tr>
<td>Image</td>
<td>It is a vital component in multimedia.</td>
</tr>
<tr>
<td>Audio</td>
<td>It is a meaningful speech in any language.</td>
</tr>
<tr>
<td>Video</td>
<td>It is the display of recorded, event, scene etc.</td>
</tr>
<tr>
<td>Animation</td>
<td>It is the impression of continuous movement.</td>
</tr>
</tbody>
</table>

2. Describe the features and techniques of animation.

- Animation may be in two or three dimensional
- Animation tools are very powerful and effective.
- Two types of Animation Path animation and Frame animation.

3. Write roles and responsibilities of Production team members.


4. Describe the various file formats in multimedia.

<table>
<thead>
<tr>
<th>Type</th>
<th>Formats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text Formats</td>
<td>RTF (Rich Text Format)</td>
</tr>
<tr>
<td></td>
<td>Plain Text</td>
</tr>
<tr>
<td>Audio Formats</td>
<td>WAV (Waveform Audio File Format)</td>
</tr>
<tr>
<td></td>
<td>MP3 (MPEG Layer-3 Format)</td>
</tr>
<tr>
<td>Image Formats</td>
<td>TIFF (Tagged Image File Format)</td>
</tr>
<tr>
<td></td>
<td>GIF (Graphics Interchange Format)</td>
</tr>
<tr>
<td>Video Formats</td>
<td>AVI (Audio/Video Interleave)</td>
</tr>
<tr>
<td></td>
<td>MPEG (Moving Picture Experts Group)</td>
</tr>
</tbody>
</table>
1. Explain in detail process of Multimedia

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Conceptual Analysis and Planning</strong></td>
<td>It is a appropriate <strong>theme</strong>, <strong>budget</strong> and <strong>content</strong> availability.</td>
</tr>
<tr>
<td>2</td>
<td><strong>Project Design</strong></td>
<td>Theme is finalized <strong>objectives</strong>, <strong>goals</strong> and <strong>activities</strong> are the multimedia project.</td>
</tr>
<tr>
<td>3</td>
<td><strong>Pre-production</strong></td>
<td>Based on the <strong>planning</strong> and <strong>design</strong> to develop the project.</td>
</tr>
<tr>
<td>4</td>
<td><strong>Budgeting</strong></td>
<td>Budgeting for <strong>consultants</strong>, <strong>hardware</strong>, <strong>software</strong>, <strong>travel</strong>, <strong>communication</strong> and <strong>publishing</strong>.</td>
</tr>
<tr>
<td>5</td>
<td><strong>Multimedia Production Team</strong></td>
<td>Team for <strong>Production Manager</strong>, <strong>Script writer</strong>, <strong>Editor</strong>, <strong>Graphics &amp; Multimedia Architect</strong>, <strong>Web master</strong>.</td>
</tr>
<tr>
<td>6</td>
<td><strong>Hardware/Software Selection</strong></td>
<td>Hardware includes fastest <strong>CPU</strong>, <strong>RAM</strong>, <strong>Monitors</strong>, <strong>Hard disks</strong>. Software is the selection of <strong>suitable software</strong>.</td>
</tr>
<tr>
<td>7</td>
<td><strong>Defining the content</strong></td>
<td>Content is the <strong>narration</strong>, <strong>bullets</strong>, <strong>charts</strong> and <strong>tables</strong> etc.</td>
</tr>
<tr>
<td>8</td>
<td><strong>Preparing the structure</strong></td>
<td>Structure defines the <strong>activities</strong>, <strong>responsible person</strong>, start and end time for <strong>each activity</strong>.</td>
</tr>
<tr>
<td>9</td>
<td><strong>Production</strong></td>
<td>Background <strong>music selection</strong>, <strong>pictures shot</strong> and <strong>video clips</strong> project is ready by this time.</td>
</tr>
<tr>
<td>10</td>
<td><strong>Testing</strong></td>
<td>The complete testing of the <strong>product</strong> avoiding <strong>failure</strong> after launch.</td>
</tr>
<tr>
<td>11</td>
<td><strong>Documentation</strong></td>
<td>It is a valuable information like <strong>contact details</strong>, <strong>e-mail address</strong> and <strong>phone numbers</strong>.</td>
</tr>
<tr>
<td>12</td>
<td><strong>Delivering the Multimedia product</strong></td>
<td>Delivered on <strong>CD/DVD</strong> or in the Website and Internet.</td>
</tr>
</tbody>
</table>
2. Explain in detail Techniques of Animation

- Animation is the process displaying still images so **quickly** so that they give the **impression** of continuous movement.

- The least frame rate of at least **16 frames** per second impression of smoothness. The natural looking of at least **25 frames** per second.

- Animation may be in **two or three** dimensional. Two dimensional animation is a **two axis X and Y**. Three dimensional animation is a three **axis X, Y and Z**.

- Animation tools are **very powerful** and effective. Two types of Animation **Path animation** and **Frame animation**.

- Path animation involves **moving an object** on a screen. Ex. Cartoon character. Frame animation is a **multiple objects** are allowed to travel and the **background side changes**.

3. Explain in detail about production team roles and Responsibilities

<table>
<thead>
<tr>
<th></th>
<th>Production Manager</th>
<th>Content Specialist</th>
<th>Script Writer</th>
<th>Text editor</th>
<th>Multimedia Architect</th>
<th>Computer graphic Artist</th>
<th>Audio and video specialist</th>
<th>Computer Programmer</th>
<th>Web master</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Production manager is a technology expert, efficient team leader, good writing, Communication and budget management skills.</td>
<td>It is a responsible for performing all research activities includes program contents, applications content and project information.</td>
<td>Script writer visualizes the concepts in three dimensional environments.</td>
<td>Text editor is text to be structured, correct and grammatically check the document.</td>
<td>It is include graphics, text, audio, video, music, photos and animation.</td>
<td>It is include backgrounds, bullets, buttons, pictures editing, animation and logos etc.</td>
<td>It is include recording, editing, sound effects and digitalizing.</td>
<td>Writes the line of code or scripts in any language.</td>
<td>Web master is to create and maintain an internet webpage.</td>
</tr>
</tbody>
</table>
4. Explain about different file format in multimedia files

<table>
<thead>
<tr>
<th></th>
<th>Text Formats</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>RTF</strong></td>
<td>is a primary file format in 1987 by Microsoft.</td>
</tr>
<tr>
<td></td>
<td><strong>Plaintext</strong></td>
<td>file is opened, read, and edited with text editors.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Image Formats</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td><strong>TIFF</strong></td>
<td>is common in DTP in world is a high quality output.</td>
</tr>
<tr>
<td></td>
<td><strong>GIF</strong></td>
<td>is a compressed image format.</td>
</tr>
<tr>
<td></td>
<td><strong>JPEG</strong></td>
<td>was designed to maximum image compression uses lossy compression technique.</td>
</tr>
<tr>
<td></td>
<td><strong>TGA</strong></td>
<td>is the first popular format for high resolution images.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Audio file Formats</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td><strong>WAV</strong></td>
<td>is the most popular file format in windows for storing uncompressed sound files.</td>
</tr>
<tr>
<td></td>
<td><strong>MP3</strong></td>
<td>is the most popular format for storing and downloading music.</td>
</tr>
<tr>
<td></td>
<td><strong>WMA</strong></td>
<td>is a popular windows media audio format owned by Microsoft.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Video File Format</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td><strong>AVI</strong></td>
<td>is the video file format for windows. Sound and picture elements are stored in the file.</td>
</tr>
<tr>
<td></td>
<td><strong>MPEG</strong></td>
<td>is a digital video and audio compression under the International Standards Organization by the group of people.</td>
</tr>
</tbody>
</table>
2. AN INTRODUCTION TO ADOBE PAGEMAKER

2 Mark

1. What is desktop publishing?

Desktop publishing is the creation of **page layouts** for documents using DTP software.

2. Give some examples of DTP software.

| Adobe PageMaker | Adobe InDesign | QuarkXpress |

3. Write the steps to open PageMaker.

Start → All Programs → Adobe → PageMaker 7.0 → Adobe PageMaker 7.0

4. How do you create a New document in PageMaker?

3. Enter the appropriate settings.
4. Click on OK.

5. What is a Pasteboard in PageMaker?

The area outside of the dark border is referred to as the **pasteboard**.

6. Write about the Menu bar of PageMaker.

File, Edit, Layout, Type, Element, Utilities, View, Window, Help.

7. Differentiate Ellipse tool from Ellipse frame tool.

<table>
<thead>
<tr>
<th>Ellipse tool</th>
<th>Ellipse frame tool</th>
</tr>
</thead>
<tbody>
<tr>
<td>Used to draw <strong>circles</strong> and <strong>ellipses</strong>.</td>
<td>Used to create elliptical placeholders for <strong>text</strong> and <strong>graphics</strong>.</td>
</tr>
</tbody>
</table>
8. What is Text editing?

Entering a **new text** or modifying the **existing text** in a document is known as **Text editing**.

9. What is text block?

A **text block** contains **type**, **paste** or **import**. You can’t see the borders of a text block until you select the **pointer tool**.

10. What is threading text blocks?

A **threaded text block** can be identified by a **plus sign** in its **top or bottom handles**.

11. What is threading text?

The process of **connecting text** among **Text blocks** is called **threading text**.

12. How do you insert a page in Page Maker?

1. Choose **Layout → Insert Pages** in the menu bar.

2. Dialog box appears.

3. Type the **number of pages** you want to insert.

4. Click on **Insert**.

3 Mark

1. What is pagemaker? Explain its uses.

Adobe page Maker is a **page layout software**. It is used to design and produce documents that can be **printed**. You can create anything from a **simple business card** to a **large book**.

2. Mention three tools in PageMaker and write their keyboard shortcuts.

<table>
<thead>
<tr>
<th>Tool</th>
<th>Keyboard Shortcut</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pointer Tool</td>
<td>F9</td>
</tr>
<tr>
<td>Rotating Tool</td>
<td>Shift + F2</td>
</tr>
<tr>
<td>Line Tool</td>
<td>Shift + F3</td>
</tr>
</tbody>
</table>
3. Write the use of any three tools in PageMaker along with symbols.

<table>
<thead>
<tr>
<th>Tool</th>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line Tool</td>
<td><img src="image" alt="Line Tool" /></td>
<td>Used to draw straight lines in any direction.</td>
</tr>
<tr>
<td>Constrained line tool</td>
<td><img src="image" alt="Constrained line tool" /></td>
<td>Used to draw vertical or horizontal lines.</td>
</tr>
<tr>
<td>Rectangle tool</td>
<td><img src="image" alt="Rectangle tool" /></td>
<td>Used to draw squares and rectangles.</td>
</tr>
</tbody>
</table>

4. How do you rejoin split blocks?
   - Place the Cursor – bottom handle – second text block – drag and drop - up to top.
   - Place the Cursor - bottom handle – first text block – drag and drop – if necessary.

5. How do you link frames containing text?
   1. Draw a second frame
   2. Click the first frame to select it.
   3. Click the red triangle
   4. Click the second frame

   PageMaker flows the text into the second frame.

6. What is the use of Master Page?
   Master Pages commonly use logos, page numbers, headers, and footers.

7. How do you insert page numbers in Master Pages?
   1. Click on Master Pages icon.
   2. Click the Text tool.
   3. Then Click the Left Master Pages.
   4. Press Ctrl + Alt + P
   5. Page Number display on the Master Pages.
5 Mark

1. Explain the tools in PageMaker Toolbox.

<table>
<thead>
<tr>
<th>Tool</th>
<th>Tool Box</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pointer tool</td>
<td><img src="image" alt="Pointer" /></td>
<td>Used to select, move, and resize text objects and graphics.</td>
</tr>
<tr>
<td>Text tool</td>
<td><img src="image" alt="Text" /></td>
<td>Used to type, select, and edit text.</td>
</tr>
<tr>
<td>Rotating tool</td>
<td><img src="image" alt="Rotating" /></td>
<td>Used to select and rotate objects.</td>
</tr>
<tr>
<td>Cropping tool</td>
<td><img src="image" alt="Cropping" /></td>
<td>Used to orderly imported graphics.</td>
</tr>
<tr>
<td>Line tool</td>
<td><img src="image" alt="Line" /></td>
<td>Used to draw straight lines in any direction</td>
</tr>
<tr>
<td>Constrained line</td>
<td><img src="image" alt="Constrained" /></td>
<td>Used to draw vertical or horizontal lines.</td>
</tr>
<tr>
<td>Rectangle tool</td>
<td><img src="image" alt="Rectangle" /></td>
<td>Used to draw squares and rectangles.</td>
</tr>
<tr>
<td>Rectangle frame</td>
<td><img src="image" alt="Rectangle Frame" /></td>
<td>Used to create rectangular placeholders for text and graphics.</td>
</tr>
<tr>
<td>Ellipse tool</td>
<td><img src="image" alt="Ellipse" /></td>
<td>Used to draw circles and ellipses.</td>
</tr>
<tr>
<td>Ellipse frame</td>
<td><img src="image" alt="Ellipse Frame" /></td>
<td>Used to create elliptical placeholders for text and graphics.</td>
</tr>
<tr>
<td>Polygon tool</td>
<td><img src="image" alt="Polygon" /></td>
<td>Used to draw polygons.</td>
</tr>
<tr>
<td>Polygon frame</td>
<td><img src="image" alt="Polygon Frame" /></td>
<td>Used to create polygonal placeholders for text and graphics.</td>
</tr>
<tr>
<td>Hand tool</td>
<td><img src="image" alt="Hand" /></td>
<td>Used to scroll the page</td>
</tr>
<tr>
<td>Zoom tool</td>
<td><img src="image" alt="Zoom" /></td>
<td>Used to magnify or reduce an area of the page.</td>
</tr>
</tbody>
</table>
2. Write the steps to place the text in a frame.

1. Click on one of a Frame tool from the Toolbox.

2. Draw a Frame with one of PageMaker’s Frame tools

3. Click on File. The File menu will appear.

4. Click on Place. The Place dialog box will appear.

5. Locate the document select it.

6. Click on Open.

7. Click in a frame to place the text will be placed in the frame.

3. How can you convert text in a text block to a frame?

1. Draw the frame of your choice using one of the PageMaker’s Frame tool.

2. Select the text block you want to insert in the frame.

3. Click the frame while pressing the Shift key. Now both elements will be selected.

4. Choose Element > Frame > Attach Content on the Menu bar.

5. Now the text appears in the frame.

4. Write the steps to draw a star using polygon tool?

1. Click on the Polygon tool from the toolbox.

2. The cursor changes to a crosshair.

3. Click and drag anywhere on the screen.

4. Choose Element > Polygon Settings in the menu bar.

5. Polygon Settings dialogue box appears.

6. Type 5 in the Number of sides text box.

7. Type 50% in star insert textbox.

8. Click OK. Now the required star appears on the screen.
1. Define Data Model and list the types of data model used.

The database technology came into existence in terms of models with relational and object-relational behavior.

- Hierarchical Database model
- Network Model
- Relational Model
- Object Oriented database model

2. List few disadvantages of processing system

- Data Duplication - Same data is used for processing system.
- High Maintenance - Access control and verifying data.
- Security - Less security provided to the data.


<table>
<thead>
<tr>
<th>Single Valued Attributes</th>
<th>Multi Valued Attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td>A single valued attribute contains <strong>only one value</strong> for the attribute.</td>
<td>A multi valued attribute has <strong>more than one value</strong> for that particular attribute.</td>
</tr>
<tr>
<td>Example: Age – 13</td>
<td>Example: Degree – M.Sc., B.Ed.,</td>
</tr>
<tr>
<td>Roll No – 1234</td>
<td>Bank – SBI, IOB</td>
</tr>
</tbody>
</table>

4. What are the ACID properties?

- Atomicity, Consistency, Isolation and Durability

5. Which command is used to make permanent changes done by a transaction?

- COMMIT, ROLLBACK, SET TRANSACTION and SAVEPOINT
6. List any two DDL and DML commands with its Syntax.

<table>
<thead>
<tr>
<th>DDL Commands</th>
<th>Syntax</th>
<th>DML Commands</th>
<th>Syntax</th>
</tr>
</thead>
<tbody>
<tr>
<td>CREATE</td>
<td>CREATE database databasename;</td>
<td>INSERT</td>
<td>INSERT INTO tablename VALUES(value1,value2,value3);</td>
</tr>
<tr>
<td>DROP</td>
<td>DROP database databasename;</td>
<td>DELETE</td>
<td>DELETE from tablename WHERE columnname=&quot;value&quot;;</td>
</tr>
</tbody>
</table>

7. What is view in SQL?
   - **Views** – A set of stored queries. **Example**: create a database to store the personal details.

8. Write the difference between SQL and MySQL

<table>
<thead>
<tr>
<th>SQL</th>
<th>MySQL</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQL is a Structured Query Language</td>
<td>MySQL is a database Software.</td>
</tr>
<tr>
<td>To query and operate database system.</td>
<td>Allows data handling, storing, modifying, deleting.</td>
</tr>
</tbody>
</table>

9. State few advantages of Relational databases.
   - The DBMS provides **create, retrieve, update and manage data**.

10. What is DBMS?
    - A database management system is system software for **creating** and **managing** databases.

11. What is SQL?
    - SQL – Structured Query Language is a standard language used for **accessing** and **manipulating** databases.
1. Explain on Evolution of DBMS.

- Storing the data started before 40 years in various formats.
- In earlier days they have used punched card technology to store the data.
- The file system were indexed, random and sequential access.

2. What is Relationship and List its types.

In ER Model, relationship exists between two entities. Three types of relationships are available in the Entity Relationship:

- One-to-One relationship
- One-to-Many relationship
- Many-to-Many relationship

3. Discuss on Cardinality in DBMS

- Cardinality is defined as the number of items included in a relationship.

Types of Cardinality

- One to One – Ex: Person – Drives – Vehicles
- One to Many – Ex: Customer – Places – Order
- Many to Many – Ex: Student – Register – Course

4. List any 5 privileges available in MySQL for the User.

<table>
<thead>
<tr>
<th>Privilege</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select_Priv</td>
<td>It is used to select rows from database tables.</td>
</tr>
<tr>
<td>Insert_Priv</td>
<td>It is used to insert rows into database tables.</td>
</tr>
<tr>
<td>Update_Priv</td>
<td>It is used to update rows of database tables.</td>
</tr>
<tr>
<td>Delete_Priv</td>
<td>It is used to delete rows of database tables.</td>
</tr>
<tr>
<td>Create_Priv</td>
<td>It is used to create a new tables in database.</td>
</tr>
</tbody>
</table>
5. Write few commands used by DBA to control the entire database.

<table>
<thead>
<tr>
<th>COMMANDS</th>
<th>SYNTAX</th>
</tr>
</thead>
<tbody>
<tr>
<td>USE Database</td>
<td>mysql &gt; test;</td>
</tr>
<tr>
<td>SHOW Databases</td>
<td>mysql &gt; show databases;</td>
</tr>
<tr>
<td>SHOW Tables</td>
<td>mysql &gt; show tables;</td>
</tr>
</tbody>
</table>

6. Types of SQL Commands

<table>
<thead>
<tr>
<th>Data Definition Language</th>
<th>DDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>CREATE, ALTER, DROP, RENAME, TRUNCATE</td>
<td></td>
</tr>
<tr>
<td>Data Manipulation Language</td>
<td>DML</td>
</tr>
<tr>
<td>INSERT, UPDATE, DELETE</td>
<td></td>
</tr>
<tr>
<td>Data Query Language</td>
<td>DQL</td>
</tr>
<tr>
<td>SELECT</td>
<td></td>
</tr>
<tr>
<td>Transaction Control Language</td>
<td>TCL</td>
</tr>
<tr>
<td>COMMIT, ROLLBACK, SET TRANSACTION, SAVEPOINT</td>
<td></td>
</tr>
<tr>
<td>Data Control Language</td>
<td>DCL</td>
</tr>
<tr>
<td>Grant, Revoke</td>
<td></td>
</tr>
</tbody>
</table>
1. Discuss on various Database Models available in DBMS.

### Database Models

- The database technology came into existence in terms of models with **relational** and **object-relational** behavior.

#### Hierarchical Database Model

- In this model each record has information in **parent/child relationship** like a tree structure.
- **Advantages**: less redundant data, efficient search, data integrity, and security.

#### Network model

- In this model each member can have **more than one owner**. The **many to many** relationships are handled in a better way.
- **Network schema** - It is the **structure** of database.
- **Sub schema** - **Controls** on views of the database.
- **Language** - basic **procedural** for accessing the database.

#### Relational model

- Relational model is defined with two terminologies **Instance** and **Schema**. A relation (table) consists of **attributes(columns)** and **tuples(rows)**.
- **Instance** - A table consisting of **rows and columns**.
- **Schema** - The structure including **name** and **type** of each column.

#### Object oriented database model

- In this model serves as the base of **Relational model**. Object oriented model uses small, reusable software known as Objects.
2. List the basic concepts of **ER Model** with suitable example.

**ER modeling basic concepts**

1. Entity or Entity type
2. Attributes
3. Relationship

1. **Entity or Entity type**

An Entity can be anything area-world object or animation. An entity is represented by a rectangular box.

**Types of Entity**

1. Strong Entity
2. Weak Entity
3. Entity Instance

<table>
<thead>
<tr>
<th>Strong Entity</th>
<th>Weak Entity</th>
<th>Entity Instance</th>
</tr>
</thead>
<tbody>
<tr>
<td>A strong entity is the one which <em>doesn’t depend on any other entity</em> on the database. A strong entity will have a primary key with it. It is represented by one rectangle.</td>
<td>A weak entity is dependent on other entities and it <em>doesn’t any primary key</em>. It is represented by double rectangle.</td>
<td>Instances are the values for the entity. We consider animals as the entity. Their instance will be dog, cat, cow...etc.</td>
</tr>
</tbody>
</table>

2. **Attributes**

An attribute is the information about the entity include *quantify, qualify, classify, and specify an entity.*

**Types of attributes**

1. Key Attribute
2. Simple Attributes
3. Composite Attributes
4. Single valued Attribute
5. Multi valued Attribute

3. **Relationship Type**

In ER Model, relationship exists between two entities. Three types of relationships are available in the **Entity Relationship.**

**Relationship Type**

1. One-to-One relationship – (1:1)
2. One-to-Many relationship – (1:N)
3. Many-to-Many relationship – (M:N)
3. Discuss in detail on various types of attributes in DBMS

Attributes

☐ An attribute is the information about the entity include quantify, qualify, classify, and specify an entity.

Types of attributes

1. Key Attribute

☐ Key attributes is a unique characteristic on an entity.

2. Simple Attributes

☐ Simple attributes is a single value for their entity. It cannot be separated.

3. Composite Attributes

☐ Composite attributes is a subdivided into simple attributes.

4. Single Valued Attributes

5. Multi Valued Attributes

Single valued attributes and Multi valued attributes.

<table>
<thead>
<tr>
<th>4. Single Valued Attributes</th>
<th>5. Multi Valued Attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td>A single valued attribute contains only one value for the attribute.</td>
<td>A multi valued attribute has more than one value for that particular attribute.</td>
</tr>
<tr>
<td>Example: Age – 13</td>
<td>Example: Degree – M.Sc., B.Ed.,</td>
</tr>
<tr>
<td>Roll No – 1234</td>
<td>Bank – SBI, IOB</td>
</tr>
</tbody>
</table>
4. INTRODUCTION TO HYPERTEXT PRE-PROCESSOR

2 Mark

1. What are the common usages of PHP?
   - PHP can be used on all major operating systems. Ex. Windows, Linux, Mac OS
   - PHP has also Support for most of the web servers. Ex. Apache and many others.

2. What is a web server?
   - A web server is a software that uses Hypertext Transfer Protocol to serve the files that form web pages to users.

3. What are the types of scripting language?
   - Client-side scripting language
   - Server-side scripting language

4. Difference between Client and Server?

<table>
<thead>
<tr>
<th>Client</th>
<th>Server</th>
</tr>
</thead>
<tbody>
<tr>
<td>Client side environment used to run scripts is usually a browser.</td>
<td>Server side environment that runs a scripting language is a web server.</td>
</tr>
<tr>
<td>Ex. HTML, CSS, JS, etc.</td>
<td>Ex. PHP, Python, etc.</td>
</tr>
</tbody>
</table>

5. Give few examples of Web Browser?
   - Google chrome
   - Mozilla Firefox
   - Opera
   - Safari
   - Internet Explorer
   - UC Browser
6. What is URL?
- URL is a Uniform Resource Locator, the address of a specific Web page or file on the Internet.

7. Is PHP a case sensitive language?
- Yes, PHP a case sensitive language.

8. How to declare variables in PHP?
- Variable name must always begin with a $ symbol. It is never start with a number. Variables are case sensitive.

- Client – Server Architecture is a Server provides resources and services to one or more clients.

10. Define Web server?
- A web server is a software that uses Hypertext Transfer Protocol to serve the files that form Web pages to users. A Web server contains one or more websites.
1. Write the features of server side scripting language.

- Greater protection for user privacy
- Reduces the loading time for web pages.
- Multiple processes for web server.

2. Write is the purpose of Web servers?

A Web server is a software that uses Hypertext Transfer Protocol to serve the files that form Web pages to users. A Web server contains one or more websites.

3. Differentiate Server side and Client Side Scripting language?

<table>
<thead>
<tr>
<th>Client side</th>
<th>Server side</th>
</tr>
</thead>
<tbody>
<tr>
<td>Client side environment used to run scripts is usually a browser.</td>
<td>Server side environment that runs a scripting language is a web server.</td>
</tr>
<tr>
<td>Does not need server interaction</td>
<td>Requires server interaction.</td>
</tr>
<tr>
<td>Ex. HTML, CSS, JS, etc.</td>
<td>Ex. PHP, Python, etc.</td>
</tr>
</tbody>
</table>

4. In how many ways you can embed PHP code in an HTML Page?

- The First way is the HTML outside of your PHP tags.
- The Second way is the HTML with PHP using PRINT or ECHO

5. Write short notes on PHP operator.

1. Arithmetic operators
2. Assignment operators
3. Comparison operators
4. Increment/Decrement operators,
5. Logical operators
6. String operators
1. Discuss in detail about PHP data types

<table>
<thead>
<tr>
<th>Data Types</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>String</strong></td>
<td>String is a collection of characters within the double or single quotes.</td>
<td>&lt;?php&lt;br&gt;$x=&quot;Computer Application&quot;;&lt;br&gt;$=’Computer Application’;&lt;br&gt;?&gt;</td>
</tr>
<tr>
<td><strong>Integer</strong></td>
<td>Integer is a data type which contains non decimal numbers.</td>
<td>&lt;?php&lt;br&gt;$x=1234;&lt;br&gt;?&gt;</td>
</tr>
<tr>
<td><strong>Float</strong></td>
<td>Float is a data type which contains decimal numbers.</td>
<td>&lt;?php&lt;br&gt;$x=1.23;&lt;br&gt;?&gt;</td>
</tr>
<tr>
<td><strong>Boolean</strong></td>
<td>Boolean is a data type which contains the possible two states.</td>
<td>&lt;?php&lt;br&gt;$x=true;&lt;br&gt;$y=false;&lt;br&gt;?&gt;</td>
</tr>
<tr>
<td><strong>Array</strong></td>
<td>Array is a data type which has multiple values in single variable.</td>
<td>&lt;?php&lt;br&gt;$x = array(“Computer”, ”Application”);&lt;br&gt;?&gt;</td>
</tr>
<tr>
<td><strong>Object</strong></td>
<td>Object is a data type which contains information about <strong>data and function</strong> inside the class.</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td></td>
</tr>
</tbody>
</table>
|  | <?php
$School = new School();
?> |

<table>
<thead>
<tr>
<th><strong>NULL</strong></th>
<th>Null is a special data type which contains a single value: <strong>NULL</strong></th>
</tr>
</thead>
</table>
|  | <?php
$x = “Computer Application”
$x = null;
?> |

<table>
<thead>
<tr>
<th><strong>Resource</strong></th>
<th>Resource is a specific variable, it has a <strong>reference to an external resources</strong>.</th>
</tr>
</thead>
</table>
|  | <?php
$x = fopen(“Book .txt”, “r”);
var_dump($x);
?> |
2. Explain Operators in PHP with Example.

Operators in PHP

1. Arithmetic operators
2. Assignment operators
3. Comparison operators
4. Increment/Decrement operators
5. Logical operators
6. String operators

Arithmetic operators

Arithmetic operators in PHP perform addition, subtraction, multiplication, and division.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Operator Name</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>+</td>
<td>Addition</td>
<td>Adding numbers</td>
</tr>
<tr>
<td>-</td>
<td>Subtraction</td>
<td>Subtracting numbers</td>
</tr>
<tr>
<td>*</td>
<td>Multiplication</td>
<td>Multiplying numbers</td>
</tr>
<tr>
<td>/</td>
<td>Division</td>
<td>Dividing numbers</td>
</tr>
<tr>
<td>%</td>
<td>Modulus</td>
<td>Quotient remainder values</td>
</tr>
</tbody>
</table>

Assignment Operators

Assignment operators in PHP perform numeric values to store a value to a variable.

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Description</th>
<th>Assignment</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>x = y</td>
<td>Variable = value</td>
<td>x = x * y</td>
<td>Multiplication</td>
</tr>
<tr>
<td>x = x + y</td>
<td>Addition</td>
<td>x = x / y</td>
<td>Division</td>
</tr>
<tr>
<td>x = x − y</td>
<td>Subtraction</td>
<td>x = x% y</td>
<td>Modulus</td>
</tr>
</tbody>
</table>

Comparison Operators

Comparison operators perform and action to compare two values.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Name</th>
<th>Symbol</th>
<th>Name</th>
<th>Symbol</th>
<th>Operator name</th>
</tr>
</thead>
<tbody>
<tr>
<td>==</td>
<td>Equal</td>
<td>&lt;&gt;</td>
<td>Not equal</td>
<td>&lt;</td>
<td>Less than</td>
</tr>
<tr>
<td>==</td>
<td>Identical</td>
<td>!==</td>
<td>Not Identical</td>
<td>&gt;=</td>
<td>Greater than or equal to</td>
</tr>
<tr>
<td>!=</td>
<td>Not equal</td>
<td>&gt;</td>
<td>Greater than</td>
<td>&lt;=</td>
<td>Less than or equal to</td>
</tr>
</tbody>
</table>
Increment and Decrement Operators

Increment and decrement operators are used to perform increasing and decreasing variable.

<table>
<thead>
<tr>
<th>Operator</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>++$x</td>
<td>Pre-increment</td>
</tr>
<tr>
<td>$x++</td>
<td>Post-increment</td>
</tr>
<tr>
<td>--$x</td>
<td>Pre-decrement</td>
</tr>
<tr>
<td>$x--</td>
<td>Post-decrement</td>
</tr>
</tbody>
</table>

Logical Operators

Logical operators are used to perform conditional statements.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Operator Name</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>&amp; &amp;</td>
<td>AND</td>
<td>$x &amp; &amp; $y</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>!</td>
<td>NOT</td>
<td>! $x</td>
</tr>
<tr>
<td>XOR</td>
<td>XOR</td>
<td>$x xor $y</td>
</tr>
</tbody>
</table>

String Operators

String Operators are used to perform Concatenation and concatenation assignment.

<table>
<thead>
<tr>
<th>Operator</th>
<th>Name</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>.</td>
<td>Concatenation</td>
<td>&amp;text1. $text2</td>
</tr>
<tr>
<td>.=</td>
<td>Concatenation assignment</td>
<td>$text1.=text2</td>
</tr>
</tbody>
</table>
5. **PHP FUNCTION AND ARRAY**

2 Mark

1. **Define Function in PHP**

   A Function is a type of **sub routine or procedure** in a program. A Function will be executed by a **call to the Function** and the Function returns any data type values or **NULL value** is called Function.

2. **Define User Defined Function**

   User defined function in PHP gives a **privilege** to user to write own **specific operation** inside of existing program module.

3. **What is parameterized Function.**

   PHP Parameterized functions are the functions with **parameters or arguments**.

4. **List out System defined functions.**

   ✓ is_bool(),
   ✓ is_int(),
   ✓ is_float()
   ✓ is_null()

5. **Write Syntax of the Function in PHP.**

   Syntax
   
   ```php
   function functionName()
   {
       Code to be executed;
   }
   ```
6. Define Array in PHP

Array is a concept that stores **more than one value** of same data type in single array variable. Array is a data type which has a **multiple values** in a **single variable**.

7. Usage of Array in PHP

Array is a concept that stores more than one value of **same data type** in single array variable. Array is a data type which has a **multiple values** in a **single variable**.

8. List out types of Array in PHP

- Indexed Arrays
- Associative Array
- Multi-Dimensional Array

9. Define Associative Array

Associative arrays are arrays that use **named keys** that you assign to them.

10. Array Syntax in PHP

```
$Array_Variable = array("value1", "value2", "value3");
```

3 Mark

1. Write the features System define Functions

A function is already created by **system** it is a reusable piece or **block of code** that performs a specific action.

2. Write the purpose of parameterized Function

The parameter is also called as **arguments**, it is like **variables**. PHP Parameterized functions are the functions with **parameters or arguments**.
3. Differentiate user defined and system define Functions.

<table>
<thead>
<tr>
<th>User Defined Function</th>
<th>System Define Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>User defined function in PHP gives a privilege to user to write own specific operation inside of existing program module.</td>
<td>A function is already created by system it is a reusable piece or block of code that performs a specific action.</td>
</tr>
</tbody>
</table>

4. Write Short notes on Array

Array is a concept that stores **more than one value** of same data type in single array variable. Array is a data type which has a **multiple values in a single variable**.

- Indexed Arrays
- Associative Array
- Multi-Dimensional Array

5. Differentiate Associate array and Multidimensional array

<table>
<thead>
<tr>
<th>Associate array</th>
<th>Multidimensional array</th>
</tr>
</thead>
<tbody>
<tr>
<td>Associative arrays are arrays that use named keys that you assign to them.</td>
<td>A multidimensional array is an array containing one or more arrays.</td>
</tr>
<tr>
<td><strong>Syntax</strong></td>
<td><strong>Syntax</strong></td>
</tr>
<tr>
<td><code>array(key=&gt;value, key=&gt;value, key=&gt;value...);</code></td>
<td><code>array(elements), array(elements), );</code></td>
</tr>
</tbody>
</table>
1. Explain Function concepts in PHP

### Functions in PHP

A Function is a type of **sub routine or procedure** in a program. A Function will be executed by a call to the Function and the Function returns any data type values or **NULL** value is called Function.

- User defined Function
- Pre-defined or system or built-in function
- Parameterized Function

<table>
<thead>
<tr>
<th>1. <strong>User Defined Function</strong></th>
<th>2. <strong>Function calling</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>User defined function in PHP gives a privilege to user to <strong>write own specific operation</strong> inside of existing program module.</td>
<td>A <strong>function declaration part</strong> will be executed by a call to the function.</td>
</tr>
</tbody>
</table>

**Syntax**

```php
function function_Name() {
    Code to be executed;
}
```

**Example**

```php
<?php
function insert() {
    echo " Student details";
}
insert();    //call the function
?>
```

<table>
<thead>
<tr>
<th>3. <strong>Parameterized Function</strong></th>
</tr>
</thead>
</table>

The parameter is also called as **arguments**, it is like **variables**. PHP Parameterized functions are the functions with **parameters or arguments**.

**Example**

```php
function insert($sname){     // Parameterized function
    echo $sname."Student details";
}
?>
```
2. Explain Array concepts and their types

**Array**

Array is a concept that stores **more than one value** of same data type in single array variable. Array is a data type which has a **multiple values in a single variable**.

**Types of Array in PHP**

- Indexed Arrays
- Associative Array
- Multi-Dimensional Array

**Array Syntax**

```php
$array_variable = array("value1", "value2", "value3");
```

**Indexed Arrays**

The index can be assigned **automatically** in a collection of **data set**.

**Example**

```php
<?php

$student_name = array("name1", "name2", "name3");

?>
```

**Associative Arrays**

Associative arrays are arrays that use **named keys that** you assign to them.

**Syntax**

```php
array(key => value, key => value, key => value);
```

**Multidimensional Array**

A multidimensional array is an array containing **one or more arrays**.

**Syntax**

```php
array(
    array(elements),
    array(elements),
);
```
# PHP Conditional Statements

1. Define Conditional Statements in PHP.

Conditional Statements are useful for writing **decision making logics**. It is most important feature of **many programming languages including PHP**.

2. Define If statement in PHP

If statement executes a **statement or a group of statements** if a specific condition is satisfied **as per the user expectation**.

3. What is If else statement in PHP

If statement executes a statement or a group of statements if a specific condition is satisfied by the **user expectation**.

4. List out conditional statements in PHP

- if Statement
- if…else Statement
- if…elseif…else Statement
- Switch Statement

5. Write Syntax of the If else statement in PHP

```php
if(condition)
{
    Condition is true;
}
else
{
    Condition is false;
}
```

---

Send Your Questions & Answer Keys to our email id - padasalai.net@gmail.com
6. Define If…elseif…else Statement in PHP

If-elseif-else statement is a combination of if-else statement. **More than one statement** can execute the condition based on user needs.

---

7. Usage of Switch statement in PHP

The switch statement is used to perform **different actions** based on **different conditions**.

---

8. Write syntax of Switch statement.

```php
Switch(n){
    case label 1:
        Code to be executed label 1;
        break;
    case label 2:
        Code to be executed label 2;
        break;
    case label 3:
        Code to be executed label 3;
        break;
    ....
    default:
        Code to be executed n;
}
```
9. Compare If and If else statement

<table>
<thead>
<tr>
<th>If Statement</th>
<th>If else Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>• If statement executes a statement or a group of statements if a specific condition is satisfied as per the user expectation.</td>
<td>• If statement executes a statement or a group of statements if a specific condition is satisfied by the user expectation</td>
</tr>
<tr>
<td>• Condition is true.</td>
<td>• Condition is true or false.</td>
</tr>
</tbody>
</table>

3 Mark

1. Write the features conditional statements in PHP

Conditional Statements are useful for writing decision making logics. It is most important feature of many programming languages including PHP.

2. Write is the purpose of if-else-if-else statement.

If-else-if-else statement is a combination of if-else statement. More than one statement can execute the condition based on user needs.

3. Differentiate switch and If else statement

<table>
<thead>
<tr>
<th>Switch statement</th>
<th>If else statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is uses single expression for multiple choices.</td>
<td>It is uses multiple statement for multiple choices.</td>
</tr>
<tr>
<td>It is executed one case after another.</td>
<td>It is executed true or false.</td>
</tr>
<tr>
<td>It is test only for equality.</td>
<td>It is test only for equality as well as logical expression.</td>
</tr>
</tbody>
</table>
4. Write Short notes on Switch statement

The switch statement is used to perform different actions based on different conditions.

Switch statement test only for equality.

5. Differentiate if statement and if-elseif-else statement

<table>
<thead>
<tr>
<th>If statement</th>
<th>If- elseif -else statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is a single statement. No else statement.</td>
<td>It is a combination of if-elseif statement.</td>
</tr>
<tr>
<td>Only one statement s can execute.</td>
<td>More than one statement can executed.</td>
</tr>
<tr>
<td>Condition is false there is no alternatives.</td>
<td>Condition is false more than alternatives.</td>
</tr>
</tbody>
</table>
1. Explain Functions of conditional statements in PHP

**PHP Conditional Statements**

Conditional Statements are useful for writing decision making logics. It is most important feature of many programming languages including PHP.

- if Statement
- if…else Statement
- if…elseif…else Statement
- Switch Statement

**If statement**

If statement executes a statement or a group of statements if a specific condition is satisfied as per the user expectation.

**If …else statement**

If statement executes a statement or a group of statements if a specific condition is satisfied by the user expectation.

**If…elseif…else statement**

If-elseif-else statement is a combination of if-else statement. More than one statement can execute the condition based on user needs.

**Switch statement**

The switch statement is used to perform different actions based on different conditions. Switch statement test only for equality.
2. Discuss in detail about Switch statement with an example

The switch statement is used to perform different actions based on different conditions. Switch statement test only for equality. It is execute one case after another till a break statement.

Syntax

```
Switch(n){
    case label 1:
        Code to be executed label 1;
        break;
    case label 2:
        Code to be executed label 2;
        break;
    case label 3:
        Code to be executed label 3;
        break;
    ..... 
    default:
        Code to be executed n;
}
```
Example

```php
<?php
$favcolor = "red";
switch($favcolor){
    case "red":
        echo "favorite color is red";
        break;
    case "blue":
        echo "favorite color is blue";
        break;
    case "green":
        echo "favorite color is green";
        break;
    default:
        echo "favorite color is neither red, blue nor green";
}
?>
```
7. LOOPING STRUCTURE

1. Define Looping Structure in PHP.

Looping Structures are useful for writing iteration logics. It is the most important feature of many programming languages, including PHP.

2. Define for loop in PHP.

For loop is an important functional looping system which is user for iteration logics.

3. What is for each loop in PHP?

foreach loop is exclusively available in PHP. It works only with arrays. The loop iteration depends on each KEY value in the Array.

4. List out looping Structure in PHP

- For loop
- Foreach loop
- While loop
- Do While loop

5. Write Syntax of for loop in PHP

```php
for (int counter; test counter; increment counter)
{
    Code to be executed;
}
```
6. Write Syntax of For each loop in PHP

```php
for each ($array as $value)
{
    Code to be executed;
}
```

7. Write Syntax of while loop in PHP

```php
While (condition is true)
{
    Code to be executed;
}
```

8. write syntax of Do while loop in PHP

```php
do
{
    Code to be executed;
}while(condition is true);
```

9. Compare for loop and for each loop.

<table>
<thead>
<tr>
<th>For loop</th>
<th>For each loop</th>
</tr>
</thead>
<tbody>
<tr>
<td>for loop is an important functional looping system which is <strong>user for iteration logics</strong>.</td>
<td>foreach loop is exclusively available in PHP. It <strong>works only with arrays</strong>.</td>
</tr>
</tbody>
</table>

10. Usage of for each loop in PHP

   The foreach loop **works only on arrays**, and is used to loop through each **key/value pair** in an array.

Send Your Questions & Answer Keys to our email id - padasalai.net@gmail.com
1. Write the features Looping structure

Looping Structures are useful for writing iteration logics. It is the most important feature of many programming languages, including PHP.

- For loop
- Foreach loop
- While loop
- Do While loop

2. Differentiate for each and while loop

<table>
<thead>
<tr>
<th>foreach loop</th>
<th>While loop</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreach loop is exclusively available in PHP. It works only with arrays. The loop iteration depends on each KEY value in the Array.</td>
<td>While loop is an important feature which is used for simple iteration logics. The condition is true or false</td>
</tr>
</tbody>
</table>

```
foreach ($array as $value)
{
    Code to be executed;
}
```

```
While (condition is true)
{
    Code to be executed;
}
```

3. Differentiate While and Do while loops.

<table>
<thead>
<tr>
<th>While loop</th>
<th>Do while loop</th>
</tr>
</thead>
<tbody>
<tr>
<td>While loop is an important feature which is used for simple iteration logics. The condition is true or false</td>
<td>Do while loop always run the statement inside of the loop block at the first time execution. The condition is true or false</td>
</tr>
</tbody>
</table>

```
While (condition is true){
    Code to be executed;
}
```

```
do{
    Code to be executed;
} while(condition is true);
```
1. Explain Looping Structure in PHP.

Looping Structures are useful for writing iteration logics. It is the most important feature of many programming languages, including PHP.

➢ for loop
➢ foreach loop
➢ While loop
➢ do While loop

**For loop**

For loop is an important functional looping system which is user for iteration logics.

**Foreach loop**

Foreach loop is exclusively available in PHP. It works only with arrays. The loop iteration depends on each KEY value in the Array.

**While loop**

While loop is an important feature which is used for simple iteration logics. The condition is true or false

**Do While loop**

Do while loop always run the statement inside of the loop block at the first time execution. The condition is true or false.
2. Discuss in detail about for each loop.

Foreach loop is exclusively available in PHP. It works only with arrays. The loop iteration depends on each KEY value in the Array.

**Syntax**

```php
for each ($array as $value)
{
    Code to be executed;
}
```

**Example**

```php
<?php

$student_name = array("name1","name2","name3");

foreach($student_name as $value)
{
    echo "$value<br>
```

```php
```
3. Explain the process Do while loop

Do while loop always run the statement inside of the loop block at the first time execution. The condition is true or false.

Syntax

```
do
{
Code to be executed;
}
while(condition is true);
```

Example

```php
<?php
$i=0;

do
{
    echo "The number is: $i";
    $i++;
} while($i<=10);
?>
```
4. Explain concepts of for loop with example

For loop is an important functional looping system which is used for iteration logics.

**Syntax**

```plaintext
for (int counter; test counter; increment counter)
{
    Code to be executed;
}
```

**Example**

```php
<?php
    for($i=0;$i<=10;$i++)
    {
        echo "The number is: $i"
    }
?>
```
3. Explain concepts of if-elseif -else statement

If-elseif-else statement is a combination of if-else statement. More than one statement can execute the condition based on user needs.

**Syntax**

```php
if (1st condition)
{

1st Condition is true;
}
elseif(2nd condition)
{

2nd Condition is true;
}
else
{

Both conditions are false;
}
```

**Example**

```php
<?php
$pass_mark=35;
$firts_class=60;
$student_mark=70;
if($student_mark<=$first_class){
    echo “The student is eligible with the first class”;} elseif($student_mark>$pass_mark){
    echo “The student is eligible”;} else{
    echo “The student is not eligible “;}
?>
```
4. Explain If else statement in PHP

**If else statement**

If statement executes a statement or a group of statements if a specific condition is satisfied by the user expectation.

**Syntax**

```
if(condition)
{
    Condition is true;
}
else
{
    Condition is false;
}
```

**Example**

```php
<?php
$pass_mark=35;
$student_mark=70;
if($student_mark>=$pass_mark){
    echo “The student is eligible”;
}
else{
    echo “The student is not eligible “;
}
?>
```
1. Define HTML form controls

Text inputs contain textbox and text area controls. Buttons may contain Submit button, Reset button and Cancel Button. Form tag is used to control the entire HTML document.

2. Define for Form Handling method in PHP.

- Post Method - it is designed to get data from server.
- Get Method - it is designed to send data to the server.

3. What is Form Validation in PHP?

Validation is a process of checking the input data submitted by the user from client machine.

- Client Side Validation
- Server Side Validation

4. List out HTML control to support PHP language.

- Text inputs
- Buttons
- Checkbox
- Radio box
- File Select
- Form Tag

5. Write Syntax of Text box in HTML

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;input type = “text”&gt;</td>
<td>Defines a one-line text input field.</td>
</tr>
</tbody>
</table>
6. Define **File handling** in PHP

File handling is an important part of any **web application**. PHP has several functions for creating, reading, uploading, and editing files.

7. Define **Browse button** in HTML.

Browse button is used to **upload a single file or multiple files**. It is one of the types of button.

8. Write **Syntax** of **Browse button** in HTML.

**Syntax:**

```
<input type = "file" name = "myfile">
```

9. Compare **Text box** and **Text Area**.

<table>
<thead>
<tr>
<th>Text Box</th>
<th>Text Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text box is generally used for collecting information such as names, email address etc.</td>
<td>Text Area is generally used for feedback or comments. It is a multiline text.</td>
</tr>
<tr>
<td>Tag: <code>&lt;input&gt;</code></td>
<td>Tag: <code>&lt;textarea&gt;</code></td>
</tr>
</tbody>
</table>

10. Usage of **File open** function.

`fopen()` is helps to open a file in the server. It contains **Two parameters**:
1. File
2. Read/Write mode.
1. Write the features of **Form Handling**.
   → Forms are used to get **input** from the **user** and **submit** it to the **web server** for processing.
   → Form tag contains **input box, check boxes radio buttons** etc.
   → It is a **back-end** application. **Form tag** `<form> </form>`.

2. Write the purpose **Get method** and **Post method**.
   - **Get method** displays the form values in the **URL**. `$_GET [variable name];`
   - **Get method** is when submitting login details to the server. `$_POST [variable name];`

3. Differentiate **Get** and **Post Method**.

<table>
<thead>
<tr>
<th>GET</th>
<th>POST</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Values visible in the URL</strong></td>
<td><strong>Values not visible in the URL</strong></td>
</tr>
<tr>
<td><strong>Supports only string data types.</strong></td>
<td><strong>Supports many different data types such as string, numeric, binary etc.</strong></td>
</tr>
<tr>
<td><strong>Faster to send the request</strong></td>
<td><strong>Little slow compare to get method.</strong></td>
</tr>
</tbody>
</table>

4. Write short notes on **File handling**.
   File handling is an important part of any **web application**. You often need to **open** and **process** a file for different tasks. File handling is done by using **any programming language**.

5. Write short notes on **File handling functions**.

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>fopen()</td>
<td>open a file in the server.</td>
</tr>
<tr>
<td>fread()</td>
<td>read a file in the server</td>
</tr>
<tr>
<td>fclose()</td>
<td>used to close an opened file.</td>
</tr>
<tr>
<td>fwrite()</td>
<td>used to write a file</td>
</tr>
</tbody>
</table>
1. Explain Form handling methods

<table>
<thead>
<tr>
<th>1. GET method</th>
<th>2. POST method</th>
</tr>
</thead>
<tbody>
<tr>
<td>The input data sent to the server with POST method via URL address is known as query string. All input data are visible by user after they clicks the submit button.</td>
<td>The input data sent to the server with POST method is stored in the request body of the clients HTTP request.</td>
</tr>
</tbody>
</table>

3. Example:

```html
<html>
<body>
<form action= "welcome.php" method="post">
 Name:<input type="text" name="name"><br>
 E-mail:<input type="text"name="email"><br>
<input type="submit">
</form>
</body>
</html>
```

```php
Welcome.php
<html>
<body>
Welcome
<?php echo $_POST["name"]; ?> <br>
Your email address is: 
<?php echo POST["email"]; ?>
</body>
</html>
```

**Output**

```
Name: sethuraman
E-mail: srssethuraman@gmail.com
Submit
```

**Output**

```
Welcome sethuraman
Your email address is: srssethuraman@gmail.com
```
2. Discuss in detail about **HTML form controls**.

<table>
<thead>
<tr>
<th>Values of type attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text</td>
<td>Create a <strong>Text box</strong>. All kind of text input such as <strong>name</strong>, <strong>address</strong> etc.,</td>
</tr>
<tr>
<td>Password</td>
<td>Similar as Text box. But, while entering data, the characters are appearing as coded symbols such as <strong>Asterisk</strong>.</td>
</tr>
<tr>
<td>Check box</td>
<td>Check box is a <strong>small square box</strong>. It is used to select <strong>multiple</strong> options.</td>
</tr>
<tr>
<td>Radio button</td>
<td>Radio button is a <strong>small circle</strong>. It is used to select <strong>any one</strong> of the multiple options.</td>
</tr>
<tr>
<td>Reset</td>
<td>It is a special command button used to clear all the entries made in the form.</td>
</tr>
<tr>
<td>Submit</td>
<td>It is also special command button used to submit all the entries in the form.</td>
</tr>
<tr>
<td>Button</td>
<td>It is a standard <strong>graphical button</strong> on the form used to call functions on click.</td>
</tr>
</tbody>
</table>

3. **Explain the process File handling**

File handling is an important part of any **web application**. You often need to open and process a file for different tasks. File handling is done by using any **programming language**.

PHP has several functions for creating, reading, uploading, and editing files.

**1. Five major operations file are**

- Creation of a new file
- Opening an existing file.
- Reading data from a file.
- Writing data in a file.
- Closing a file.

**2. Steps for Processing a File**

- Declare a file pointer variable.
- Open a file using fopen() function.
- Process the file using the suitable function.
- Close the file using fclose() function.
4. Explain in detail of File handling functions.

<table>
<thead>
<tr>
<th>File handling Functions</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. PHP Open a File</strong></td>
<td>&lt;?php</td>
</tr>
<tr>
<td>The <code>fopen()</code> is a system function. This function helps to open a file in the server.</td>
<td>$myfile = fopen(“student. txt”,”r”) or die (“Unable to open file”);</td>
</tr>
<tr>
<td>syntax</td>
<td>?&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2. PHP Read a File</strong></td>
<td>&lt;?php</td>
</tr>
<tr>
<td>The <code>fread()</code> function reads from an open a file.</td>
<td>fread($myfile.filesize(“student.txt”));</td>
</tr>
<tr>
<td>syntax</td>
<td>?&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>3. PHP Close a File</strong></td>
<td>&lt;?php</td>
</tr>
<tr>
<td>The <code>fclose()</code> function is used to close an opened file.</td>
<td>$myfile = fopen(“student.txt”, “r”);</td>
</tr>
<tr>
<td></td>
<td>fclose($myfile);</td>
</tr>
<tr>
<td>syntax</td>
<td>?&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>4. PHP Write a File</strong></td>
<td>&lt;?php</td>
</tr>
<tr>
<td>The <code>fwrite()</code> function is used to write a to a file.</td>
<td>$myfile= fopen(“new_file.txt”, “w”);</td>
</tr>
<tr>
<td></td>
<td>$txt = “school name”</td>
</tr>
<tr>
<td></td>
<td>fwrite($myfile,$txt);</td>
</tr>
<tr>
<td></td>
<td>fclose($myfile);</td>
</tr>
<tr>
<td>syntax</td>
<td>?&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>5. PHP Appending a File</strong></td>
<td>&lt;?php</td>
</tr>
<tr>
<td>The <code>file_put_contents()</code> function is used to Append to a file.</td>
<td>$txt=”student id”;</td>
</tr>
<tr>
<td></td>
<td>$myfile= file_put_contents(“FILE_APPEND”);</td>
</tr>
<tr>
<td>syntax</td>
<td>?&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>6. PHP Uploading a File</strong></td>
<td></td>
</tr>
<tr>
<td>File upload is the best feature to select one file from the local machine to server machine.</td>
<td></td>
</tr>
<tr>
<td>“file_uploads = On”</td>
<td></td>
</tr>
</tbody>
</table>
9. CONNECTING PHP AND MYSQL

1. What are the MySQLi function available PHP?
   - `Mysqli_connect()` Function
   - `Mysqli_close()` Function
   - `Mysqli_select_db()` Function
   - `Mysqli_affected_rows()` Function
   - `Mysqli_connect_error()` Function
   - `Mysqli_fetch_assoc()` Function

2. What is MySQLi function?
   MySQLi is an extension in PHP scripting language which gives access to the MYSQL database. MySQLi extension was introduced version 5.0.0.

3. What are the types MySQLi function available PHP?
   - `Mysqli_connect()` Function
   - `Mysqli_close()` Function
   - `Mysqli_select_db()` Function
   - `Mysqli_affected_rows()` Function
   - `Mysqli_connect_error()` Function
   - `Mysqli_fetch_assoc()` Function

4. Difference between Connection and Close function?

<table>
<thead>
<tr>
<th>Connection Function</th>
<th>Close Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>This function is used to connect the database server machine PHP scripting language.</td>
<td>This function is used to close an existing opened database connection between PHP and MySQL Database Server.</td>
</tr>
<tr>
<td>This function requires <strong>four parameters</strong> to connect to database server.</td>
<td>This function requires only <strong>one parameter</strong> to connect to database server.</td>
</tr>
</tbody>
</table>
5. Give few examples of **MySQLi Queries**.

- `mysqli_query($con, "SELECT * FROM Person");`
- `mysqli_query($con, "INSERT INTO Persons (Name, Age) VALUES ('name',18)";

6. What is **connection String**?

A connection string is a string that specifies information about a data source and connecting to it.

7. What is **web Database**?

A web database is a database application designed to be managed and accessed through the Internet.

8. What is **mysqli_fetch_assoc() Function**?

   - The `mysqli_fetch_assoc()` function fetches result row as an associative array.

   **Syntax:** `mysqli_fetch_assoc(result);`

9. Define **mysqli_connect_error() Function**

   - The `mysqli_connect_error()` function returns error description from the last connection.

   **Syntax:** `mysqli_connect_error();`

10. Define **mysqli_affected_rows() function**

    - The `mysqli_affected_rows()` function returns the number of affected rows in the previous SELECT, INSERT, UPDATE, REPLACE, or DELETE query.

    **Syntax:** `mysqli_affected_rows(connection);`
1. Write the Syntax for MySQLi Queries
Syntax: `mysqli_query( "Connection Object", " SQL Query" );`

2. Write is the purpose of MySQLi function available.
MySQLi is extension in PHP scripting language which gives access to the MYSQL database. MYSQLi functions are designed to communicate with MySQL.

3. Differentiate `mysqli_affected_rows()` function and `mysqli_fetch_assoc()` function

<table>
<thead>
<tr>
<th>Mysqli_affected_rows()</th>
<th>Mysqli_fetch_assoc()</th>
</tr>
</thead>
<tbody>
<tr>
<td>The mysqli_affected_rows() function returns the number of affected rows in the previous SELECT, INSERT, UPDATE, REPLACE, or DELETE query.</td>
<td>The mysqli_fetch_assoc() function fetches result row as an associative array.</td>
</tr>
</tbody>
</table>

Syntax: `mysqli_affected_rows(connection);`

Syntax: `mysqli_fetch_assoc(result);`

4. Write MySQL Connection syntax with example

Syntax
```
mysqli_connect( "servername", "username", "password", "DB Name" );
```

Example: `$conn = mysqli_connect($dbhost, $dbuser, $dbpass, $dbname);`

5. Write a note PHP MySQL database connection
- PHP and MySQL has become very popular server side web scripting language in Internet.
- MySQL and PHP scripting language connectivity, which covers Database connection establishment, Database Selection, SQL statement execution, and Connection termination.
1. Discuss in detail about MySQL functions with example

MySQLi is extension in PHP scripting language which gives access to the MYSQL database. MYSQLi extension was introduced version 5.0.0.

➔ MySQL COUNT Function
➔ MySQL MAX Function
➔ MySQL MIN Function
➔ MySQL AVG Function
➔ MySQL SUM Function

1. The MySQL COUNT function is used to count the number of rows in a database table.

   Example: mysql> SELECT COUNT(*) FROM employee;

2. The MySQL MAX function is used to select the highest value for a certain column

   Example: mysql> SELECT MAX(Number) FROM employee;

3. The MySQL MIN function is used to select the lowest value for a certain column.

   Example: mysql> SELECT MIN(Number) FROM employee;

4. The MySQL AVG function selects the average value for certain table column.

   Example: mysql> SELECT AVG(Number) FROM employee;

5. The MySQL SUM function is used to selecting the total for a numeric column.

   Example: mysql> SELECT SUM(Number) FROM employee;
10. INTRODUCTION TO COMPUTER NETWORKS

1. Define Computer Network

A set of computers connected together for the purpose of sharing resource is called as computer networks.

2. Define Internet

The Internet is a network of global connections comprising private, public, business, academic and government networks linked by wireless and fiber-optic technologies.

3. What are the common uses of computer Network.

- Communication
- Resource Sharing
- Data or Software sharing
- Money savings

4. List out some feature of Mobile Network.

- Less consumption of power
- Huge capacity than a large transmitter, at single frequency
- Covering large area than a single transmitter

5. Difference between wired and wireless networks.

<table>
<thead>
<tr>
<th>Wired Network</th>
<th>Wireless Network</th>
</tr>
</thead>
<tbody>
<tr>
<td>A wired network system connected with network cable.</td>
<td>A wireless network is connecting Devices without cables.</td>
</tr>
<tr>
<td>Example: Speakers, CCTV, Printers etc.,</td>
<td>Example: WiFi Tablets, Indoor cameras etc.,</td>
</tr>
</tbody>
</table>
3 Mark

1. Define ARPANET

First in 1969, Advanced Research Projects Agency Network, four nodes of connected between four universities using the 50kbps circuits.

2. What is the usage of cloud storage and cloud computing?

Cloud Storage: Just a storage of data on online, access in different area.

Cloud Computing: It is based on Internet computing, to share resources, software and information.

3. What is meant by Artificial Intelligence?

Artificial intelligence will help to maintain, manage, speech recognition, learning, planning, problem solving and protect it.

4. List out some usefulness of social networks.

✓ Group information sharing over long distances.
✓ Broadcast announcements.
✓ Fostering diversity of thought.

5. How computer networks saves the money saving?

Computer networking, It’s important financial aspect for organization because it saves money. It reduces the paper work, man power and save the time.

5 Mark

1. Mention some uses of network at business, home, mobile, social application.

   Business : Resource Sharing, Server Client Model, Communication Medium, E-Commerce

   Home : Access to remote information, Person to person communication, interactive entertainment, E-commerce.

   Mobile : Hotspots, SMS, GPS, Connectivity etc.

   Social App : Twitter, Face book, Whatsapp, etc.,
2. Define computer networking and Internet. Explain different developments on computer network and Internet.

<table>
<thead>
<tr>
<th>S. No</th>
<th>Period</th>
<th>Method</th>
<th>History</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Late 1950</td>
<td>SAGE (Semi-Automatic Ground Environment)</td>
<td>U.S. Military Radar System</td>
</tr>
<tr>
<td>2</td>
<td>1960</td>
<td>SABRE (Semi Automatic Business Research Environment)</td>
<td>Online connected with Two main frame computers.</td>
</tr>
<tr>
<td>3</td>
<td>1963</td>
<td>Intergalactic Computer Network</td>
<td>Computer engaged to access communication with users of computers.</td>
</tr>
<tr>
<td>4</td>
<td>1965</td>
<td>Telephone Switch</td>
<td>First widely used Telephone switch was introduced by Western Electric</td>
</tr>
<tr>
<td>5</td>
<td>1966</td>
<td>WAN (Wide Area Network)</td>
<td>Published by Thomas and Lawrence in the area of time sharing.</td>
</tr>
<tr>
<td>8</td>
<td>1973</td>
<td>Hosts</td>
<td>Reliable delivery of data.</td>
</tr>
<tr>
<td>9</td>
<td>1973-1979</td>
<td>Ethernet</td>
<td>Distributed Packet switching for local Computer Networks.</td>
</tr>
<tr>
<td>10</td>
<td>1976</td>
<td>ARCNET</td>
<td>First to share the storage device in 1976.</td>
</tr>
<tr>
<td>11</td>
<td>1995</td>
<td>New FIBRE OPTIC CABLES</td>
<td>Highest speeds up to 100 Gbps to grow easily.</td>
</tr>
</tbody>
</table>
3. Explain the Growth of the computer Networking or Explain about the development, merits and demerits in Mobile networks

<table>
<thead>
<tr>
<th>Generation</th>
<th>Start</th>
<th>Data Bandwidth</th>
<th>Technology</th>
<th>Service</th>
<th>Switching</th>
</tr>
</thead>
<tbody>
<tr>
<td>1G</td>
<td>1970-1980</td>
<td>2.4 Kbps</td>
<td>Analog Cellular</td>
<td>Voice</td>
<td>Circuit</td>
</tr>
<tr>
<td>2G</td>
<td>1990-2000</td>
<td>64 Kbps</td>
<td>Digital Cellular</td>
<td>SMS</td>
<td>Circuit, Packet</td>
</tr>
<tr>
<td>2.5G</td>
<td>2001-2004</td>
<td>144 Kbps</td>
<td>GPRS, EDGE, CDMA</td>
<td>SMS, MMS</td>
<td>Packet</td>
</tr>
<tr>
<td>3G</td>
<td>2004-2005</td>
<td>2 Mbps</td>
<td>CDMA 2000, UMTS, EDGE</td>
<td>Audio, Video and data</td>
<td>Packet</td>
</tr>
<tr>
<td>4G</td>
<td>2011 –Now</td>
<td>100 Mbps</td>
<td>WiMax LTE, WiFi</td>
<td>Dynamic Information Access</td>
<td>All Packet</td>
</tr>
<tr>
<td>5G</td>
<td>Soon(2020)</td>
<td>More than 1Gbps</td>
<td>WWWWW</td>
<td>Wearable Devices with AI Capabilities</td>
<td>All Packet</td>
</tr>
</tbody>
</table>
### 11. NETWORK EXAMPLES AND PROTOCOLS

<table>
<thead>
<tr>
<th>2 Mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Define Intranet</td>
</tr>
<tr>
<td>Intranet is a website used by organization to provide a place where employees can access company related information.</td>
</tr>
<tr>
<td>2. What are the uses of mobile networks?</td>
</tr>
<tr>
<td>➔ Can connect the network without cable</td>
</tr>
<tr>
<td>➔ Less consumption of power</td>
</tr>
<tr>
<td>➔ Huge capacity than a large transmitter</td>
</tr>
<tr>
<td>➔ Covering large area than a single transmitter.</td>
</tr>
<tr>
<td>3. List out the benefits of WIFI</td>
</tr>
<tr>
<td>☐ It provides mobility.</td>
</tr>
<tr>
<td>☐ It provides connection to internet.</td>
</tr>
<tr>
<td>☐ Flexibility of LAN.</td>
</tr>
<tr>
<td>☐ Ensures connectivity.</td>
</tr>
<tr>
<td>4. How many types of RFID system available and what are they?</td>
</tr>
<tr>
<td>☐ Active RFID</td>
</tr>
<tr>
<td>☐ Passive RFID</td>
</tr>
<tr>
<td>5. Expand HTTP, HTTPS, FTP</td>
</tr>
<tr>
<td>✓ HTTP – Hypertext Transfer Protocol</td>
</tr>
<tr>
<td>✓ HTTPS – Hypertext Transfer Protocol Secure</td>
</tr>
<tr>
<td>✓ FTP – File Transfer Protocol</td>
</tr>
</tbody>
</table>
# 1. Compare Internet, Intranet and Extranet.

<table>
<thead>
<tr>
<th></th>
<th>Internet</th>
<th>Intranet</th>
<th>Extranet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td>Private</td>
<td>Private</td>
<td></td>
</tr>
<tr>
<td>Large number of</td>
<td>Limited</td>
<td>Limited number of</td>
<td>Limited number of connected devices over Internet</td>
</tr>
<tr>
<td>connected devices</td>
<td>number of</td>
<td>connected devices</td>
<td></td>
</tr>
<tr>
<td>Not owned by anyone</td>
<td>Owned by a</td>
<td>Owned by one or</td>
<td></td>
</tr>
<tr>
<td></td>
<td>particular</td>
<td>more Organizations.</td>
<td></td>
</tr>
<tr>
<td>WWW, Email, Social</td>
<td>Departments,</td>
<td>Suppliers, customer,</td>
<td></td>
</tr>
<tr>
<td>media</td>
<td>company,</td>
<td>and vendors.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>organizations.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

# 2. List out the components of a RFID enabled system.

- **RFID tag**: It has silicon microchip attached to a small antenna and mounted on a substrate.
- **Reader**: It has a scanner with antennas to transmit and receive signals, used for communication.
- **Controller**: It is the host computer with a microprocessor which receives the reader input and process the data.

# 3. Write short notes on HTTP, HTTPS, FTP

- **HTTP**: It is used between a web client and a web server and it guarantees non-secure data transmissions.
- **HTTPS**: It is used between a web client and a web server ensures secure data transmissions.
- **FTP**: It is used between computers for sending and receiving file.
4. What are the layers available in TCP/IP Reference Model?
   - Application Layer
   - Transport Layer
   - Internet Layer
   - Network Access Layer

5. Expand ARP, ICMP, SMTP and DNS.
   - **ARP** - Address Resolution Protocol
   - **ICMP** - Internet Control Message protocol
   - **SMTP** - Simple Mail Transfer Protocol
   - **DNS** - Domain Name System

5 Mark

1. Explain about Internet, Intranet, and Extranet
   - **Internet**: Several networks, *small and big all over the world*, are connected together to form a *Global network* called the Internet.
   - **Intranet**: It is a *website* used by *organization* to provide a place where employees can access *company related information*.
   - **Extranet**: It is a *private network* using Internet technology to share part of business information with *supplier’s partners and customers*. 
2. Discuss about OSI (Open System Interconnection) model with its layers.

<table>
<thead>
<tr>
<th>OSI Layers</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Physical Layer</td>
<td>This is the 1st layer, it defines the electrical and physical specifications for devices.</td>
</tr>
<tr>
<td>2. Data Link layer</td>
<td>This is the 2nd layer, it guarantees that the data transmitted. “802.3 for Ethernet” and “802.11 for Wi-Fi”</td>
</tr>
<tr>
<td>3. Network layer</td>
<td>This is the 3rd layer, determining the path of the data packets is using IP Address.</td>
</tr>
<tr>
<td>4. Transport layer</td>
<td>This is the 4th layer guarantees the sending data is successful. It includes error checking operation.</td>
</tr>
<tr>
<td>5. Session layer</td>
<td>This is the 5th layer identifies the system session between different network entities.</td>
</tr>
<tr>
<td>6. Presentation layer</td>
<td>This is the 6th layer Encryption and decryption protocols occur in this layers such as Secure Socket Layer(SSL)</td>
</tr>
<tr>
<td>7. Application layer</td>
<td>This is the 7th layer it acts the user interface platform comprising of software within the system.</td>
</tr>
</tbody>
</table>

3. Difference between TCP/IP and OSI Reference Model.

<table>
<thead>
<tr>
<th>TCP/IP</th>
<th>OSI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implementation of OSI Model</td>
<td>Reference Model</td>
</tr>
<tr>
<td>4 Layers</td>
<td>7 Layers</td>
</tr>
<tr>
<td>Horizontal approach</td>
<td>Vertical approach</td>
</tr>
<tr>
<td>Supports only connection less Communication.</td>
<td>Supports connectionless and connection-oriented communication</td>
</tr>
<tr>
<td>Protocol dependent standard</td>
<td>Protocol independent standard</td>
</tr>
<tr>
<td>Considered more reliable</td>
<td>Considered a reference tool</td>
</tr>
</tbody>
</table>
### 2 Mark

1. List any four domain names.
   - .com
   - .edu
   - .gov
   - .net

2. What is an IP address?
   - Internet Protocol address is the logical address in the **network layer**.
   - IP address is also used to **find the host system in the whole network**.

3. What are the types of IP address?
   - IPv4 Address
   - IPv6 Address

4. What is an URL?
   - URL (Uniform Resource Locator) is the address of a **document on the Internet**.
   - URL is made up four parts **protocols, host name, folder name and file name**.

5. List out four URLs you know
   - [http://www.google.com](http://www.google.com)
   - [http://www.yahoo.com](http://www.yahoo.com)
   - [http://www.facebook.com](http://www.facebook.com)
   - [http://www.gmail.com](http://www.gmail.com)

6. What are the types of URL?
   - Absolute URL
   - Relative URL
7. What is a domain?

Domain is a **sub tree**, in domain name space **tree structure**. The domain can be further divided into sub domains.

8. What is a Zone?

A group of **contiguous domains** and **sub domains** in the **Domain Name Space**.

9. What is a resolver?

A program which is responsible for **initiating the translation** of a **domain name** into an **IP Address**.

10. What are the categories available in domain name space?

- Commercial Organization
- Educational Institutions
- Government
- Military groups

11. Write any four generic Top Level Domain

- **Com** - Commercial Organization
- **Edu** - Educational Institutions
- **Gov** - Government
- **Mil** - Military groups
1. Write a note on DNS.

Domain Name System an internet service that translates domain name into IP Address.

Ex: www.google.com IP Address: 198.105.232.4


<table>
<thead>
<tr>
<th></th>
<th>IPv4</th>
<th>IPv6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bits</td>
<td>32 bits</td>
<td>128 bits</td>
</tr>
<tr>
<td>Format</td>
<td>Binary and Dotted-decimal notation</td>
<td>Hexadecimal notation</td>
</tr>
<tr>
<td>Addresses</td>
<td>4 billion addresses</td>
<td>16 billion addresses</td>
</tr>
</tbody>
</table>

3. Differentiate Domain Name and URL

<table>
<thead>
<tr>
<th>Domain Name</th>
<th>Uniform Resource Locator (URL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>An identification string that helps to uniquely identify a specific website</td>
<td>Address of a specific webpage or a website on the internet.</td>
</tr>
</tbody>
</table>

Ex: google.com | Ex: http://www.google.com/>

4. Difference between Absolute URL and Relative URL

<table>
<thead>
<tr>
<th>Absolute URL</th>
<th>Relative URL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Used to link web pages on different websites</td>
<td>Used to link web pages within the same website.</td>
</tr>
<tr>
<td>Difficult to manage.</td>
<td>Easy to manage.</td>
</tr>
<tr>
<td>Protocols, hostname, folder name and file name</td>
<td>Folder name and file name.</td>
</tr>
</tbody>
</table>
5. Write a note on domain name.

Domain name is the sequence of labels separated by dot (.) . The domain name is always read from the leaf node to root node. The root node always represent NULL string. So All the domain name ends with dot.

6. Differentiate web address and URL

<table>
<thead>
<tr>
<th>Web Address</th>
<th>URL</th>
</tr>
</thead>
<tbody>
<tr>
<td>A web Address more commonly defines a unique name that helps people remember a URL</td>
<td>A URL is the address of a particular website or document available on the web.</td>
</tr>
<tr>
<td>It is like a memorable street address, can help people find you online.</td>
<td>It is the Internet address of a particular site or document available the world wide web.</td>
</tr>
</tbody>
</table>

5 Mark

1. Classify and Explain the IP address.

Internet Protocol address is simply the logical address in the network layer. Ex: The door number or flat number is used to differentiate individual house from others in the same apartment IP address is also used to find the host system in the whole network.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Deployed</td>
<td>1981</td>
<td>1999</td>
</tr>
<tr>
<td>Address Size</td>
<td>32-bit number</td>
<td>128-bit number</td>
</tr>
<tr>
<td>Address Format</td>
<td>Dotted Decimal Notation</td>
<td>Hexadecimal Notation</td>
</tr>
<tr>
<td>Notation</td>
<td>192.149.252.76</td>
<td>3FFE:F200:0234:AB00:0123:4566:8901:ABCD</td>
</tr>
<tr>
<td>Configuration</td>
<td>Manually or DHCP</td>
<td>Auto-configuration or DHCP</td>
</tr>
<tr>
<td>Number of Address</td>
<td>$2^{32} = 4$ billion address</td>
<td>$2^{128} = 16$ billion address</td>
</tr>
<tr>
<td>Address types</td>
<td>unicast, multicast, broadcast</td>
<td>unicast, multicast, anycast</td>
</tr>
<tr>
<td>Packet Fragmentation</td>
<td>Routers and sending hosts</td>
<td>Sending hosts only</td>
</tr>
</tbody>
</table>
2. Explain briefly the components of DNS.

1. Namespace  
2. Name server  
3. Zone

**Name Space**

The domain names must be very unique and appropriate. The names should be selected from a namespace.

- Flat name space
- Hierarchical name space

**Flat name space**

Flat name space is where the name is assigned to the IP address. They do not have any specific structure.

**Hierarchical name space**

Hierarchical name space is where the name is made up of several parts.

- 1st part - Nature of Organization
- 2nd part – Name of Organization
- 3rd part – Department of Organization

**Name Servers**

Name Server is a main part in the Domain Name System. It translates the domain names to IP addresses. Name server contains the DNS database.

**Types of Name Servers**

**Root Name Server** – top level server which contains entire DNS, maintained by ICANN. There are 13 servers.

**Primary/Master Name Server** – Contains a zone resource records. These records are updatable by domain name holders such as Organizations.

**Secondary/Slave Name Server** – Contains a copy of primary server files. This server has no authority to update, but reduce the workload.

**Zone**

The entire name space is divided into many different zones. Zone is defined as a group of contiguous domains and sub domains. If the zone has a single domain, then zone and domain are the same.
3. Explain about Name Server?

- Name Server is a **main part** in the Domain name System (DNS). It translates the **domain names to IP addresses**.

- Name server contains the **DNS database** which consists of **domain names** and their corresponding **IP addresses**.

- There is a need to **store large number of domains** for the **world wide** usage.

- So, **plenty of servers** are used in the **hierarchical** manner.

- Name servers do the important task of **searching the domain names**.

**Types of Name Servers**

1. **Root Name Server**
   
   Top level server which contains **entire DNS tree, maintained by ICANN**. There are **13 servers**.

2. **Primary/Master Name Server**
   
   It contains a **zone resource records**. These records are **updatable** by domain name holders such as organizations.

3. **Secondary/Slave Name Server**
   
   It contains a copy of **primary server files**. This server has **no authority to update**, but reduce the workload of master server by **sharing the queries**.

4. Explain how the DNS is working.

=> The users enters the URL in the browser, the system first checks its DNS cache for the corresponding IP address.

=> If the IP address is found in the cache then the information is retrieved from cache.

=> The system needs to query the resolver about the IP address from Internet Service Provider (ISP)

=> Each resolver has its own cache and if it is found in that then that information is retrieved.

=> The computer browser which is then viewed by the user.
5. What is domain name space? Explain.

- **Domain name space** was designed to achieve **hierarchical name space**.
- The names are represented as a **tree like structure** with **root element on the top**.
- This tree can have a maximum of **128 levels** starting from root element taking the **level 0 to level 127**.
- Each node in the tree has a **label** and a **domain name**.

**Label**

- It is a string which can have **maximum of 63 characters**.
- Domain is a **sub tree** in domain names space tree structure. The domain can be further divided into **sub domains**.

**Domain Name**

- It is the sequence of labels. In **domain name the sequence of labels** are separated by dot(.)
- The domain name is always read from the **lower level to higher level** form the **leaf node to root node**.
- The root node always represent **NULL string**, all the **domain name ending with dot**.

**Basic Rules of Domain Names**

- Domain can consists of **Alphabets a to z** and the **digits 0 to 9**
- Hyphens are allowed, but **hyphens can not be used as first character** of a domain name.
- **Spaces are not allowed.**
- **Special symbols (!, $, &, _) are not permitted.**
- Domain names have **the minimum length of 2** and **the maximum length of 63 characters**.
- **It may by upper, lower or mixing of both case letters.**
1. Write a note on twister pair cable.

It is a type of cable with **two or more insulated wires** twisted together. It started with the speed of **10 Mbps**.

2. What are the uses of USB cables?

**Universal Serial Bus**, connects all the peripheral devices with the computers.

3. Write a note on the types of RJ45 connector.

There are two wiring schemes available to terminate the **twister-pair cable** on each end, which are **T-568A and T-568B**.

4. What is an Ethernet port?

The Ethernet port is the **jack** where the **Ethernet cable** is to be connected. This port will be there in both the **computers and the LAN port**.

5. What is the use of Crimping tool?

The crimping tool is a **physical tool** which is used to **connect the patch wire** and the **Ethernet connector** (RJ45)

6. What are the types of twisted pair cables?

- Shielded Twister pair (STP)
- Unshielded Twisted Pair (UTP)

7. What is meant by Champ connector?

- **RJ-21** connector has **50 pins with 25 pins** at the one end and **25 pins** at the other end it is also called as **champ connector**.
1. Write a note on crossover cables.

The first coloured wire at one end of the cable is the third coloured wire at the other end of the cable. It is called crossover cables.

2. Write a short note on RJ45 connector.

The RJ45 Ethernet connector is a small plastic cup which will be used to connect the wire inside the connector and ready to use to connect the Internet.

3. What are the differences between serial and parallel ports?

<table>
<thead>
<tr>
<th>Serial port</th>
<th>Parallel port</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 pins</td>
<td>25 pins</td>
</tr>
<tr>
<td>Male port</td>
<td>Female port</td>
</tr>
<tr>
<td>Purple in color</td>
<td>Green in color</td>
</tr>
<tr>
<td>Slower than Parallel port</td>
<td>Faster than Serial port</td>
</tr>
<tr>
<td>2 wires used</td>
<td>8 or more wires</td>
</tr>
</tbody>
</table>

4. What is meant by null modem cable?

A communication method directly connects two computers without modem or any equipment.

5. What are the components involved in Ethernet cabling?

- Patch cable (Twisted pair)
- RJ45 Connector
- Ethernet Ports
- Crimping tool

6. What are the types of Fiber optic cables?

Single mode cables are used for long distance transmission and at a high cost whereas the multimode cables are used for short distance transmission at a very low cost.
1. What is meant by Registered Jack? Explain briefly the types of Jacks.

A Registered Jack commonly known as RJ is a network interface used for network cabling, wiring and jack construction.

The primary function of the registered jack is to connect different data equipment and telecommunication devices.

The commonly known registered jacks are RJ-11, JR-45, RJ-21, and RJ-28.

The Registered Jack refers to the male physical connector (Plug), a female physical connector (Jack) and its wiring.

**RJ-11**

- It is the most popular modern form of registered jack.
- It is found in home and office.
- This Registered jack is mainly used in telephone and landlines.
- There are 6 pin where
  - The two pins give the transmission configuration.
  - The two pins give the receiver configuration.
  - The two pins will be kept for reserved.

**RJ-14 and RJ-61**

- The RJ-14 is the same as RJ-11 which will be used for telephone lines where same it as 6 pins whereas the RJ-61 will have 8 pins.
- This RJ-61 will use the twisted pair cable with a modular connection.

**RJ-21**

- RJ-21 connector has 50 pins with 25 pins at one end and 25 pins at the other end.
- It is also called as champ connector.
- The RJ-21 interface is typically used for data communication trucking applications.
2. Explain wiring techniques used in Ethernet cabling.

There are three types of wiring techniques to construct the Ethernet cable.

1) Straight-Through Wiring

- Ethernet cables used for Ethernet connections are “straight through cables”.
- These cable wires are in the same sequence at both ends of the cable.
- That pin 1 of the plug on one end is connected to pin 1 of the plug on the other end. (T568A & T568B)
- The straight through wiring cables are most used for connecting PC/NIC card to a hub.
- This is a simple physical connection used in printers, computers and other network interfaces.

2) Cross-over Wiring

- Crossover cable is used to connect two computers or Ethernet devices directly together without a hub.
- That pin 1 & 2 of the plug on one end are connected with pin 3 & 6 of the plug on other end.
- The Null modem cables are the example of the crossover cables.

3) Roll-over Wiring

- Rollover cable is a type of null-modem cable that is often used to connect a device console port to make programming changes to the device.
- That pins on one end are connected with other end in reverse order.
- Rollover cable is also known as Yost cable or console cable.
3. Explain the components used in Ethernet cabling.

Three main components are used in the Ethernet cabling.

1. Patch cable (Twisted pair)
2. RJ45 Connector
3. Ethernet Ports
4. Crimping Tool

① Patch Cable (Twisted Pair)

These cables are generally made up of 8 wires in different colors.

Four of them are solid colors and the others are striped.

The eight colors are 1. White green, 2. White orange, 3. White blue, 4. White brown

② RJ45 Connector

The RJ45 connector is a small plastic cup which will be used to connect the wire inside the connector and ready to connect the Internet.

Each RJ45 connector has eight pins and connected to each end of the Ethernet cable.

There are two wiring schemes available to the twisted-pair cable on each end, which are T-568A and T-568B

③ Ethernet card and Port

Ethernet card is a Network Interface Card (NIC) that allows computers to connect and transmit data to the devices on the network.

Ethernet card which is inserted into PCI slot on motherboard of a computer.

Now a days’ most of the computers come with built-in Ethernet cards which resides on motherboard.

④ Crimping tool

The crimping tool is a physical tool which is used to connect the patch wire and the Ethernet connector (RJ45).

The crimping tool looks like a small cutting handle with two mold of Ethernet port.
4. Explain the type of Network Cables.

1. Coaxial Cables
   - This cable was invented at late 1880’s which is used to connect the television sets to home antennas.
   - This cable is used to transfer information in 10 mbps. The cable is divided into thinnet and thicknet cables.
   - Coaxial cables are also used for dish TV where the setup box and television is connected using the coaxial cable only.

2. Twisted Pair Cables
   - It is type of cable with two or more insulated wires twisted together. It started with the speed of 10 mbps.
   - There are two types of twisted pair cables, Unshielded Twisted Pair and Shielded Twisted pair cables

3. Fiber Optics:
   - This cable strands of glass and pulse of light is used to send the information.
   - They are mainly used in Wide Area Network (WAN)
   - These cables are placed in deep underground to avoid any damage to the cables.
   - Single-mode cables are used for long distance transmission and at a high cost.
   - Multi-mode cables are used for short distance transmission at a very low cost.

4. USB Cables
   - The Universal Serial Bus are used to connect keyboard, mouse and other peripheral devices.
   - To connect the Internet through the USB called dongles.
   - The dongle is a small peripheral device with a sim slot and connects the Internet.
Serial and Parallel cables

- In the year of **1980s to 1990s** the Ethernet and the USB were not developed.
- Then the Serial and Parallel interface cables are used to connect the Internet to the system.
- The serial port will send **1 bit at one time**. The parallel port will send **8 bit at one time**.
- Parallel cables are used to connect to the **printer and other disk drivers**.

Ethernet Cables

- Ethernet cable is the most common type of network cable mainly used for connecting the computer or devices at home or office.
- This cable connects wired devices within the **local area network** for sharing the resources and accessing Internet.
- This cable works at a speed of **10Gbps and more**.

3. Explain about RJ45 Connector

- The RJ45 connector is a **small plastic cup** which will be used to connect the wire inside the connector and ready to connect the Internet.
- The RJ45 connector looks similar like a **telephone jack** but it looks a slightly wider.
- The Ethernet cables are sometime called as **RJ45 cables**.
- In RJ45 the “RJ” stands for the **Registered Jack** and “45” simply refers to the number of interface standard in the cable.
- Each RJ45 connector has **eight pins** and connected to each end of the **Ethernet cable**.
- There are Two wiring schemes available to the twisted-pair cable on each end, which are **T-568A** and **T-568B**.
14. OPEN SOURCE CONCEPTS

1. What is meant by network simulator?

A network simulator is a **software program** that replicates the functioning of a computer network.

2. What is trace file?

A **document file**, consists of **every incident** happens in a simulation.

3. Write short notes on NS2.

**Network Simulator Version 2** : **OTCL** and **C++** used to create and run NS2. It works on **Windows** and **Linux** that supports **wired** or **wireless** network.

4. Explain NRCFOSS

**National Resource Centre for Free and Open Source Software** an Institution of **Government of India**. To help in development of **FOSS** in India.

5. Write short note on Open NMS?

**Open NMS** (**Network Management System**) is a **free** and **open-source** initiative grade network **monitoring** and **management** platform.

3 Mark

1. What are the uses of Open source Network Software?

   ➔ Select and use any software
   ➔ Without any cost and restrictions.
   ➔ Software are very user friendly.
   ➔ Program writing skills.

2. Explain Free software.

   Free software a concept developed in the **1980s** by an **MIT computer science** researcher, **Richard Stallman** is defined by four conditions, by the nonprofit Free Software Foundation.
3. List out the Popular Open Source Software.

- NS2
- OPEN NMS
- MySQL
- PDF Creator
- Open Office
- ANDROID
- PHP
- FIREFOX

4. Write note on open source hardware.

- Remix
- Remake
- Remanufacture
- Redistribute
- Resell
- Study and Learn

5. What are the main functional areas of Open NMS?

**Service Monitoring**: Network based services ICMP, HTTP, DNS

**Data Gathering**: using SNMP and JMX

**Event Management and Notifications**: alarm and robust announcement system.

6. Explain Types of organizations related to Open Source Software

- Apache Software foundation
- The Document Foundation
- The Eclipse Foundation
- Free Software foundation
- Linux Foundation
- Open Course Ware Consortium
- Open Source Initiative
1. Differentiate Proprietary and open source software.

<table>
<thead>
<tr>
<th>Proprietary Software</th>
<th>Open Source Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is owned by the individual or organization</td>
<td>It is developed and tested through Open Collaboration</td>
</tr>
<tr>
<td>The Project is managed by developers and programmers</td>
<td>The Project is managed by group of individuals or team work</td>
</tr>
<tr>
<td>It provides limited scope with restrictions and all</td>
<td>It provides better flexibility and more freedom</td>
</tr>
<tr>
<td>Not Edit the source code</td>
<td>Edit the source code</td>
</tr>
<tr>
<td>Ex: Android, Firefox etc.,</td>
<td>Ex: Windows, Mac Os etc.,</td>
</tr>
</tbody>
</table>

2. List out the Benefits of Open Source Software

- There are many open source software’s. so, we can select and use any software.
- The complete options of the software can be used without any cost and restrictions.
- We can share our ideas with the team, write the required code and share it with many.
- We can learn many ideas and make our program writing skills more efficient.
- Many open source software are very user friendly.

3. Explain various Open Source License.

<table>
<thead>
<tr>
<th>1. Apache License 2.0</th>
<th>6. MIT License</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. BSD 3-Clause “New” or “Revised” license</td>
<td>7. Mozilla Public License 2.0</td>
</tr>
<tr>
<td>3. BSD 2-Clause “Simplified” or “FreeBSD” license</td>
<td>8. Common Development and Distribution License</td>
</tr>
<tr>
<td>4. GNU General Public License(GPL)</td>
<td>9. Eclipse Public License</td>
</tr>
<tr>
<td>5. GNU Library or “Lesser” General Public License(LGPL)</td>
<td></td>
</tr>
</tbody>
</table>
1. Define E-Commerce.

E-Commerce can be described as the process of buying or selling products, services or information via Internet.

2. Distinguish between E-Business and E-Commerce.

<table>
<thead>
<tr>
<th>E-Commerce</th>
<th>E-Business</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subset</td>
<td>Superset</td>
</tr>
<tr>
<td>Commercial transactions</td>
<td>Business transactions</td>
</tr>
<tr>
<td>Website</td>
<td>Website, CRM, ERP etc.,</td>
</tr>
<tr>
<td>Internet</td>
<td>Internet, Intranet, Extranet</td>
</tr>
</tbody>
</table>

3. Differentiate tangible goods and electronic goods with example of your own.

<table>
<thead>
<tr>
<th>Tangible</th>
<th>Electronic(intangible)</th>
</tr>
</thead>
<tbody>
<tr>
<td>They have a physical Existence.</td>
<td>They do not have a physical Existence.</td>
</tr>
<tr>
<td>Ex: Vehicle, plant, machinery etc.,</td>
<td>Ex: Software, Logo, patent etc.,</td>
</tr>
</tbody>
</table>

4. What is dotcom bubble and dotcom burst?

- The Dotcom Bubble was a historic excessive growth.
- The Dotcom Burst was Nasdaq-Composite stock market index.

5. Write a short note on out-sourcing.

- Hiring third party service providers to handle business on behalf.

6. Write a short note on the third wave of E-Commerce.

The third wave is brought on by the mobile technologies. It connects users via mobile devices for real-time and on-demand transactions.
3 Mark

1. Describe how E-Commerce is related to socio-technological changes.
   - Growth of E-Commerce is also related to the socio-technological changes.
   - Increase of users increases the markets.
   - Technology facilitates E-Commerce’s growth.

   B2B E-Commerce, commercial transactions take place between different business organizations, through the Internet. Ex: A cycle company may buy tyres from another company for their cycles.

3. Write a note on name-your-price websites.
   These websites generate revenue through affiliate links, sponsored advertisement or even a small commission in every booking. Ex: Name-your-price websites.

4. Write a note on physical product dispute of E-Commerce.
   Physical product disputes are a major disadvantage in E-commerce. E-commerce purchases are often made on trust. This is because, we do not have physical access to the product.

5 Mark

1. Write about the development and growth of Electronic Commerce.
   ❶ The First Wave of Electronic Commerce: 1995-2003
      The Dotcom companies of first wave are mostly American companies. Websites were only in English.
      The second wave is the rebirth of E-Commerce after the dotcom burst. The second wave is considered as the global wave.
   ❸ The Third Wave of Electronic Commerce: 2010-Present
      The third wave is brought on by the mobile technologies. It connects users via mobile devices for real-item and on-demand transactions.
2. List all the E-Commerce Business models and explain any four briefly.

1. Business to Business (B2B)

   B2B E-Commerce, commercial transactions take place between different business organizations, through the Internet. Ex: A cycle company may buy tyres from another company for their cycles.

2. Business to Consumer (B2C)


3. Business to Government (B2G)

   B2G is a business model that refers to business organizations sells products, services or information to Governments. Ex: A Government buys laptops for students from a business.

4. Consumer to Business (C2B)

   C2B is websites generate revenue through affiliate links, sponsored advertisement or even a small commission in every booking. Ex: Name-your price websites.

5. Consumer to Consumer (C2C)

   C2C in E-Commerce provides opportunity for trading of products or services among consumers who are connected through the Internet. Ex: Olx.com
6. Consumer to Government (C2G)

C2G models usually include income tax or house tax payments, fees for certificates or other documents. Ex: People paying for renewal of license online.

7. Government to Business (G2B)

G2B is a part of e-governance, provides information about business rules, requirement and permission needed for starting new business. Ex: websites support auctions, tenders and application submission.

8. Government to Consumer (G2C)

G2C in E-Commerce is very similar to C2G. The government provides platform for its citizens to services and information through internet. Ex: paying taxes, registering vehicles etc.,

9. Government to Government (G2G)

G2G is the online interaction between Government organizations or departments.

Ex: internal facing or local level, External facing or international level.

<table>
<thead>
<tr>
<th>3. How would you differentiate a traditional commerce and E-Commerce?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Traditional Commerce</strong></td>
</tr>
<tr>
<td>Traditional commerce is buying or selling of products and services physically.</td>
</tr>
<tr>
<td>Scope of business in limited to particular area.</td>
</tr>
<tr>
<td>Resource focus supply side.</td>
</tr>
<tr>
<td>Business Relationship is Linear (face to face).</td>
</tr>
<tr>
<td>Marketing is one way marketing.</td>
</tr>
<tr>
<td>Payment: is made by cash, cheque, cards etc.</td>
</tr>
<tr>
<td>Most goods are delivered instantly.</td>
</tr>
</tbody>
</table>
4. Explain any five E-Commerce revenue models.

   ① Affiliate site

   The affiliate site may be a price comparison service or shopping. Ex: offering more information.

   ② Auction site

   Auction site is a kind of website, that auctions items on the Internet and some commission from the sales Ex: ebay.com

   ③ Banner advertisement site

   Banner advertisement site displays advertisements of other companies in its websites and earns revenue.

   ④ Bulk-buying sites

   Bulk-buying sites collect a number of users together all of who want to buy similar items. The site negotiates a discount with the supplier and takes a commission.

   ⑤ Digital publishing sites

   This sites e-books or magazines on the web. Profits in a number of ways such as advertising, selling etc.,

   ⑥ Licensing sites

   Licensing sites allow other websites to make use of their software. Ex: search engines which allow a visitor of the site to search within the website more easily.

   ⑦ Name-your-price sites

   It is normal retail sites. The retailer for a particular product or service.

   ⑧ Online shopping mall site

   It allows multi E-Commerce traders to assemble together on a single website.

   Ex: All sell Luxury goods.
5. What are the advantages and disadvantages of E-Commerce to a consumer?

Advantages of E-Commerce

- E-Commerce system is operated on all days business 24 x 7.
- Speed is a major advantage in E-Commerce.
- More cheaper and effective product.
- Comparing and evaluating the same product at different websites.
- Customers can shop from home or anywhere.
- Payments can also be made through online.

Disadvantages of E-Commerce

- E-Commerce we should wait between placing the order and the product in hand.
- We can see pictures of a cloth, but not its quality.
- Delivery and security issues.
- The possibility of credit card number theft.
- Transaction problems.
- Lack of touch and feel of product.
1. Define Electronic Payment System.

Electronic payment refers to a payment made from one bank account to another bank account using electronic methods.

2. Distinguish micro electronic payment and macro electronic payment.

<table>
<thead>
<tr>
<th>Micro electronic payment</th>
<th>Macro electronic payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-line payment system designed to allow efficient and frequent payments of small amounts.</td>
<td>Macro electronic payment systems support payments of higher value.</td>
</tr>
<tr>
<td>In order to keep transaction costs very low, the communication and computational costs are minimized here.</td>
<td>The security requirements are more rigorous in macro payment systems because of huge money transactions.</td>
</tr>
</tbody>
</table>

3. List the types of micro electronic payments based on its algorithm.

Hash chain, Hash Collisions, Shared secret keys, probability based micro electronic payment systems.

4. Explain the concept of e-wallet.

Electronic purses allow users to make electronic transactions quickly and securely.

5. What is a fork in crypto currency?

The authors make only a few minor changes in parameters like time, date, distribution of blocks, number of coins, etc. These currencies are called as fork.
1. Define micro electronic payment and its role in E-Commerce.

Micro electronic payment is an on-line payment system designed to allow efficient and frequent payments of small amounts.

Role in E-Commerce
- Electronic payment for online transactions
- Increasingly popular due to the widespread use of the internet-based shopping and banking.

2. Compare and contrast the credit card and debit card.

<table>
<thead>
<tr>
<th>Credit card</th>
<th>Debit card</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit card is pay later.</td>
<td>Debit card is pay now.</td>
</tr>
<tr>
<td>Interest is charged</td>
<td>No interest is charged.</td>
</tr>
<tr>
<td>To pay the credit card bill within 30 days of every month</td>
<td>The amount is directly deducted from the customer’s Account</td>
</tr>
</tbody>
</table>

3. Explain briefly Anatomy of a credit card.

- Plastic cards of size: 85.60 mm width x 53.98 mm height
- Rounded corners with a radius: 2.88mm to 3.48mm
- Thickness: 0.76mm

4. Briefly explain the stored value card and its types.

Stored value card is a type of debit card that is pay before. Customers don’t need to have a bank account. Types: Closed loop (single purpose) Ex: Chennai metro rail travel card. Open loop (multipurpose) Ex: Visa Gift cards.

5. Write a note on mining in crypto currency.

The crypto currency units are created by the solution of cryptographic tasks called mining. The miners not only generate new monetary units, but also initiate new transactions to the block chain.
1. What is credit card? Explain the key players of a credit card payment system and bring out the merits of it.

**Credit card**

- Credit card is an electronic payment system normally used for retail transactions.
- A credit card enables the bearer to buy goods or services from a vendor, based on the cardholder’s promise to the value later with an agreed interest.

**Key players in operations of credit card**

1. **Bearer**
   
   The holder of the credit card account who is responsible for payment of invoices in full or portion of the balance.

2. **Merchant**
   
   Storekeeper or vendor who sell or providing service, receiving payment made by its customers through the credit card.

3. **Acquirer**
   
   Merchant’s bank that is responsible for receiving payment on behalf of merchant send authorization requests to the issuing bank through the appropriate channels.

4. **Credit card Network**
   
   It acts as the intermediate between the banks. That process credit card payments worldwide and interchange fees. Ex: Visa, MasterCard, Rupay

5. **Issuer**
   
   Bearer’s bank, that issue the credit card, set limit of purchases, decides the approval of transactions, issue invoices for payment, charges the holders etc.,
2. Briefly explain Electronic Account Transfer and its types.

**Electronic Account Transfer**

Apart from card based payment systems there are many alternative electronic payment systems.

**Types of Electronic Account Transfer**

1. ECS (Electronic Clearing Services)
2. EFT (Electronic funds transfers)
3. RTGS (Real Time Gross Settlement System)

**Electronic Clearing Services (ECS)**

- Electronic clearing service can be defined as repeated transfer of funds from one bank account to multiple bank accounts or using computer and internet technology.

**Electronic Funds Transfer**

- Electronic Funds Transfer is the “electronic transfer” of money over and online network.
- Bank may charge commission for using this service.
- The amount sent from the *sender’s bank branch* is credited to the *receiver’s bank branch* on the same day in batches.

**Real Time Gross Settlement (RTGS)**

- Real Time Gross Settlement system (RTGS) is a payment system particularly used for the settlement of transactions between financial institutions, especially banks.
- Real-item gross settlement is generally employed for *large-value* interbank funds transfers.
- *High-value payment* settlements among financial institutions.
3. Write a note on a) Internet banking b) Mobile banking

a) Internet banking

 ArrayBuffer Internet banking is a online banking, E-banking, virtual banking , direct banks, web banking and remote banking.

 ArrayBuffer This is a very fast and convenient way of performing any banking transactions.

 ArrayBuffer The online banking system will typically connect to the core banking system operated by customers themselves (Self-Service banking)

 ArrayBuffer It enables customers of a bank to conduct a wide range of financial transactions through its website.

b) Mobile banking

 ArrayBuffer The term mobile banking also called m-banking refers to the services provided by the bank to the customer of mobile phones.

 ArrayBuffer These transactions include balance checking, account transfers, payments, purchases etc.

 ArrayBuffer transactions can be done at any time and any where.

4. What is crypto currency? Explain the same.

 ArrayBuffer A crypto currency is a unique virtual asset designed to work as a medium of exchange using cryptographic algorithm.

 ArrayBuffer This algorithm secures the transactions by recording it in block chain and controls the creation of additional units of the currency.

 ArrayBuffer Crypto currency is also called as crypto coins, e-cash, alternative currencies or virtual currencies and are classified as a subset of digital currencies.

 ArrayBuffer Crypto currency can be defined as distributed accounting system based on cryptography, storing information about the state of ownership in conventional units.

 ArrayBuffer The state of ownership of a crypto currency is related to individual system blocks called “portfolios”. 
5. Explain in detail: Unified Payments interface

- **Unified Payments Interface** is a real-time payment system developed by National Payments Corporation of India (NPCI) to facilitate inter-bank transactions.

- It is simple, **secure and instant payment** facility.

- UPI is developed on the basis of **Immediate Payment Service (IMPS)**.

- **Global address** includes bank account numbers and IFSC.

- **Local address** is a **virtual payment** address.

- UPI **withdraws and deposits** funds directly form the bank account whenever a transaction is requested.

**Advantages.**

- **Immediate money transfers** through mobile device round the clock 24x7.

- Can use **single mobile application** for accessing **multiple bank accounts**.

- **Single click Authentication** for **transferring** of fund.

- It is **not required** to details such as Card no, Account number, IFSC etc. for every transaction.

- Electronic payments will become much easier without requiring **digital wallet or credit or debit card**.
### 17. E-COMMERCE SECURITY SYSTEMS

1. Write about information leakage in E-Commerce.
   - The content of the transaction between the **vendor and customer** is stolen by the third party.
   - The documents provided by the merchant to the customer or **illegally used by the another**.

2. Write a short note on typopiracy.
   
   Some **fake websites** try to take advantage of users common **typographical errors** typing a **website address** and direct users to a different website. Ex: [www.goggle.com](http://www.goggle.com), [www.faceblook.com](http://www.faceblook.com)

3. Define not-repudiation.
   
   **Non-repudiation**: prevention against **violation agreement** after the deal.
   
   It ensures that the signer who digitally signed the document **cannot deny** having signed it.

4. List the different types of security technologies in E-commerce.
   
   - Encryption technology
   - Authentication technology
   - Authentication protocols

5. Write about digital signature.
   
   A digital signature is a mechanism that is used to verify that a **particular digital document, message or transaction** is authentic.

### 3 Mark

1. Write a note on certification authorities (CA)
   
   Digital certificate is an **electronic document** used to prove the ownership of a public key. This certificate includes the information about the sender’s **identity, digital signatures, passports and driving licenses**. **Digital certificates** are issued by recognized **Certification Authorities (CA)**. 

---

Send Your Questions & Answer Keys to our email id - padasalai.net@gmail.com
2. List some E-Commerce Security Threats?

- Information leakage
- Tampering
- Payment frauds
- Malicious code threats
- Distributed Denial of Service Attacks
- Cyber Squatting
- Typopiracy

3. Differentiate asymmetric and symmetric algorithms.

<table>
<thead>
<tr>
<th>Symmetric Key Encryption</th>
<th>Asymmetric Key Encryption</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Same key</strong> is used for both encryption and decryption</td>
<td><strong>Different keys</strong> are used for encryption and decryption</td>
</tr>
<tr>
<td>Speed of encryption or decryption is <strong>very fast</strong></td>
<td>Speed of encryption or decryption is <strong>slow</strong></td>
</tr>
<tr>
<td>Plain text and cipher text are of <strong>same size</strong></td>
<td>The size of cipher text is always <strong>greater than</strong> plain text.</td>
</tr>
</tbody>
</table>

4. Write a note on PGP.

Pretty Good Privacy (PGP) encryption uses a serial combination of hashing, data compression, symmetric-key cryptography and **works on the concept of “web of trust”**

5. Explain 3D secure payment protocols.

3D Secure is a **secure payment protocol** on the Internet. It was developed by Visa to increase the level of transaction security, and it has been adapted by Master Card.

- Acquirer Domain
- Issuer Domain
- Interoperability Domain
1. Write about dimensions of E-Commerce Security.

- **Authenticity**: conforming genuineness of data shared.
- **Availability**: prevention against data delay or removal.
- **Completeness**: unification of all business information.
- **Confidentiality**: protecting data against unauthorized disclosure.
- **Effectiveness**: effective handling of hardware, software and data.
- **Integrity**: prevention of the data being unaltered or modified.
- **Non-repudiation**: prevention against violation agreement after the deal.
- **Privacy**: Prevention of customers personal data being used by others.
- **Reliability**: providing a reliable identification of the individuals or businesses.
- **Review ability**: capability of monitoring activities to audit and track the operations.

2. Differentiate Digital Signatures and Digital Certificates.

<table>
<thead>
<tr>
<th>Digital Signature</th>
<th>Digital Certificate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital Signature is a mechanism that is used to verify that a <strong>particular digital document</strong>.</td>
<td>Digital Certificate is a computer file Which officially approves the certificate.</td>
</tr>
<tr>
<td>Digital signatures are used to verify the trustworthiness of the data being <strong>sent</strong>.</td>
<td>Digital certificates are used to verify the trustworthiness of the <strong>sender</strong>.</td>
</tr>
<tr>
<td>It provides <strong>authentication, non-repudiation and integrity</strong>.</td>
<td>It provides <strong>authentication and security</strong>.</td>
</tr>
<tr>
<td>A digital signature is created using a <strong>Digital Signature Standard</strong> (DSS). Ex: SHA1 SHA2</td>
<td>A digital certificate works o the principles of <strong>public key cryptography standards</strong> (PKCS). Ex: X.509 or PGP format.</td>
</tr>
<tr>
<td>The document is encrypted at the <strong>sending end</strong> and decrypted at the <strong>receiving end</strong> using <strong>asymmetric keys</strong>.</td>
<td>A digital certificate consist of certificates <strong>owner name</strong> and public key, <strong>expiration date</strong>, <strong>Certificate Authority’s name</strong> and digital Signature.</td>
</tr>
</tbody>
</table>
3. Explain Encryption technology.

1. Encryption technology

Encryption technology is an effective information security protection. It is defined as converting a Plaintext into meaningless Cipher text using encryption algorithm thus ensuring the confidentiality of the data.

Two Encryption technologies

- Symmetric key encryption
- Asymmetric key encryption

2. Symmetric key encryption

- The Data Encryption Standard (DES) is a Symmetric key data encryption method.
- Same key is used for both encryption and decryption.
- Speed of encryption or decryption is very fast.
- Plain text and cipher text are of same size.
- Algorithms like DES, AES,RC4 uses symmetric key encryption.
- Provides confidentiality.

3. Asymmetric key encryption

- The Rivest Shamir Adleman (RSA) is a Asymmetric key encryption method.
- Different keys are used for encryption and decryption.
- Speed of encryption or decryption is slow.
- The size of cipher text is always greater than plain text.
- Algorithms like RSA,ECC,DSA use asymmetric key encryption.
- Provides confidentiality, authenticity and non-repudiation.
4. Define Secure Electronic Transaction (SET) and its features.

- Secure Electronic Transaction is a security protocol for electronic payments with credit cards, in particular via the Internet.
- SET was developed in 1996 by VISA and Master Card, with the participation of GTE, IBM, Microsoft and Netscape.
- SET is based on the use of digital signatures and the encryption of transmitted data with asymmetric and symmetric encryption algorithms.

Features

- Using public key encryption and private key encryption ensure data confidentiality.
- Use information digest technology to ensure the integrity of information.
- Dual signature technology to ensure the identity of both parties in the transaction.


- The most common Cryptographic protocol is Secure Sockets Layers.
- SSL is a hybrid encryption protocol for securing transactions over the Internet.
- User using an internet browser to connect to an SSL secured E-Commerce site.
- Today, all browsers in the market support SSL, and most of the Secure Communications.
- The URL starts with https:// instead of http:// where the “s” obviously means Secured.
18. ELECTRONIC DATA INTERCHANGE -EDI

1. Define EDI.

The Electronic Data Interchange is the exchange of business documents between one trade partner and another electronically.

2. List few types of business documents.

- Delivery notes
- Invoices
- Purchase orders
- Advance ship notice
- Functional acknowledgements

3. What are the 4 major components of EDI?

- Standard document format
- Translator and Mapper
- Communication software
- Communication network

4. What is meant by directories EDIFACT?

The versions of EDIFACT are also called as directories. These EDIFACT directories will be revised twice a year.

5. Write a note on EDIFACT subsets.

Due to the complexity, branch-specific subsets of EDIFACT have developed.

Example:

CEFIC – Chemical industry
EDIFURN – Furniture industry
EDIGAS – gas business
1. Write a short note on EDI.

The Electronic Data Interchange is the exchange of business documents between one trade partner and another electronically. *Delivery notes, invoices, purchase orders, advance ship notice, functional acknowledgements etc.*

2. List the various layers of EDI.

- Semantic layer
- Standards translation layer
- Transport layer
- Physical layer

3. Write a note on UN/EDIFACT.

United Nations/Electronic Data Interchange For Administration, Commerce and Transport (UN/EDIFACT) is an International EDI – standard developed under the supervision of the United Nations.

4. Write a note on EDIFACT message.

The basic standardization concept of EDIFACT is that there are uniform message types called United Nations Standard Message (UNSM). Six uppercase English alphabets. The message begins with UNH and ends with UNT.

5. Write about EDIFACT separators.

<table>
<thead>
<tr>
<th>Character</th>
<th>Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apostrophe '</td>
<td>Segment terminator</td>
</tr>
<tr>
<td>Plus sign +</td>
<td>Segment tag and data element separator</td>
</tr>
<tr>
<td>Color :</td>
<td>Component data element separator</td>
</tr>
<tr>
<td>Question mark ?</td>
<td>Release character</td>
</tr>
<tr>
<td>Period .</td>
<td>Decimal point</td>
</tr>
</tbody>
</table>
1. Briefly explain various types of EDI.

- **Direct EDI/Point-to-Point**
  It is also called as Point-to-Point EDI. It establishes a direct connection between various business stakeholders and partners individually.

- **EDI via VAN**
  EDI via VAN (Value Added Network) is where EDI documents are transferred with the support of third party network service providers.

- **EDI via FTP/VPN, SFTP,FTPS**
  When protocols like FTP/VPN, SFTP and FTPS are used for exchange of EDI based documents through the Internet or Intranet.

- **Web EDI**
  Web based EDI conducts EDI using and web browser via the Internet. To use any browser to transfer data to their business partners. Web based EDI is easy and convenient for small and medium organizations.

- **Mobile EDI**
  Smart phones or other such handheld devices are used to transfer EDI documents it is called as mobile EDI. Mobile EDI applications considerably increase the speed of EDI transactions.

2. What are the advantages of EDI?

- ✔ Improving service to end users
- ✔ Increasing productivity
- ✔ Minimizing errors
- ✔ Slashing response times
- ✔ Automation of operations
- ✔ Cutting costs
- ✔ Integrating all business and trading partners
- ✔ Providing information on process status
- ✔ Optimizing financial ratios
3. Write about structure of EDIFACT.

EDIFACT is a hierarchical structure where the top level is referred to as an interchange, and lower levels contain multiple messages. The message consist of segments. The final iteration is a data element.

 rapidement  Segment Tables

Segment table lists the message tags. Ex: C10 indicates repetitions of a segment or group between 0 and 10.

rapidamente  EDI Interchange

- Interchange is also called as envelope.
- The top level of EDIFACT structure is Interchange.
- Interchange may contain multiple messages. It starts with UNB and ends with UNZ.

rapidamente  EDIFACT Message

The basic standardization concept of EDIFACT is the there are uniform message types called United Nations Standard Message (UNSM). The message begins with UNH and ends with UNT.

rapidamente  EDIFACT Segments

It is the subset of message. A segment is a three-character alphanumeric code. Segments may contain one or several related user data elements.

rapidamente  EDIFACT Elements

The elements are the piece of actual data. These data elements may be either simple or composite.