HIGHER SECONDARY – SECOND YEAR

XII – COMPUTER APPLICATIONS

REDUCED SYLLABUS

MINIMUM STUDY MATERIAL

2021-2022
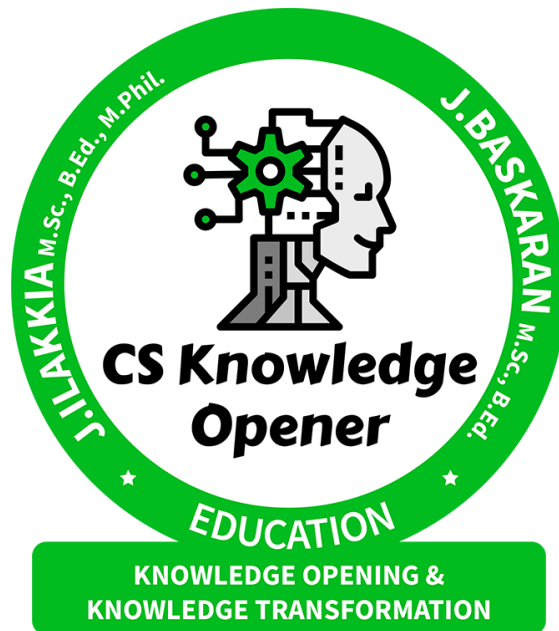
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STD & GROUP	

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COMPUTER APPLICATIONS – II YEAR

1. MULTIMEDIA AND DESKTOP PUBLISHING

Section – A

Choose the best answer (1 Mark)

1. _____ refers to any type of application that involves more than one type of media such as text, Graphics, video, animation and sound.

    a) an executable file   b) desktop publishing   **c) multimedia**   d) hypertext

2. One of the disadvantages of the multimedia is its __

    a) cost   b) adaptability   c) usability   d) relativity

3. Expand JPEG

    a) joint photo experts gross   **b) Joint Photographic Experts Group**

    c) joint processor experts group   d) joint photographic expression group

4. You need hardware, software and _____ to make multimedia

    a) Network   b) compact disk drive   **c) good idea**   d) programming knowledge

5. Match the following by choosing the right one

    1. Text   –   TGA

    2. Image   –   MIDI

    3. Sound   –   MPEG

    4. Video   –   RTF

    a. 1, 2, 3, 4   b. 2, 3, 4, 1   **c. 4, 1, 2, 3**   d. 3, 4, 1, 2

6. Find the odd one on the following which is not an image format.

    a) TIFF   b) BMP   **c) RTF**   d) JPEG

7. _____ is the process displaying still images they give continuous movement.

    a) Text formats   b) Sound   c) MP3   **d) Animation**

8. The live telecasting of real time program through Internet is known as ____

    a) Web casting   b) web hosting   c) data manipulation   d) none of the above

9. GIF use _____ color look up table

    a) 8 bit   **b) 13 bit**   c) 8 MB   d) 13 MB

10. RTF file format was introduced by_____

    a) TCS   **b) Microsoft**   c) Apple   d) IBM

Section-B

Answer the following questions (2 Mark)

6. List out image file formats

    1. TIFF (Tagged Image File Format)

    2. BMP (Bitmap)

    3. DIB (Device Independent Bitmap)

    4. GIF (Graphics Interchange Format)

    5. JPEG (Joint Photographic Experts Group)

7. List out audio file formats

    1. WAV (Waveform Audio File Format)

    2. MP3 (MPEG Layer-3 Format)

    3. OGG

    4. AIFF (Audio Interchange File Format)

5. WMA (Windows Media Audio)

8. List out video file formats

1. AVI (Audio/Video Interleave)
2. MPEG (Moving Picture Experts Group)
3. WMV (Windows Media Video)
4. 3GP
5. FLV (Flash Video)

9. Define Multimedia Production.

- This phase includes the activities like background music selection, sound recording and so on.
- Text is incorporated using OCR software, Pictures shot by digital camera, and Video clips are shot, edited and compressed.

10. List out Multimedia Production team members

- The Multimedia Production team comprises of members like Script writer, Production manager, Editor, Graphics Architect, Multimedia Architect, Programmer, and Web Master.

Section-C

Answer the following questions **(3 Mark)**

3. Write roles and responsibilities of Production team members

a. Production Manager

- The role of production manager is to define, and coordinate, the production of the multimedia project in time and with full quality.

b. Content Specialist

- Content specialist is responsible for performing all research activities concerned with the proposed application's content.

c. Script Writer

- The script writer visualizes the concepts in three dimensional environments

d. Text Editor

- The Text Editor checks the flow of text, structure and correct it grammatically.

e. Multimedia Architect

- The multimedia architect integrates all the multimedia building blocks using an authoring tools.

4. Describe the various file formats in multimedia

1. Text File Formats

- RTF(Rich Text Format)
- Plain text

2. Image File Formats

- TIFF (Tagged Image File Format)
- BMP (Bitmap)
- DIB (Device Independent Bitmap)
- GIF (Graphics Interchange Format)
- JPEG (Joint Photographic Experts Group)

3. Digital Audio File Formats
- WAV (Waveform Audio File Format)
- MP3 (MPEG Layer-3 Format)
- OGG
- AIFF (Audio Interchange File Format)
- WMA (Windows Media Audio)

4. Digital Video File Formats
- AVI (Audio/Video Interleave)
- WMV (Windows Media Video)
- FLV (Flash Video)
- 3GP
- MPEG (Moving Picture Experts Group)

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Section - D

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Answer the following questions: **(5 Mark)**

1. Explain in detail Process of Multimedia.

The phases for development of complex multimedia projects are,

    1. Conceptual Analysis and Planning:
- Conceptual analysis identifies a appropriate theme, budget and content availability on that selected theme.

    2. Project design:.
- General statements ⟶ Goals.
- Specific statements ⟶ Objectives.

    3. Pre-production:

    Based on the planning and design the project is developed.

  STEPS IN PRE-PRODUCTION:

❖ **Budgeting** for each phases like consultants, hardware, software, travel, communication and publishing is estimated for all the multimedia projects.

❖ **Multimedia Production Team** comprises of members playing various roles and responsibilities like Script writer, Production manager, Editor, Graphics Architect, Multimedia Architect and Web Master.

❖ **Hardware Selection** includes the selection of fastest CPU, RAM and huge monitors, sufficient disc for storing the records.

❖ **Software Selection and File Formats** depends on the funds available for the project.

❖ **Defining the Content** is the "stuff " provided by content specialist to the multimedia architect

❖ **Preparing the structure:**
- A detailed structure must have information about all the steps.
- This structure defines the activities, responsible person and the start/end time for each activity.

    4. Production:
- This phase includes the activities like background music selection, sound recording and so on.
- A pilot project is ready by this time.

5. Testing:
- The complete testing of the pilot product is done before the mass production to ensure that everything is right, and avoiding the failure after launch. .

6. Documentation:
- The documentation has all the valuable information's starting from the system requirement till the completion of testing.

7. Delivering the Multimedia Product: Are best delivered on CD/DVD or in the website.

4. Explain in detail about production team Roles and Responsibilities

1. Production Manager
- The role of production manager is to define, and coordinate, the production of the multimedia project in time and with full quality.

2. Content Specialist
- Content specialist is responsible for performing all research activities concerned with the proposed application's content.

3. Script Writer
- The script writer visualizes the concepts in three dimensional environments and if needed uses the virtual reality integration into the program.

4. Text Editor
- The content of a multimedia production always must flow logically and the text should always be structured and correct grammatically.

5. Multimedia Architect
- The multimedia architect integrates all the multimedia building blocks like graphics, text, audio, music, video, photos and animation by using an authoring software.

6. Computer Graphic Artist
- Computer Graphic Artist deals with the graphic elements of the programs like backgrounds, bullets, buttons, pictures editing,3-D objects, animation, and logos etc.

7. Audio and Video Specialist
- Audio and Video Specialist are needed for dealing with narration and digitized videos to be added in a multimedia presentation.

8. Computer Programmer
- These scripts usually develop special functions like developing the software to give the size and shape of video windows controlling peripherals and so on.

9. Web Master
- The responsibility of the web master is to create and maintain an Internet web page.
- They convert a multimedia presentation into a web page.

5. Explain about different file formats in multimedia files

1. Text File Formats
- RTF(Rich Text Format)

  Rich Text Format is the primary file format introduced in 1987 by Microsoft

- Plain text

  Plain text files can be opened, read, and edited with most text editors.

2. Image File Formats

- **TIFF (Tagged Image File Format)**
  - ➢ This format is common in desktop publishing world (high quality output)
  - ➢ Supported by almost all software packages.
- **BMP (Bitmap)**
  - ➢ BMP is used for the high-resolution or large images.
- **DIB (Device Independent Bitmap)**
  - ➢ Allows the files to be displayed on a variety of devices.
- **GIF (Graphics Interchange Format)**
  - ➢ GIF is a compressed image format.
  - ➢ This file format is best suitable for graphics that uses only limited colors

3. Digital Audio File Formats

- **AIFF (Audio Interchange File Format)**
- ➢ A standard audio file format used by Apple which is like a WAV file for the Mac.
- **WAV (Waveform Audio File Format)**
- ➢ It is the most popular audio file format in windows for storing uncompressed sound files.
- **MP3 (MPEG Layer-3 Format)**
- ➢ MPEG Layer-3 format is the most popular format for storing and downloading music.
- **WMA (Windows Media Audio)**
- ➢ **It is a popular windows media audio format owned by Microsoft. WMA is a file extension used with windows media player.**

4. Digital Video File Formats

- **AVI (Audio/Video Interleave)**
- ➢ AVI is the video file format for Windows.
- ➢ Here sound and picture elements are stored in alternate interleaved chunks in the file.
- **MPEG (Moving Picture Experts Group)**
- ➢ MPEG is the standards for digital video and audio compression.

2. AN INTRODUCTION TO ADOBE PAGEMAKER

Section – A

Choose the best answer   **(1 Mark)**

4. In PageMaker Window, the area outside of the dark border is referred to as _____.

  (a) page   **(b) pasteboard**   (c) blackboard   (d) dashboard

6. A _____ tool is used for magnifying the particular portion of the area.

  (a) Text tool   (b) Line tool   **(c) Zoom tool**   (d) Hand tool

7. _____ tool is used for drawing boxes.

  (a) Line   (b) Ellipse   **(c) Rectangle**   (d) Text

10. Character formatting consists of which of the following text properties?

  (a) Bold   (b) Italic   (c) Underline   **(d) All of these**

11. Which tool lets you edit text?

  (a) Text tool   (b) Type tool   (c) Crop tool   (d) Hand tool

12. Shortcut to print a document in Pagemaker is _____

      (a) Ctrl + A   **(b) Ctrl + P**   (c) Ctrl + C   (d) Ctrl + V

13. Adobe PageMaker is a **page layout** software.

16. **Ellipse** tool is used to draw a circle.

19. Choose the odd man out.

i. Adobe PageMaker, QuarkXPress, Adobe In Design, **Audacity**

iv. Bold, Italic, **Portrait**, Underline

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Section-B

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Answer the following questions   **(2 Mark)**

9. What is text block?

- In PageMaker the text of the document can be typed inside a **text block.**
- **Text tool is used** to create text blocks.
- After creating a Text block, you can type the text directly into the text block.

10. What is threading text blocks?

- A Text block can be connected to other text block to enable the flow of text.
- Text blocks that are connected in this way are **threaded**.
- The process of connecting text among Text blocks is called **threading text**.

11. What is threading text?

- Text blocks that are connected are said to be **threaded**.
- The process of connecting text among Text blocks is called **threading text**.

12. How do you insert a page in PageMaker?

To insert pages

1. Go to the page where you want to insert.

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

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

4. To insert pages after the current page, choose 'after' from the pop-up menu.

5. Click on Insert.

6. The new pages are inserted in your publication

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Section-C

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Answer the following questions   **(3 Mark)**

1. What is PageMaker? Explain its uses.

- Adobe PageMaker is **a page layout software**.
- Page layout software includes tools that allow you to easily position text and graphics on document pages.
- **Example:** Creating a newsletter that includes articles and pictures on each page using PageMaker.

4. How do you rejoin split blocks?

Rejoining Split Blocks:

To rejoin the two text blocks,

1. Place the cursor on the bottom handle of the second text block, click and drag the bottom handle up to the top.

2. Then place the cursor on the bottom handle of the first text block, and click and drag the bottom handle down if necessary.

5. How do you link frames containing text?

1. Draw a **second frame** with the Frame tool of your choice.

2. Click the **first frame** to select it.

3. Click on the **red triangle** to load the text icon.

4. Click the **second frame**.

5. PageMaker flows the text into the second frame.

6. What is the use of Master Page?

- Any text or object that you place on the master page will appear on the entire document pages to which the master is applied.
- Master Pages commonly contain repeating logos, page numbers, headers, and footers.
- Master items cannot be selected on a document page.

7. How do you insert page numbers in Master pages?

1. Click on Master Pages icon.

2. Then click on Text Tool. Now the cursor changes to I - beam.

3. Then Click on the left Master page where you want to put the page number.

4. Press Ctrl + Alt + P.

5. The page number displays as 'LM' on the left master page.

6. Similarly click on the right Master page where you want to put the page number.

7. Press Ctrl + Alt + P.

8. The page number displays as 'RM' on the right master page

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Section - D

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Answer the following questions: **(5 Mark)**

2. Write the steps to place the text in a frame.

To place 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 (Rectangle frame tool or Ellipse Frame Tool or Polygon frame Tool).

3. Click on File.

4. Click on Place.

5. Locate the document that contains the text you want to place, select it.

6. Click on Open.

7. Click in a frame to place the text in it.

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.

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?

Drawing a Star using Polygon tool

- **To draw a Star**

   1. Click on the **Polygon tool** from the toolbox. The cursor changes to a **crosshair**.

   2. Click and drag anywhere on the screen.

   3. Release the mouse button when the Polygon is of the desired size.

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

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

   6. Type 50% in Star inset textbox.

   7. Click OK.

3. INTRODUCTION TO DATABASE MANAGEMENT SYSTEM

Section – A

Choose the best answer   **(1 Mark)**

2. The ---------- diagram gives a logical structure of the database graphically?

   a) Entity-Relationship   b) Entity   c) Architectural Representation   d) Database

3. An entity set that does not have enough attributes to form primary key is known as

   a) Strong entity set   **b) Weak entity set**   c) Identity set   d) Owner set

5. MySQL belongs to which category of DBMS?

   a) Object Oriented   b) Hierarchical   **c) Relational**   d) Network

6. MySQL is freely available and is open source.

   a) True   b) False

7. ---------- represents a "tuple" in a relational database?

   a) Table   **b) Row**   c) Column   d) Object

8. Communication is established with MySQL using

   a) SQL   b) Network calls   c) Java   d) API's

9. Which is the MySQL instance responsible for data processing?

   a) MySQL Client   **b) MySQL Server**   c) SQL   d)Server Daemon Program

Section-B

Answer the following questions   **(2 Mark)**

2. List few disadvantages of file processing system.

- **Data Duplication** – Same data is used by multiple resources for processing, thus created multiple copies of same data wasting the spaces.
- **High Maintenance** – Access control and verifying data consistency needs high maintenance cost.
- **Security** – Less security provided to the data.

3. Define Single and multi-valued attributes.

- **Single Valued Attributes**
   - A single valued attribute contains only one value for the attribute and they don't have multiple numbers of values.
   - **Example:** Age
- **Multi Valued Attributes**
   - A multi valued attribute has more than one value for that particular attribute.
   - **Example:** Degree

5. What are the ACID properties?

ACID Properties – The acronym stands for Atomicity, Consistency, Isolation and Durability.

8. Write the difference between SQL and MySQL.

SQL	MySQL
▪ SQL – Structured Query Language is not a database.	▪ MySQL is a database management system
▪ Used to access the database	▪ Allows managing relational databases

9. What is Relationship and List its types.

- In Entity Relationship Model, relationship exists between two entities.
- Three types of relationships are,
    1. One-to-One relationship
    2. One-to-Many relationship
    3. Many-to-Many relationship

10. State few advantages of Relational databases.

➢ The features of RDBMS are

- High Availability
- High Performance
- Robust Transactions and support
- Ease of management
- Less cost
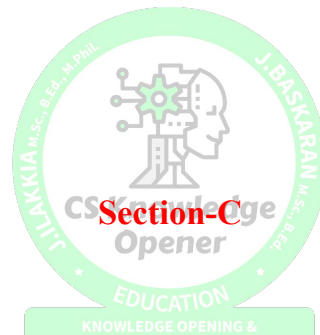
Section-C

Answer the following questions   **(3 Mark)**

1. Explain on Evolution of DBMS.

- The concept of storing the data started before 40 years in various formats.
- Punched card technology was used to store the data.
- The file systems were known as predecessor of database system.
- Various access methods in file system were indexed, random and sequential access.

2. What is relationship in databases? List its types.

- In Entity Relationship Model, relationship exists between two entities.
- Three types of relationships are,
    - 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 that must be included in a relationship.
- Cardinality is a number of entities in one set mapped with the number of entities of another set via the relationship.
- Three classifications in Cardinality are one-to-one, one-to-many and Many-to-Many.

<div align="center">**Section - D**</div>

Answer the following questions: **(5 Mark)**

2. List the basic concepts of ER Model with suitable example.

- ER model consists of a collection of entities where each of these entities will be interconnected with each other with conditions and dependencies.

ER Modeling Basic Concepts

The basic concepts of ER model consists of

1. Entity or Entity type

2. Attributes

3. Relationship

Entity or Entity type

An Entity can be anything a real-world object or animation which is easily identifiable by anyone even by a common man.

An entity is represented by a rectangular box.

Example: In a company's database Employee, HR, Manager are considered as entities

Types of Entity:

➢ **Strong Entity:**

- A Strong entity is the one which doesn't depend on any other entity on the database with a primary key
- It is represented by one rectangle.

➢ **Weak Entity:**

- A weak entity is dependent on other entities and it doesn't have any primary key.
- It is represented by double rectangle.
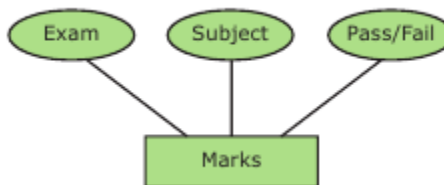
➢ **Entity Instance:**

- Instances are the **values** for the entity
- Entity Instance denotes the category values for the given entity.

Entity Instances	
Entity	**Instances**
Human	Male , Female

Attributes

- An attribute is the information about that entity and it will describe, quantify, qualify, classify, and specify an entity.

Types of attributes:

1. Key Attribute   - Unique characteristic of an entity.

2. Simple Attributes   - Cannot be separated

3. Composite Attributes   - Can be subdivided into simple attributes

4. Single Valued Attribute - Contains only one value

5. Multi Valued Attribute   - Has more than one value

Relationship:

- In Entity Relationship Model, relationship exists between two entities.
- Three types of relationships are,
  - One-to-One relationship
  - One-to-Many relationship
  - Many-to-Many relationship

3. Discuss in detail on various types of attributes in DBMS.

Attributes

➢ An attribute is the information about that entity and it will describe, quantify, qualify, classify, and specify an entity.

➢ An attribute will always have a single value, that value can be a number or character or string.
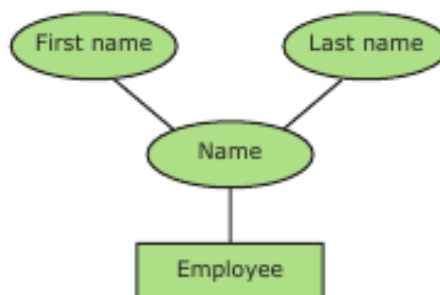
Types of attributes:

1. Key Attribute

2. Simple Attributes

3. Composite Attributes

4. Single Valued Attribute

5. Multi Valued Attribute

➢ **Key Attribute**
  - A key attribute describes a unique characteristic of an entity.

➢ **Simple Attribute**
  - The simple attributes cannot be separated it will be having a single value for their entity.

  - **Example:** Name is the attribute for the entity employee and here the value for that attribute is a single value.

➢ **Composite Attributes**
  - The composite attributes can be subdivided into simple attributes without change in the meaning of that attribute.
  - **Example:** In the above diagram the employee is the entity with the composite attribute Name which are sub-divided into two simple attributes first and last name.

➢ **Single Valued Attributes:**
  ▪ A single valued attribute contains only one value for the attribute and they don't have multiple numbers of values.

| Single Valued Attributes	
Attribute	**Values**
Age	3

  ▪ **Example: Age-** It is a single value for a person as we cannot give n number of ages for a single person

➢ **Multi Valued Attributes:**
  ▪ A multi valued attribute has more than one value for that particular attribute.
  ▪ **Example: Degree -** A person can hold n number of degrees so it is a multi-valued attribute.

Attributes and Values	
Attribute	**Values**
Degree	B.Tech, MBA

4. INTRODUCTION TO HYPERTEXT PRE-PROCESSOR

Section – A
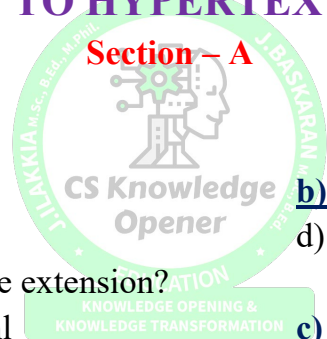
Choose the best answer   **(1 Mark)**

1. What does PHP stand for?
    a) Personal Home Page   **b) Hypertext Preprocessor**
    c) Pretext Hypertext Processor   d) Pre-processor Home Page

2. What does PHP files have a default file extension?
    a) .html   b) .xml   **c) .php**   d) .ph

3. A PHP script should start with ____and end with ___:
    a) <php>   b) < ? php ?>   c) < ? ? >   **d) <?php ?>**

4. Which of the following must be installed on your computer so as to run PHP script?
    a) Adobe   b) windows   **c) Apache**   d) IIS

5. We can use ____ to comment a single line?
    i) /?   ii) //   iii) #   iv) /* */
    a) Only (ii)   b) (i), (iii) and (iv)   c) (ii), (iii) and (iv)   **d) Both (ii) and (iii)**

6. Which of the following PHP statement/statements will store 41 in variable num?
    (i) $num = 41   (ii) num = 41   (iii) echcho num   (iv) echo 41
    a) Both (i) and (ii)   b) All of the mentioned.   c) Only (iii)   **d) Only (i)**

7. What will be the output of the following PHP code?
    <?php
    $num = 1;
    $num1 = 2;
    print $num . "+". $num1 ;
    ?>
    a) 3   **b) 1+2**   c) 1.+.2   d) Error

8. Which of the following PHP statements will output Hello World on the screen?
   a) echo ("Hello World");   b) print ("Hello World");
   c) printf ("Hello World");   d) sprintf ("Hello World");
9. Which statement will output $x on the screen?
   a) echo "\\$x";   b) echo "$$x";   c) echo "/$x";   d) echo "$x;
10. Which of the below symbols is a newline character?
   a) \r   **b) \n**   c)/n   d)/r

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Section-B

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Answer the following questions   **(2 Mark)**

1. What are the common usages of PHP?
- It is very simple and lightweight open source server side scripting language.
- It can easily embed with HTML and other client side scripting languages like CSS (Cascading Style Sheets) and Java script.

2. What is Webserver?
- Webserver is software which is running in server hardware.
- It takes the responsibilities for compilation and execution of server side scripting languages.
- **Example:** Apache Tomcat, Microsoft IIS

3. What are the types scripting language?
- Web scripting languages are classified into two types,
  - Client side scripting language
  - Server side scripting language.

4. Difference between Client and Server?

CLIENT	SERVER
The client is a separate hardware machine which is connected with server in the network.	The server is a high performance hardware machine it could run more than one application concurrently.
Client is a service requester	Server is a service provider

5. Give few examples of Web Browser?
- Google Chrome
- Mozilla Firefox
- Opera
- Safari
- Internet Explorer
- Netscape Navigator

6. What is URL?
- URL means Uniform Resource Locator.
- It is the address of a resource on the internet.
- It indicates the location of a resource and the protocol used to access it.

7. Is PHP a case sensitive language?

* Yes, PHP is a case sensitive language both upper and lower case are treated differently.
* **Example:** $x and $X are different variable names.

8. How to declare variables in PHP?

* The variable in PHP begins with a **dollar ($)** symbol.
* The assignment activity implemented using **"="** operator.
* Finally the statement ends with semi colon **";"**, it indicates the end of statement.

9. Define Client Server Architecture.

* A server is a computer or a device that provides functionality for other programs or devices, called "clients".
* This architecture is called the client server model.

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Section-C

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Answer the following questions   **(3 Mark)**

3. Differentiate Server side and Client Side Scripting language.

Client Side Scripting Language
• Works at the client machine and script are visible among the users.
• Does not need server interaction.
• Insecure
• HTML, CSS, JavaScript, etc.

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

* PHP is designed to interact with HTML and PHP scripts.
* In an HTML page, PHP code is enclosed within special PHP tags in two ways,
  * ➢ PHP in HTML using a **PHP script tags** ⟶ <?php ?>
  * ➢ PHP in HTML using **Short_tags** ⟶ <? ?>

5. Write short notes on PHP operator.

* Operator is a symbol which is used to perform mathematical and logical operations in the programing languages.
* **TYPES OF OPERATOR**:

  1. Arithmetic operators

  2. Assignment operators

  3. Comparison operators

  4. Increment/Decrement operators

  5. Logical operators

  6. String operators

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Section - D

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Answer the following questions: **(5 Mark)**

1. Explain client side scripting language.

Client Side Scripting Language:

* ➢ Using HTML we can develop a static web pages.
* ➢ To develop a interactive pages (Dynamic Web page) we need a scripting language.

➢ JavaScript is a Client Side Scripting Language used in a client machine.

➢ JavaScript programming language is embed into the html.

➢ User entered data in the Dynamic Web page can be validated before sending it to the server.

2. Discuss in detail about Website development activities.

- The process of Web Development also includes Web content generation, Web page designing, Website security and so on.

PHP Script used in Web Development:

- Website or Web page is developed by the programmer using PHP script.

- Finally the entire Website codes are moved to Web server path in a remote server machine.

- From client side, the end user opens a browser, types the URL of the Website or Webpage and initiates the request to remote server machine over the network.

- After receiving the request from client machine the Web server tries to compile and interpret the PHP code which is available in remote machine.
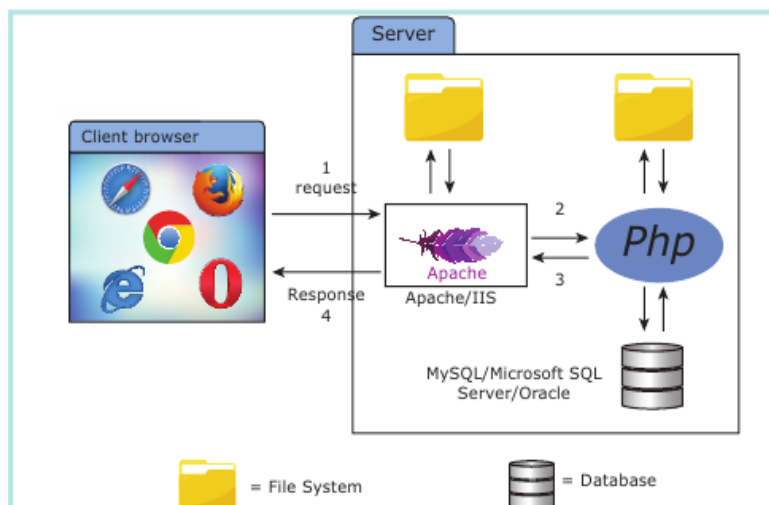
4. Discuss in detail about PHP data types.

- PHP scripting language supports 13 primitive data types.
- PHP supports the following data types.

    1. String

    2. Integer

    3. Float

    4. Boolean

    5. Array

    6. Object

    7. NULL

    8. Resource

1. String:

- String is a collection of characters within the double or single quotes like "Computer Application" or
- 'Computer Application'. Space is also considered as a character.

Example:

$x = "Computer Application!";

$y = 'Computer Application';

2. Integer:

- Integer is a data type which contains non decimal numbers.

Example:

$x = 5;

3. Float:

- Float is a data type which contains decimal numbers.

Example:

$x = 19.15;

4. Boolean:

- Boolean is a data type which denotes the possible two states, TRUE or FALSE.

Example:

$x = true;

5. Array:

- Array is a data type which has multiple values in single variable.

Example:

$cars = array("Swift","Kwid","Alto");

var_dump($cars);

> **Var_dump:**
>   - The var_dump() function is used to dump information about a variable.

7. Object:

- PHP object is a data type which contains information about data and function inside the class.

8. NULL:

Null is a special data type which contains no value.

Example:

$x = null;

9. Resources

- Resource is a specific variable, it has a reference to an external resource.
- These variables hold specific handlers to handle files and database connections in respective PHP program.

5. Explain operators in PHP with example.

- Operator is a symbol which is used to perform mathematical and logical operations in the programing languages.
- Different types of operator in PHP are:
    1. Arithmetic operators,
    2. Assignment operators,
    3. Comparison operators,
    4. Increment/Decrement operators,
    5. Logical operators, and
    6. String operators.
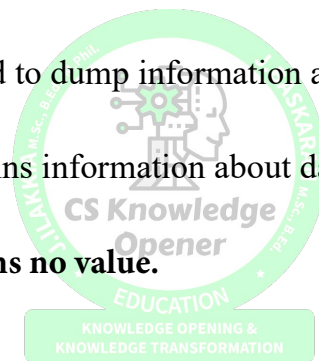
Arithmetic operators

- The arithmetic operators in PHP perform general arithmetical operations, such as addition, subtraction, multiplication and division etc.

Symbol	Operator Name
+	Addition
-	Subtraction
*	Multiplication
/	Division
%	Modulus

Assignment Operators:

- Assignment operators are performed with numeric values to store a value to a variable.
- The default assignment operator is "=".
- This operator sets the left side operant value of expression to right side variable.

Assignment	Similar to
x = y	x = y
x += y	x = x + y
x -= y	x = x - y
x *= y	x = x * y
x /= y	x = x / y
x %= y	x = x % y

Comparison Operators:

- Comparison operators perform an action to compare two values.
- These values may contain integer or string data types (Number or Strings).

Symbol	Operator Name	Symbol
= =	Equal	>
= = =	Identical	<
!=	Not equal	>=
< >	Not equal	<=
!= =	Not identical	

Increment and Decrement Operators:

- Increment and decrement operators are used to perform the task of increasing or decreasing variable's value.
- This operator is mostly used during iterations in the program logics.

Operator	Name
++$x	Pre-increment
$x++	Post-increment
--$x	Pre-decrement
$x--	Post-decrement

Logical Operators:

- Logical Operators are used to combine conditional statements.

Symbol	Operator Name	Example
&&	And	$x && $y
||	Or	$x || $y
!	Not	!$x
xor	Xor	$x xor $y

String Operators:

- Two operators are used to perform string related operations such as Concatenation and Concatenation assignment (Appends).

Operator	Name	Example
.	Concatenation	$text1 . $ text2
. =	Concatenation assignment	$text1 .= $ text2

5. PHP FUNCTION AND ARRAY

Section – A

Choose the best answer   **(1 Mark)**

1. Which one of the following is the right way of defining a function in PHP?
   a) function { function body }
   b) data type functionName(parameters) { function body }
   c) functionName(parameters) { function body }
   d) function functionName(parameters) { function body }

2. A function in PHP starts with __.
   a) function   b) __ def   c) def   d) function name

3. PHP's numerically indexed array begin with position _____
   a) 1   b) 2   **c) 0**   d) -1

4. Identify the parameter in the function
   <? php
   Function abc ($x)
   {$y=10;}
   Abc (5);
   ?>
   a) $x   b) $y   c) 10   d) 5

5. _____ stores more than one value of same data type in single array variable.

    a) Array   b) Function   c) Indexed array   d) Multidimensional array

6. Associative arrays are a _____ pair data structure.

    a) Single value   **b) Key value**   c) Double value   d) String value

7. In parameterized, the parameters are like _____

    a) Variables   b) Constants   c) String   d) Null value

8. In PHP array are of _____ types

    a) 1   b) 2   **c) 3**   d) 4

9. $stud = array("Roll" => 12501, "Name" => "Hari"); Identify the type of array.

    a) Indexed array   **b) Associative array**   c) Vector array   d) Multidimensional array

10. Array more than _____ levels deeps are hard to manage

    a) 1   b) 2   **c) 3**   d) Multiple

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Section-B

</div>

Answer the following questions   **(2 Mark)**

3. What is parameterized Function.

- PHP Parameterized functions are the functions with parameters or arguments.
- **Values can be passed from one function to another function through parameters.**
- Required information can be shared between function declaration and function calling part inside the program.

6. Define Array in PHP.

- An Array is a special variable that stores **more than one value of same data type** (homogeneous) in single array variable.

8. List out the types of array in PHP.

Associative Array ⟹ Associative arrays are a key-value pair data structure.

Indexed Arrays ⟹ An array is defined using the keyword "array".

Multi-Dimensional Array ⟹ A multidimensional array is an array containing one or more arrays.

9. Define associative array.

- Associative arrays are a key-value pair data structure.
- Instead of storing data in a linear array, with associative arrays you can store your data in a collection and assign it a unique key which you may use for referencing your data.

10. What are indexed array.

- An array is defined using the keyword "array".
- Each element of line array is assigned on index values which commences from **0** and ends with **n-1**.
- The user can access the array element using the array name followed by index value.

<div align="center">

Section-C

</div>

Answer the following questions   **(3 Mark)**

2. Write the purpose of parameterized Function.

- PHP Parameterized functions are the functions with parameters or arguments.
- Values can be passed from one function to another function through parameters.
- The parameter is also called as arguments, it is like variables.

- The arguments are mentioned after the function name and inside of the parenthesis.

4. Write Short notes on Array.

- An Array is a special variable that **stores more than one value of same data type** (homogeneous) in single array variable.
- They are 3 types of array concepts in PHP.
- **Associative Array** $\Longrightarrow$ Associative arrays are a key-value pair data structure.
- **Indexed Arrays** $\Longrightarrow$ An array is defined using the keyword "array".
- **Multi-Dimensional Array** $\Longrightarrow$ A multidimensional array is an array containing one or more arrays.

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Section - D

</div>

Answer the following questions: **(5 Mark)**

1. Explain Function concepts in PHP.

- A function is a block of segment in a program that performs a specific operation or tasks.
- It is a type of sub routine or procedure in a program.
- Functions are reusable; i.e a task can be executed any number of times.
- A Function will be executed by a call to the Function and the Function returns any data type values or NULL value to called Function in the part of respective program.
- The Function can be divided in to three types as follows
  - User defined Function,
  - Pre-defined or System or built-in Function, and
  - Parameterized Function

a) User Defined Function:

- **User Defined Function (UDF)** in PHP allows user to write own specific operation inside of existing program module.
- A user-defined Function declaration begins with the keyword "function" followed by a user defined function name and any custom logic inside the function block.
- **SYNTAX:**

  function *functionName*()

  {

  Custom Logic code to be executed;

  }

  - ➢ **Function Calling:**
    - Once a function is defined it is executed by a function call.
    - The programmer has to give functions Call inside the respective program.
    - **SYNTAX OF FUNCTION CALL:**

      function name();

b) Pre-Defined Or System Or Built In Function:

- PHP has a wide collection of built-in functions that can be called directly from system within a script, to perform a specific task.
- These built in function makes PHP a very efficient and productive scripting language.

Catagories:

- ➤ PHP string function   -   strlen(), strcmp()
- ➤ PHP array function   -   array(), key()
- ➤ PHP math function   -   abs(), cos()
- ➤ PHP MySQLi function   -   Mysqli_connect(),   Mysqli_close()
- ➤ PHP file system function   -   fopen(), fwrite()

c) Parameterized Defined Function:

- PHP Parameterized functions are the functions with parameters or arguments.
- Values can be passed from one function to another function through parameters.
- The parameter is also called as arguments, it is like variables.

3. Explain the Multidimensional Array.

- A multidimensional array is an array containing one or more arrays.
- PHP understands multidimensional arrays that are two, three, four, five, or more levels deep.
- However, arrays more than three levels deep are hard to manage for most people.
- Each array within the multidimensional array can be either indexed array or associative array.
- We can use for looping through indexed array and foreach for looping through associative array.

4. Explain Array concepts and their types.

- An Array is a special variable that stores more than one value of same data type (homogeneous) in single array variable.
- They are 3 types of array concepts in PHP.
  - Associative Array   ⟹Associative arrays are a key-value pair data structure.
  - Indexed Arrays   ⟹ An array is defined using the keyword "array".
  - Multi-Dimensional Array ⟹A multidimensional array is an array containing one or more arrays.
- A useful aspect of using arrays in PHP is when combined with the foreach statement.
- This allows you to quickly loop though an array with very little code.
- Array defines with the keyword **array().**

a) Indexed Arrays

- An array is defined using the keyword "array".
- Each element of line array is assigned on index values which commences from 0 and ends with n-1.
- The user can access the array element using the array name followed by index value.
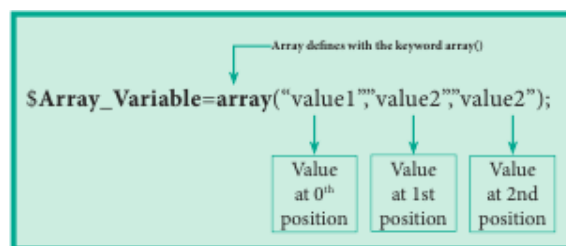
b) Associative Arrays

- Associative arrays are a key-value pair data structure.
- Instead of having storing data in a linear array, with associative arrays you can store your data in a collection and assign it a unique key which you may use for referencing your data.

Associative Array Syntax

array(*key=>value,key=>value,key=>value,etc.*);

key = Specifies the key (numeric or string)

value = Specifies the value

c)Multidimensional Arrays

- A multidimensional array is an array containing one or more arrays.
- PHP understands multidimensional arrays that are two, three, four, five, or more levels deep.
- However, arrays more than three levels deep are hard to manage for most people.

5. Explain Indexed array and Associative array in PHP.

a) Indexed Arrays

- An array is defined using the keyword "array".
- Each element of line array is assigned on index values which commences from 0 and ends with n-1.
- The user can access the array element using the array name followed by index value.
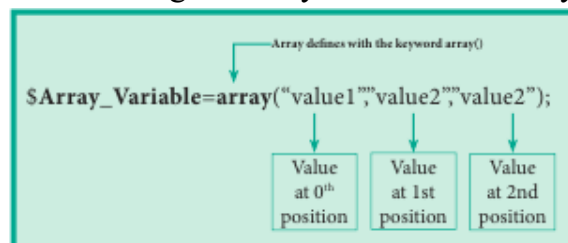
b) Associative Arrays

- Associative arrays are a key-value pair data structure.
- Instead of having storing data in a linear array, with associative arrays you can store your data in a collection and assign it a unique key which you may use for referencing your data.

Associative Arrays Syntax

array(*key=>value,key=>value,key=>value,etc.*);

key = Specifies the key (numeric or string)

value = Specifies the value

6. PHP CONDITIONAL STATEMENTS

Section – A

Choose the best answer **(1 Mark)**

1. What will be the output of the following PHP code?

<?php
$x;
if ($x)
print "hi";
else
print "how are u";
?>

    a) how are u   b) hi   c) error   d) no output

2. What will be the output of the following PHP code?

<?php
$x = 0;

```php
if ($x++)
print "hi";
else
print "how are u";
?>
```

       a) hi   b) no output   c) error   **d) how are u**

3. What will be the output of the following PHP code?

```php
<?php
$x;
if ($x == 0)
print "hi";
else
print "how are u";
print "hello";
?>
```

       a) how are u hello   **b) hihello**   c) hi   d) no output

4. Statement which is used to make choice between two options and only option is to be performed is written as

       a. if statement   **b. if else statement**   c. then else statement   d. else one statement

5. What will be the output of the following PHP code ?

```php
<?php
$a = "";
if ($a)
print "all";
if _____
else
print "some";
?>
```
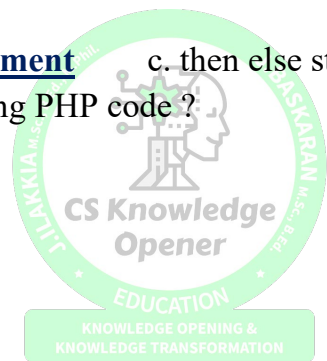
Parse error: syntax error, unexpected '_____' (T_STRING), expecting '(' in **C:\xampp\htdocs\test\all.php** on line **5**

       a) all   b) some   **c) error**   d) no output

6. What will be the output of the following PHP code ?

```php
<?php
$a = " ";
if ($a)
print "all";
else
print "some";
?>
```

       a) all   b) some   c) error   d) no output

7. What will be the output of the following PHP code ?
```php
<?php
$x = 10;
$y = 20;
if ($x > $y + $y != 3)
print "hi" ;
else
print "how are u";
?>
```
      a) how are u   **b) hi**   c) error   d) no output

8. What will be the output of the following PHP code ?
```php
<?php
$x = 10;
$y = 20;
if ($x > $y && 1||1)
print "hi";
else
print "how are u";
?>
```
      a) how are u   **b) hi**   c) error   d) no output

9. What will be the output of the following PHP code ?
```php
<?php
if (-100)
print "hi";
else
print "how are u";
?>
```
      a) how are u   **b) hi**   c) error   d) no output
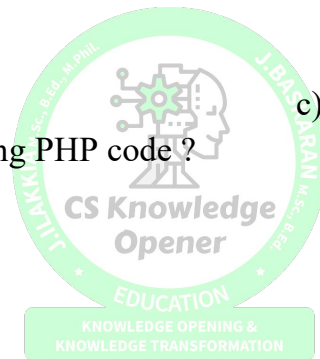
<div align="center">**Section-B**</div>

Answer the following questions   **(2 Mark)**

3. What is if else statement in PHP?

- If statement evaluates a condition and executes a set of code if the condition is true and another set of code if the condition is false.

5. Write Syntax of the If else statement in PHP.

SYNTAX:

```
if (condition)
{
Statement(s) if condition is true;
}
else
{
```

Statement(s) if condition is false;

}

6. Define if...elseif....else Statement in PHP.

• If-elseif-else statement is a combination of if-else statement.

• Here multiple conditions can be checked and action is based on the result of the condition

• The if.. elseif.. else is also known as if.. else ladder.

7. Usage of Switch Statement in PHP.

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

• Switch statements work the same as if statements but they can check for multiple values at a time.

8. Write Syntax of Switch statement.

SYNTAX:

switch (n) {

case label1:

code to be executed if n=label1;

break;

case label2:

code to be executed if n=label2;

break;

case label3:

code to be executed if n=label3;

break;

...

default:

code to be executed if n is different from all labels;

}

9. Compare if else statement.

If else
If statement evaluates a condition and executes a set of code if the condition is true and another set of code if the condition is false.

SYNTAX:
 if (condition)
 {
 Statement(s) if condition is true;
 }
 else
 {
 Statement(s) if condition is false;
 }

Section-C

Answer the following questions   **(3 Mark)**

2. Write the purpose of if elseif else statement.

- If-elseif-else statement is a combination of if-else statement.
- The **if..elseif..else** is also known as **if..else ladder** as if lets us chain together multiple if...else statements allowing the programmer to define actions for more than just two possible outcomes.

3. Differentiate Switch and if else statement.

Switch	If else
Switch statement uses single expression for multiple choices.	If-else statement uses multiple statement for multiple choices.
It test only for equality.	It test for equality as well as for logical expression.
It evaluates only character or integer value.	Evaluates any type

4. Write Short notes on Switch statement.

- **The switch case is an alternative to the if.. elseif..else statement which executes a block of code corresponding to the match.**
- Switch statement uses single expression for multiple choices.
- It test only for equality and evaluates only character or integer value.
- If switch statements does not match any cases, the default statements is executed.
- **SYNTAX:**
  switch (n) {
  case label1:
  code to be executed if n=label1;
  break;
  case label2:
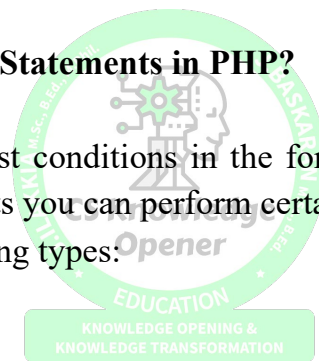 code to be executed if n=label2;
  break;
  ...
  default:
  code to be executed if n is different from all labels;
  }
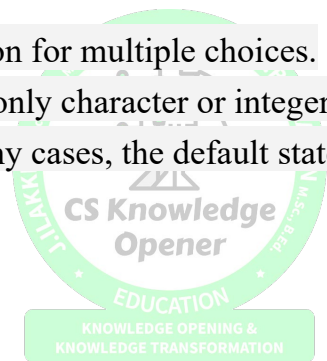
5. Differentiate if elseif else statement.

if elseif else statement
If-elseif-else statement is a combination of if-else statement. Here multiple conditions can be checked and action is based on the result of the condition.

<u>**Syntax:**</u>
```
if (Condition 1)
{
Statement(s) if condition 1 is true;
}
elseif(Condition 2)
{
Statement(s) if condition 2 is true;
}
else
{
Statement(s) if both conditions are false;
}
```

Section - D

Answer the following questions: **(5 Mark)**

1. Explain Function of Conditional Statements in PHP.

PHP Conditional Statements:

- Conditional statements can create test conditions in the form of expressions that evaluates to either true or false and based on these results you can perform certain actions.
- They are implemented by the following types:
  - if...else Statement
  - if...elseif....else Statement
  - switch Statement
- **If else statement in PHP:**
- If statement evaluates a condition and executes a set of code if the condition is true and another set of code if the condition is false.
- **Syntax:**
```
if (condition)
{
Statement(s) if condition is true;
}
else
{
Statement(s) if condition is false;
}
```
- **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.
- The if..elseif..else is also known as if..else ladder as if lets us chain together multiple if...else statements allowing the programmer to define actions for more than just two possible outcomes.
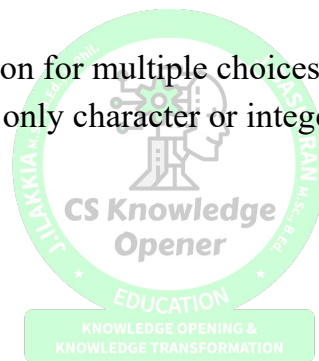
Syntax:

```
if (Condition 1)
{
Statement(s) if condition 1 is true;
}
elseif(Condition 2)
{
Statement(s) if condition 2 is true;
}
else
{
Statement(s) if both conditions are false;
}
```

- **Switch Case:**
- The switch case is an alternative to the if.. elseif..else statement which executes a block of code corresponding to the match.
- Switch statement uses single expression for multiple choices.
- It test only for equality and evaluates only character or integer value.
- **Syntax:**

```
switch (n)
{
case label1:
code to be executed if n=label1;
break;
case label2:
code to be executed if n=label2;
break;
case label3:
code to be executed if n=label3;
break;
...
default:
code to be executed if n is different from all labels;
}
```

2. Discuss in detail about Switch statement with an example.

- **Switch Case:**
- The switch case is an alternative to the if.. elseif..else statement which executes a block of code corresponding to the match.
- Switch statement uses single expression for multiple choices.
- It test only for equality.
- It evaluates only character or integer value.
- Use break to prevent the code from running into the next case automatically.

- The default statement is used if no match is found.
- **Syntax:**

```
switch (n)
{
case label1:
code to be executed if n=label1;
break;
case label2:
code to be executed if n=label2;
break;
case label3:

code to be executed if n=label3;
break;
...
default:
code to be executed if n is different from all labels;
}
```

3. Explain the working of Conditional Statements in PHP?

PHP Conditional Statements:

- Conditional statements can create test conditions in the form of expressions that evaluates to either true or false and based on these results you can perform certain actions.
- They are implemented by the following types:
  - ➢ if...else Statement
  - ➢ if...elseif....else Statement
  - ➢ switch Statement

➢ **If else statement in PHP:**

- If statement evaluates a condition and executes a set of code if the condition is true and another set of code if the condition is false.

➢ **Syntax:**

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

➢ **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.

- The if..elseif..else is also known as if..else ladder as if lets us chain together multiple if...else statements allowing the programmer to define actions for more than just two possible outcomes.

➢ **Syntax:**

```
if (Condition 1)
{
Statement(s) if condition 1 is true;
}
elseif(Condition 2)
{
Statement(s) if condition 2 is true;
}
else
{
Statement(s) if both conditions are false;
}
```

➢ **Switch Case:**

- The switch case is an alternative to the if.. elseif..else statement which executes a block of code corresponding to the match.
- Switch statement uses single expression for multiple choices.
- It test only for equality and evaluates only character or integer value.

➢ **Syntax:**

```
switch (n)
{
case label1:
code to be executed if n=label1;
break;
case label2:
code to be executed if n=label2;
break;
case label3:
code to be executed if n=label3;
break;
...
default:
code to be executed if n is different from all labels;
}
```

4. Explain the if elseif else statement with suitable example.

- **If elseif else statement in PHP:**
    - If-elseif-else statement is a combination of if-else statement.
    - The if.. elseif.. else is also known as if.. else ledder as if lets us chain together multiple if... else statements allowing the programmer to define actions for more than just two possible outcomes.

- **Syntax:**

      if (Condition 1)

      {

      Statement(s) if condition 1 is true;

      }

      elseif(Condition 2)

      {

      Statement(s) if condition 2 is true;

      }

      else

      {

      Statement(s) if both conditions are false;

      }

5. Explain if else statement in PHP with an example.

- **If else statement in PHP:**
- If statement evaluates a condition and executes a set of code if the condition is true and another set of code if the condition is false.
- **Syntax:**

if (condition)

{

Statement(s) if condition is true;

}

else

{

Statement(s) if condition is false;

}

7. LOOPING STRUCTURE

Section – A

Choose the best answer   **(1 Mark)**

1. The loop exclusively used for arrays is _____

    a) While   b) Do While   c) For   **d) Foreach**

2. Loops that iterate for fixed number of times is called

    a) Unbounded loops   **b) Bounded loops**   c) While loops   d) For loops

3. Which loop evaluates condition expression as Boolean, if it is true,it executes statements and when it is false it will terminate?

    a) For loop   b) For each loop   c) While loop   **d) All of them**

7. PHP supports four types of looping techniques;

    a) for loop   b) while loop   c) foreach loop   **d) all the above**

Section-B

Answer the following questions (2 Mark)

1. Define Looping Structure in PHP.

- Loop structures in PHP is an iterative control structures that involves executing the same block of code for a specified number of times.
- Loops that iterate for fixed no of times is also called as Bounded loops.

3. What is Foreach loop in PHP?

- **Foreach** loop is used for looping through the values of an array.
- The loop iteration depends on each KEY Value pair in the Array.
- Foreach loop iterates the value of the current array element and assigned to **$value variable**

4. List out Looping Structure in PHP.

- PHP supports four types of loops..
  - For Loop
  - Foreach Loop
  - While Loop
  - Do While Loop

6. Write Syntax of Foreach loop in PHP.

Syntax:

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

9. Compare for each loop.

For each loop
• The **foreach loop** is used for looping through the values of an array.
• The loop iteration depends on each KEY Value pair in the Array.

• **Syntax:**
 foreach ($array as $value){
 code to be executed;
 }

10. Explain the use of for each loop in PHP.

- **Foreach** loop is used for looping through the values of an array.
- It provides an easy way to iterate over arrays.
- Foreach works only on arrays and objects, and will issue an error when you try to use it on a variable

Section-C

Answer the following questions (3 Mark)

1. Write the features Looping Structure.

- Loop structures in PHP is an iterative control structures that involves executive the same block of code a specified number of times.

- Loops that iterate for fixed no of times is also called as Bounded loops.
- PHP supports four types of loops..
  - ●for Loop
  - ● Foreach Loop
  - ● While Loop
  - ● Do While Loop

2. Write the purpose of Looping Structure in PHP.

- Looping statements is used to repeat the same block of code for a given number of times, or until a certain condition is met.
- It is useful for writing iteration logics.
- It helps the user to save both time and effort of writing the same code multiple times.

3. Differentiate Foreach and While loop.

For each loop
• Foreach loop is used for looping through the values of an array.
• The loop iteration depends on each KEY Value pair in the Array.

Section - D

Answer the following questions: **(5 Mark)**

1. Explain Looping Structure in PHP.

Looping Structure:

- Loop structures in PHP is an iterative control structures that involves executive the same block of code a specified number of times.
- Loops that iterate for fixed no of times is also called as Bounded loops.
- It is useful for writing iteration logics.
- It helps the user to save both time and effort of writing the same code multiple times.

For each Loop:

- **The foreach loop is exclusively available in PHP and is mainly used for looping through the values of an array.**
- **The loop iteration deepens on each KEY Value pair in the Array.**
- **Syntax:**

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

2. Discuss in detail about Foreach loop.

Foreach Loop:

- **Foreach** loop is used for looping through the values of an array.
- The loop iteration depends on each KEY Value pair in the Array.
- **Foreach** loop iterates the value of the current array element and assigned to $value variable and the array pointer is advanced by one, until it reaches the end of the array element.

- **Syntax:**

    foreach ($array as $value) {

    code to be executed;

    }

5. Explain working of loops in array.

For each Loop:

- Foreach loop is used for looping through the values of an array.
- The loop iteration depends on each KEY Value pair in the Array.
- Foreach loop iterates the value of the current array element and assigned to $value variable and the array pointer is advanced by one, until it reaches the end of the array element.
- **Syntax:**

    foreach ($array as $value) {

    code to be executed;

    }

8. FORMS AND FILES

Section – A

Choose the best answer   **(1 Mark)**

1. When you use the $_GET variable to collect data, the data is visible to..

     a) none   b) only you   **c) everyone**   d) selected few

2. _____ method stores the input data in the request body of the clients HTTP request.

     a) POST   b) GET   c) form   d) HTML

3. In which input field only one option can be selected?

     a) Text box   b) Check box   **c) Radio button**   d) Drop Down Menu

4. In HTML form <input type="text"> is used to

     a) process text   **b) input text**   c) Validate text   d) Output text

5. Which attribute of form tag helps in client side validation?

     a) Submit   b) Check   c) Validate   **d) Required**

6. The no. of parameters used by fclose() function.

     a) 1   b) 2   c) 3   d) 4

7. PHP is a _____ programming language.

     a) Client side   **b) Server side**   c) Object side   d) file side

8. What does fopen() function do in PHP?

     a) It used to open files in PHP   b) It used to open Remote Server

     c) It used to open folders in PHP   d) It used to open Remote Computer

9. How PHP files can be accessed?

     a) Through Web Browser   b) Through HTML files

     c) Through Web Server   **d) All of Above**

10. Identify which is not a server side application language

     a) PHP   **b) HTML**   c) ASP   d) JSP

Section-B

Answer the following questions   **(2 Mark)**

1. Define HTML form controls.

❖ Main objective of PHP and HTML form controls are to collect data from users.

   ❖ The following control types in HTML are used

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

2. Define Form Handling method in PHP.

❖ **Post Method:** The input data sent to the server with POST method is stored in the request body of the client's HTTP request.

❖ **Get Method:** 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.

3. What is Form Validation in PHP?

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

❖ There are two types of validation available in PHP. They are,

   ❖ **Client-Side Validation**

   ❖ **Server Side Validation**

4. List out HTML control to support PHP language.

❖ **HTML form controls:**

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

5. Write Syntax of Text box in HTML.

Syntax:

<input type="text" name="name">

7. What is a HTML form?

- A HTML form will take input from the site visitor and then will post it to a back-end application such as CGI, ASP Script or PHP script etc.

8. Write any Two rules for input HTML.

- Name (Text Input) : Must contain letters and white-spaces
- Email (Text Input) : Must contain @ and .strings
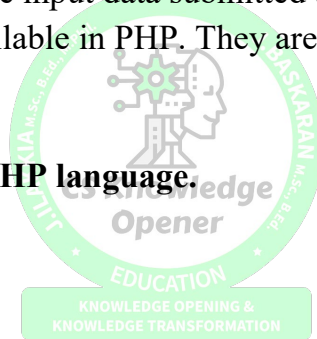
9. Differentiate Check box and Radio box

Check box	Radio box
• Checkbox is a important feature which selects more than one value from the HTML form.	• Radio box is similar to checkbox but only one value can be chosen at a time.

Section-C

Answer the following questions   **(3 Mark)**

1. Write the features Form Handling.

❖ A HTML form will take input from the site visitor and then will post it to a back-end application such as CGI, ASP Script or PHP script etc.

❖ All input values are synchronized and sent to the server via POST method or GET method.

❖ Method is an attribute form tag in HTML.

2. Write the purpose Get method and Post method.

❖ Form tag is used to mention a method (POST or GET) and control the entire form controls in the HTML document.

❖ **Post Method:** The input data sent to the server with POST method is stored in the request body of the client's HTTP request.

❖ **Get Method:** 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.

3. Differentiate Get and Post Method.

Get Method	Post Method
❖ Get method passes the request parameter in the URL String.	❖ POST method passes request parameter in request body.
❖ GET requests can be cached	❖ POST requests are never cached
❖ GET requests remain in the browser history	❖ POST requests do not remain in the browser history

Section - D

Answer the following questions: **(5 Mark)**

1. Explain Form Handling methods.

❖ Form tag is used to mention a method (POST or GET) and control the entire form controls in the HTML document.

❖ When the user keying the input data in HTML controls and clicks the submit button the request will be generated and reaches a PHP file which is mentioned in the FORM tag under the Action attribute.

❖ All input values are synchronized and sent to the server via POST method or GET method.

❖ **Post Method:**
   ❖ The input data sent to the server with POST method is stored in the request body of the client's HTTP request.

❖ **Get Method:**
   ❖ 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.

Example for Form:
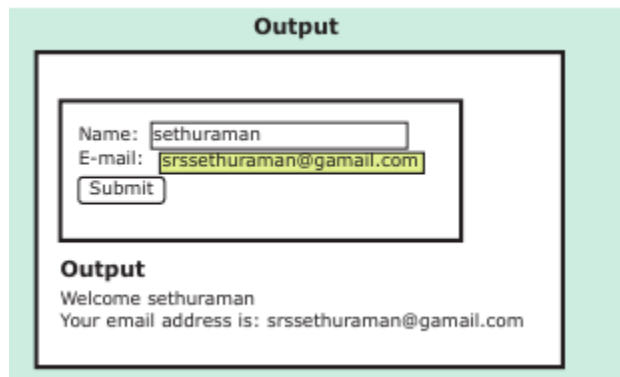
Explanation:

❖ In the above given example, HTML File contains two Text Box (Name and Email), One Button and one form tag.

❖ The remote server PHP file (welcome.php) is mentioned in form tag under the Action Attribute.

❖ In "Welcome.Php" file, PHP variables such as $_POST and $_GET collects the data and prepares the response accordingly.

2. Discuss in detail about HTML form controls.

❖ Main objective of PHP and HTML form controls are to **collect data from users**.

❖ The following control types are available in HTML form controlling:

- Text inputs
- Buttons
- Checkbox
- Radio box
- File Select
- Form Tag
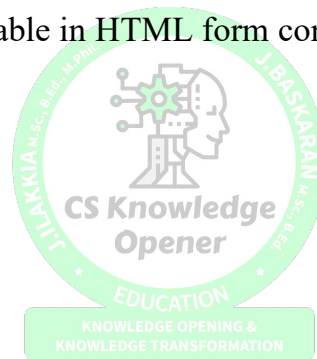
Html Form Controls:

❖ **Text inputs** contain textbox and text area controls.

❖ **Buttons** may contain Submit button, Reset button and Cancel Button.

❖ **Checkbox** is the important feature which selects more than one value from the HTML form.

❖ **Radio box** is similar to checkbox but one value can be chosen at a time.

❖ **File select** is the best feature to select one file from the local machine to server machine at a time.

❖ **Form tag** is used to mention a method (POST or GET) and control the entire form controls in the HTML document.

Example:

9. CONNECTING PHP AND MYSQL

Section – A

Choose the best answer   **(1 Mark)**

1. Which is the correct function to execute the SQL queries in PHP?
   a) mysqli_query("Connection Object","SQL Query")
   b) query("Connection Object","SQL Query")
   c) mysql_query("Connection Object","SQL Query")
   d) mysql_query("SQL Query")

2. Which is the correct function Closing Connection in PHP ?
   a) mysqli_close("Connection Object");
   b) close("Connection Object");
   c) mysql_close("Connection Object");
   d) mysqli_close("Database Object");

3. Which is the correct function to establish Connection in PHP ?
   a) mysqli_connect("Server Name ","User Name","Password","DB Name");
   b) connect("Server Name ","User Name","Password","DB Name");
   c) mysql_connect("Server Name ","User Name","Password","DB Name");
   d) mysqli_connect ("Database Object");

4. Which is the not a correct MySQL Function in PHP ?
   a) Mysqli_connect() Function   b) Mysqli_close() Function
   c) mysqli_select_data() Function   d) mysqli_affected_rows() Function

5. How many parameter are required for MYSQLi connect function in PHP ?
   a) 2   b) 3   **c) 4**   d) 5

6. How many parameter are required for MYSQLi query function in PHP ?
   a) 2   b) 3   c) 4   d) 5

7. How many parameter are required for MYSQLi Close function in PHP ?
   a) 1   b) 2   c) 3   d) 5

8. Which version of PHP supports MySQLi fuctions ?
   a) Version 2.0   b) Version 3.0   c) Version 4.0   **d) Version 5.0**

Section-B

Answer the following questions   **(2 Mark)**

1. What are the MySQLi function available PHP?
   ● Mysqli_connect() Function
   ● Mysqli_close() Function
   ● Mysqli_query()Function

2. What is MySQLi function?
- MySQLi is extension in PHP scripting language which gives access to the MYSQL database.
- Functions are available for MySQL Database connectivity and executing SQL queries.

3. What are the types MySQLi function available PHP?
- Database Connections
- Managing Database Connections
- Performing Queries

- Closing Connection

4. Difference between Connection and Close function?

Connection	Close function
Connect to Database Server machine via PHP scripting language using Mysqli_connect() Function.	Mysqli_close() Function is used to close an existing opened database connection between PHP scripting and MySQL Database Server.

5. Give few examples of MySQLi Queries.

EXAMPLES:

- $con=mysqli_connect("localhost","my_user","my_password","Student_DB ");
- $sql="SELECT student_name,student_age FROM student";
  mysqli_query($con,$sql);

6. What is Connection string?

- The variables used to connect to the Database server.
- The mysqli_connect function uses these variables and connect Database server from PHP scripting.
- If connection gets fail, output will be printed with MySQL error code.
- Otherwise connection is success.

<div align="center">

Section-C

</div>

Answer the following questions   **(3 Mark)**

1. Write the Syntax for MySQLi Queries.

- "mysqli_query" is a function, helps to execute the SQL query statements in PHP scripting language.

Syntax:

         mysqli_query("Connection Object","SQL Query")

2. Write is the purpose of MySQLi function available.

- In PHP Scripting language many functions are available for MySQL Database connectivity ,executing SQL queries, and management.
  - Mysqli_connect() Function
  - Mysqli_close() Function
  - Mysqli_query()Function

3. Write MySQLi Connection Syntax with example.

- Before accessing MySQL Database, connect to Database Server machine via PHP scripting language using Mysqli_connect() Function.

Syntax:

         mysqli_connect("Server Name ","User Name","Password","DB Name");

Example:

         $conn = mysqli_connect($servername, $username, $password,$DB_name);

<div align="center">

Section - D

</div>

Answer the following questions: **(5 Mark)**

1. Discuss in detail about MySQLi functions with example .

- In PHP Scripting language many functions are available for MySQL Databaseconnectivity and executing SQL queries.

- Mysqli_connect() Function
- Mysqli_close() Function
- **Mysqli_query()Function**

i) Mysqli_connect() Function:

- Before accessing MySQL Database, connect to Database Server machine via PHP scripting language using **Mysqli_connect() Function**.

Syntax:

mysqli_connect("Server Name ","User Name","Password","DB Name");

- This function requires four parameters to connect to database server.
- Database Server name, Database username, password and Database Name.

ii) Mysqli_close() Function:

- **mysqli_close()** Function is used to close an existing opened database connection between PHP scripting and MySQL Database Server.

Syntax:

mysqli_close("Connection Object");

iii) Mysqli_query()Function

- Before accessing MySQL Database, connect to Database Server machine via PHP scripting language **using Mysqli_connect() Function.**

Syntax:

mysqli_connect("Server Name ","User Name","Password","DB Name");

2. Explain in details types of MySQLi connection method in PHP.

Database Connections:

- Before accessing MySQL Database, connect to Database Server machine via PHP scripting language using Mysqli_connect() Function.

Syntax:

mysqli_connect("Server Name ","User Name","Password","DB Name");

- This function requires four parameters to connect to database server.
- Database Server name, Database username, password and Database Name.

Managing Database Connections

- In the above code snippet, three variables are used to connect to the Database server. They are,
  - $servername -> Database Server Server IP address
  - $username -> Database Server User Name
  - $password -> Database Server Password
  - $DB_Name -> Database Name
- The mysqli_connect function uses these variables and connect Database server from PHP scripting.
- If connection gets fail, output will be printed with MySQL error code.
- Otherwise connection is success.

3. Explain MySQLi Queries with examples.

- The main goal of MySQL and PHP connectivity is to retrieve and manipulate the data from MySQL database server.

- The SQL query statements are helping with PHP MySQL extension to achieve the objective of MySQL and PHP connection.
- "mysqli_query" is a function, helps to execute the SQL query statements in PHP scripting language.

Syntax:

mysqli_query("Connection Object","SQL Query")

10. INTRODUCTION TO COMPUTER NETWORKS

Section – A

Choose the best answer   **(1 Mark)**

1. A set of computers connecting together is called as ----------
     a) Network   b) Server   c) Hub   d) Node

2. Computer network devices that originates route and terminate the data were called as
     a) Hub   b) Resource   **c) Node**   d) Cable

5. Wi-Fi is short name for
     a) Wireless Fidelity   b) Wired fidelity   c) Wired fiber optic   d) Wireless fiber optic

7. Which among them was challenging to the business people on computer networking?
     a) Hacking   b) Viruses   **c) Both a & b**   d) none of this above

9. -------------use less power comparing with single transmitter or satellite often cell towers nearer
     a) Mobile devices   b) Transistors   c) WIFI   d) Communication

10. People now a days getting relaxed via
     a) Business   b) Corporate company   c) News papers   **d) Social media**

11. Which one of the following is not the social media
     a) Gmail   b) Facebook   c) twitter   d) Linkedin

13. In mobile network, land areas for network coverage was distributed as
     a) Firmware   **b) cells**   c) Range   d) Service

14. Which one of the following are harmful to computer?
     a) Bloggers   b) Browser   **c) Hackers**   d) twitter

15. Which innovation made the people to use Internet?
     a) Social web   b) Mobile technology   c) Mobile App   **d) Both a & b**

Section-B

Answer the following questions   **(2 Mark)**

1. Define Computer Network.
- A set of computers connected together for the purpose of sharing resources is called as computer network.

3. What are the common uses of computer network?
The common uses of computer network are
  - Communication
  - Resource sharing
  - Data (or) software sharing
  - Money saving

4. List out some features of mobile network.
  - Less consumption of power is used by mobile devices
  - Huge capacity than a large transmitter, at single frequency .

> The mobile network traffic is fully busy because of large mobile communication.

5. Difference between wired and wireless networks.

Wired networks	Wireless networks
A Wired network system connected with network cable .	A Wireless network is connecting devices like tablets(tab), indoor cameras and E-readers, etc., without cables (WiFi).

<div align="center">

Section-C

</div>

Answer the following questions   **(3 Mark)**

4. List out some benefits 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 is also money saving as it reduces paper work, manpower, resources sharing, software sharing and also time saving.

<div align="center">

Section - D

</div>

Answer the following questions: **(5 Mark)**

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

Networks in Business:

- Communication is very important factor for **successful business operations.**
- The growth of computer network and speedy Internet services, business also developed drastically.
- Internet conversation made conversation faster.

Networks at Home:

- Network at home is a **group of devices** such as computers, mobile, speakers, camera, game system, and printer that connect via network device(router/data card) with each other.
- A **Wired network** system connected with network cable.

Mobile Networks:

- Mobile network is the network connecting devices **without cable (wireless).**
- Mobile computers, such as laptop, tablet, and hand held computers, were fastest growing segments.

Social Application:

- To get connected to with people around the world through social network media, applications like Whatsapp, Facebook, Twitter, Blogs, Pinterest, Classmate and so on are in full fledge use.

> **These social networks share several attributes in common**

  - Membership, Content contribution , Frequent return visits. , Human relationship building.

11. NETWORK EXAMPLES AND PROTOCOLS

Section – A

Choose the best answer   **(1 Mark)**

1. Which one of the following will be easy the way to uses Internet technology and the public telecommunication system to securely share business's information with suppliers, vendors, partners and customers.

      a) Extranet   b) Intranet   c) arpanet   d) arcnet

3. Communication over ------------------is be made up of voice, data, images and text messages.

      a) Social media   **b) mobile network** c) whatsapp   d) software

4. Wi-Fi stands for---------------------

      a) Wireless Fidelity   b) wired fidelity   c) wired optic fibre   d) wireless optic fibre

5. A TCP/IP network with access restricted to members of an organization

      a) LAN   b) MAN   c) WAN   **d) Intranet**

6. RFID stands for --------------

      a) Radio Free identification   b) real Frequency identity

      c) Radio Frequency indicators   **d) Radio Frequency Identification.**

Section-B

Answer the following questions   **(2 Mark)**

1. Define Intranet.

* It is a private network using Internet technology to share part of business information with supplier's partners and customers.
* It may consist of many interlinked local area networks.

2. What is the uses of mobile networks?

* Mobile networking assign to the technology that can **support data / voice,** network connectivity using via radio transmission solution, wireless.

3. List out the benefits of WiFi.

* Mobility.
* Connection to Internet.
* Flexibility of LAN.
* Ensures connectivity.
* Low cost, high benefits.

4. How many types of RFID system available and what are they?

➢ Two types of RFID systems.

* **Active RFID system:** The tag has its own power source.
* **Passive RFID system:** The tag gets power from a reader antenna to the tag antenna.

<div align="center">Section-C</div>

Answer the following questions   **(3 Mark)**

1. Compare Internet, Intranet and Extranet.

Type	Definition
Internet	The Internet is a network of global connections
Intranet	It is a private network within an enterprise to share company
Extranet	It is a private network that uses Internet technology

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

- Two types of RFID systems are **Active RFID system and Passive RFID system.**

<div align="center">Section - D</div>

Answer the following questions: **(5 Mark)**

1. Explain about Internet, Intranet and Extranet.

INTERNET:

- The **Internet**, "the Net," is a worldwide system of computer networks.
- A global network, public TCP/IP network used by over a billion people all over the world.
- A network of networks where the users at any one computer can, if they have permission, get information from any other computer.

INTRANET:

- It is a private network within an enterprise to share company data and computing resources between the employees.
- It may consist of many interlinked local area networks.

EXTRANET:

- It is a private network that uses Internet technology and the public telecommunication system to securely share business's information with suppliers, vendors, partners, customers, or other businesses.

4. Explain about the development, merits and demerits in Mobile networks.

Development of Mobile Networks:

The generations of mobile networks are as follows.

- First Generation(1G) 1981- NMT launch
- Second Generation(2G) 1991-GSM Launch
- Second to Third Generation Bridge (2.5)2000 – GPRS launch
- Third Generation(3G) 2003- UK 3G launch
- Fourth Generation (4 G) 2007
- Fifth Generation (5G) 2019+

Merits of Mobile Networks:

- It provides both voice/data services.
- It connects both fixed and wireless telephone users.
- It is used in areas where cables cannot be laid out due to its wireless nature.
- It is easy to maintain.
- It is easy to upgrade the equipments.

Demerits of Mobile Networks:

- Cost
- Vulnerable to Security risks
- Additional training is needed to use new technology.
- Cyber Crime.

12. DNS (DOMAIN NAME SYSTEM)

Section – A

Choose the best answer   **(1 Mark)**

1. Which of the following is used to maintain all the directory of domain names?

    a) Domain Name System   b) Domain name space

    c) Name space   d) IP address

4. Expansion of URL is

    a) Uniform Resource Location   b) Universal Resource Location

    c) Uniform Resource Locator   d) Universal Resource Locator

5. How many types are available in Relative URL?

    a) 2   b) 3   c) 4   d) 5

6. Maximum characters used in the label of a node?

    a) 255   b) 128   **c) 63**   d) 32

7. In domain name, sequence of labels are separated by

    a) ;   **b) .(dot)**   c) :   d) NULL

8. Pick the odd one out from the following.

    a) node   b) label   c) domain   **d) server**

9. Which of the following initiates the mapping of domain name to IP address?

    a) Zone   b) Domain   c) Resolver   **d)Name servers**

10. Which is the contiguous area up to which the server has access?

    a) Zone   b) Domain   c) Resolver   d) Name servers

11. ISP stands for

    a) International Service provider   **b) Internet Service Provider**

    c) Internet service Protocol   d) Index service provider

12. TLD stands for

    a) Top Level Data   b) Top Logical Domain   c) Term Level Data   **d) Top Level Domain**

13. Which of the following statements are true?

    i) Domains name is a part of URL.   **ii)** URL made up of four parts

    iii) The relative URL is a part of Absolute URL   **iv)** URL doesn't contain any protocol

    a) i & ii   **b) ii**   c) i, ii & iii   d) i, ii & iv

15. Match the following

        a. domain   -   1. Progress that initiates translation

        b. zone   -   2. contains database of domain names

        c. name server -   3. single node

        d. resolver   -   4. contiguous nodes

    a. 1432   **b.3421**   c. 3214   d. 3412

Section-B

Answer the following questions (2 Mark)

1. List any four domain names.

Domain Name	Meaning
com	Commercial Organisation
edu	Educational Institutions
gov	Government (US)
mil	Military groups

4. What is an URL?

- URL **(Uniform Resource Locator)** is the address of a document on the Internet.
- URL is made up of four parts- protocols, hostname, folder name and file name.
- Each part has its own specific functions.

5. List out four URLs you know.

- https://www.google.com/
- https://www.yahoo.com/
- https://www.facebook.com/

6. What are the types of URL?

- URL is divided into two types:
- **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?

- **Zone** is the contiguous part up to which the server has access.
- The domain assigned for the server does not divide into further sub domains then zone is same as domain.

9. What is a resolver?

- The **resolver** is a program which is responsible for initiating the translation of a domain name into an IP address.
- A resolver is stored in the host..

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

- The DNS hierarchy is comprised of the following elements:
  1) Root Level
  2) Top Level Domains
  3) Second Level Domains
  4) Sub-Domain
  5) Host
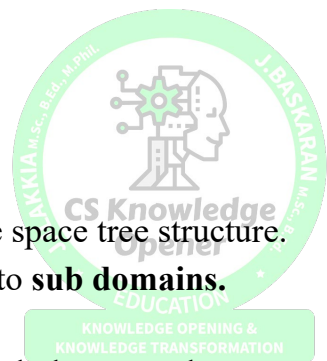
11. Write any four generic Top Level Domain.

Domain Name	Purpose
com	Commercial Organisation
edu	Educational Institutions
gov	Government (US)
mil	Military groups

Section-C

Answer the following questions **(3 Mark)**

1. Write a note on DNS.

- Domain Name System (DNS) maintains all the directory of domain names and help us to access the websites using the domain names.
- It translates the domain name into IP address.
- The three important components of the Domain Name System are Namespace, Name server and Zone.

3. Differentiate Domain name and URL.

Domain Name	URL
Domain Name is a symbolic name associated with an IP address	URL (Uniform Resource Locator) is the address of a document on the Internet.
Domain name is the sequence of labels separated by dot (.).	URL is made up four parts–protocols, hostname, folder name and file name.

4. What are the differences between Absolute URL and Relative URL?

Absolute URL	Relative URL
Absolute URL is the complete address of a document on the Internet.	Relative URL is the partial address of a document on the Internet.
Absolute URL contains all the information that are required to find the files on the Internet.	Relative URL contains only file name or file name with folder name.
All the four parts is very important in absolute URL.	Relative URL is used when the file is on the same server related to original document.

5. Write a note on domain name.

- Domain name is the sequence of labels, which are separated by dot (.).
- The domain name is always read from the lower level to higher level i.e., from the leaf node to root node.
- Since the root node always represent NULL string, all the domain name ending with dot.

6. Differentiate web address and URL

WEB ADDRESS	URL
Web Address more commonly defines a unique name that helps people remember a URL.	URL (Uniform Resource Locator) is the address of a document on the Internet.
It is a unique string of letters or characters that identify your specific place on the internet.	URL is made up four parts–protocols, hostname, folder name and file name.

Section - D

Answer the following questions: **(5 Mark)**

1. Explain briefly the components of DNS.

- Domain Name System (DNS) maintains all the directory of domain names and help us to access the websites using the domain names.

DNS Components:

➢ There are three important components in the Domain Name System.

➢ They are,

- Namespace
- Name server
- Zone

1) NAME SPACE:

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

  #### a) FLAT NAME SPACE:

  - Flat name space is where the name is assigned to the IP address.
  - They do not have any specific structure and they cannot be used in large system.

  #### b) HIERARCHICAL NAME SPACE:

  - Hierarchical name space is where the name is made up of several parts.
    ➢   The first part may represent the nature of organization.
    ➢   The second part may represent the name of organization.
    ➢   The third part may represent the department of the organization and so on.

2) 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.
- **Types of Name Servers:**
  1. Root Name Server   -   Contains entire DNS tree
  2. Primary/Master Name Server   -   Contains a zone resource records.
  3. Secondary/Slave Name Server   -   Contains a copy of primary server files.

3) ZONE:

- The entire name space is divided into many different zones.
- It is the area up to which the server has access.
- Zone is defined as a group of contiguous domains and sub domains.

3. Explain about the name server?

NAME SERVERS:

- The information which needs to be stored in **Domain name space** is quite large.
- Single system would be unreliable and inaccessible of any failure, inefficient and insufficient to store such a huge amount of requests from all over the world.
- The best way to do that is to **divide the entire space into many domains and sub domains** among many computers.

- DNS also allows domains to be further divided into sub domains and hierarchy of servers is also maintained.
- **Name servers** store the data and provide it to clients when queried by them.
- **Name Servers** are programs that run on a physical system and store all the zone data.
- **Inverse Name Server** in the Domain Name System (DNS) translates the domain names to IP addresses.

TYPES OF NAME SERVERS:

There are three types of Name Servers which control the entire Domain Name System:

1. Root Name Server:

- Top level server which contains entire DNS tree, maintained by ICANN. There are 13 servers.

2. Primary/Master Name Server:

- Contains a zone resource records.

3. Secondary/Slave Name Server:

- Contains a copy of primary server files.

4. What is domain name space? Explain.

DOMAIN NAME SPACE:

- **Domain name space** was designed to achieve **hierarchical name space.**
- In this, the names are represented as a tree like structure with **root element on the top** and this tree can have a maximum of **128 levels** starting from root element taking the **level 0 to level 127**.
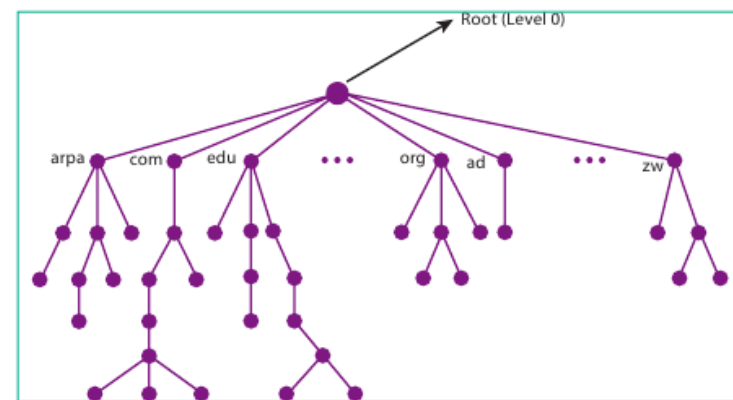
Figure 12.5 Domain Name Space

- The root element always represents the NULL string (empty string).
- The next level to the root element is node (children of root element).
- Each node in the tree has a **label** and a **domain name**.

Label:

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

Domain Name:

- In domain name the sequence of labels are separated by dot (.).
- The domain name is always read from the **lower level to higher level** i.e., from the leaf node to root node.

- Since 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 through z, and the digits 0 through 9.
- Hyphens are allowed, but hyphens cannot be used as first character of a domain name.
- Spaces are not allowed.
- Special symbols (such as !, $, &, _ and so on) are not permitted.
- Domain names have the minimum length of 2, and the maximum length of 63 characters.
- The entire name may be at most 253 characters long.
- Domain names are not case-sensitive.

Generic Top-Level Domain names

Country top-level domain names

5. Explain how the DNS is working.

- When the user enters the URL in the browser, the system first checks its DNS cache for the corresponding IP address.
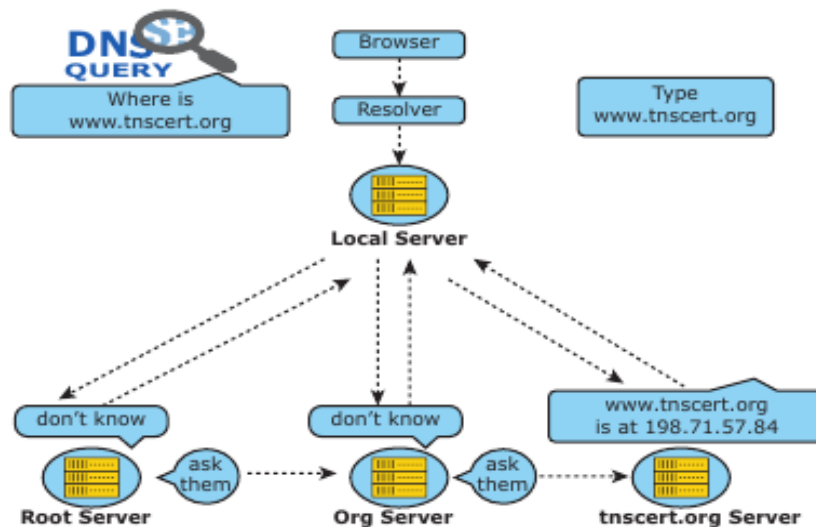
Workflow of DNS

- If the IP address is found in the cache then the information is retrieved from cache.
- If not, then the system needs to perform DNS query i.e., 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.
- If not, then the query is passed to next domain server i.e., TLD (Top Level Domain) which reviews the request and direct the query to name servers associated with that specific domain.

.13. NETWORK CABLING

Section – A

Choose the best answer   **(1 Mark)**

1. ARPANET stands for

  a) American Research Project Agency Network

  b) Advanced Research Project AreaNetwork

  c) Advanced Research ProjectAgency Network

  d) American Research Programs And Network

2. WWW was invented by

    a) Tim Berners Lee   b) Charles Babbage   c) Blaise Pascal   d) John Napier

3. Which cable is used in cable TV to connect with setup box?

    a) UTP cable   b) Fibre optics   **c) Coaxial cable**   d) USB cable

4. Expansion of UTP is

    a) Uninterrupted Twisted Pair   b) Uninterrupted Twisted Protocol

    c) Unshielded Twisted Pair   d) Universal Twisted Protocol

5. Which medium is used in the optical fibre cables to transmit data?

    a) Microwave   b) infrared   **c) light**   d) sound

6. Which of the following is a small peripheral device with a sim slot to connect the computers to Internet?

    a) USB   **b) Dongles**   c) Memory card   d) Mobiles

11. Pick the odd one out from the following cables

    a) roll over   b) cross over   **c) null modem**   d) straight through

<div align="center">**Section-B**</div>

Answer the following questions   **(2 Mark)**

1. Write a note on twisted pair cable.

- **Twisted Pair Cable** is type of cable with two or more insulated wires twisted together.
- It has 8 wires which are twisted to ignore electromagnetic interference.
- It started with the speed of 10 mbps and improved the speed to 100 mbps.

2. What are the uses of USB cables?

- The Universal Serial Bus are used to connect keyboard, mouse and other peripheral devices.
- Micro USB is a miniaturized version of the USB used for connecting mobile devices.

<div align="center">**Section-C**</div>

Answer the following questions   **(3 Mark)**

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

Serial Ports	Parallel Ports
• The serial port will send 1 bit at one time.	• The parallel port will send 8 bit at one time.
• Use 9 pins and 2 wires	• Use 25 pins and 8 wires
• Data transmission is slower than parallel port.	• Data transmission is faster than serial port.

4. What is meant by null modem cable?

- The Null modem Cables are the example of the crossover cables.
- This cable is used to join two PCs or two network devices of the same type.
- This cable works at a speed of 10 gbps and more.
- The Ethernet crossover cable is identical on both the ends.

<div align="center">**Section - D**</div>

Answer the following questions: **(5 Mark)**

5. Explain the types of network cables

TYPES OF NETWORK CABLES

1. Coaxial Cables:

- **Coaxial Cables** is used to connect the television sets to home antennas.

- This cable is used to transfer the information in 10 mbps.
- The cable is divided into thinnet and thicknet cables.
- These cables have a copper wire inside and insulation is covered on the top of the copper wire to provide protection to the cable.

2. Twisted Pair Cables:

- **Twisted Pair Cable** is type of cable with two or more insulated wires twisted together.
- It has 8 wires which are twisted to ignore electromagnetic interference.
- It started with the speed of 10 mbps (10BASE-T cable is used) and improved the speed to 100 mbps (100BASE-TX) and finally the cable improved more made to 10 gbps (10GBASE-T).

3. Fiber Optics:

- **Fibre Optic Cable** is strands of glass and pulse of light is used to send the information.
- The optic cable uses light to transmit the information from one place to another.
- These cables are placed in deep underground to avoid any damage to the cables.
- There are two types of fibre optic cables are available are
  - ➢ Single-mode (100BaseBx)
  - ➢ Multimode (100BaseSX)

4. USB Cables:

- The **Universal Serial Bus** are used to connect keyboard, mouse and other peripheral devices.
- Micro USB is a miniaturized version of the USB used for connecting mobile devices.

5. Serial and Parallel cables:

- The **Serial and Parallel interface cables** are used to connect the Internet to the system.
- The system will have both serial port and parallel port.
- The serial port will send 1 bit at one time whereas the parallel port will send 8 bit at one time.

6. Ethernet Cables:

- **Ethernet cable** is the most common type of network cable mainly used for connecting the computers or devices at home or office.
- This cable connects wired devices within the local area network (LAN) for sharing the resources and
- accessing Internet.

14. OPEN SOURCE CONCEPTS

Section – A

Choose the best answer   **(1 Mark)**

1. If the source code of a software is freely accessible by the public, then it is known as

    a) Freeware   b) Firmware   **c) Open source**   d) Public source

Section-B

Answer the following questions   **(2 Mark)**

1. Explain the History of open source software.

- In 1984 Richard Stallman formed **Free Software Foundation (FSF).**
- In 1991 Linus Torvalds developed **Linux**.
- In 1994 **Red Hat** (Commercial Linux) company founded.
- In 1998 **open Source initiative (OSI)** was formed.

5. 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.

Section-C

Answer the following questions   **(3 Mark)**

1. What are the uses of Open source Network Software?
- We can select and use any Open Source Software that suits our needs.
- 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.

2. Explain Free software.
- Freeware usually refers to proprietary software that users can download at no cost, but whose source code cannot be changed.
- It enhances the ability of users to use and enjoy software as they see fit.

3. List out the Popular open source software.
- NS2
- OPEN NMS
- Ubuntu
- MySQL
- PDF Creator
- Open Office

6. Explain Types of Organisations related to Open Source.
Organizations related to Open Source:
- Apache Software Foundation
- The Document Foundation
- The Eclipse Foundation
- Free Software Foundation
- Linux Foundation
- Open Course Ware Consortium
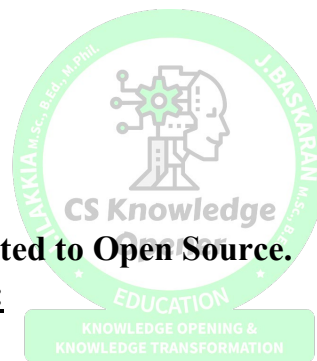
Section - D

Answer the following questions: **(5 Mark)**

1. Differentiate Proprietary and open source software.

Open Source Software	Proprietary software
• It refers to the software that is developed and tested through open collaboration.	• It refers to the software that is solelyowned by the individual or the organization that developed it.
• Anyone with the academic knowledge can access, inspect, modify and redistribute the source code.	• Only the owner or publisher who holds the legal property rights of the source code can access it.

• The project is managed by an open source community of developers and programmers.	• The project is managed by a closed group of individuals or team that developed it.
• They are not aimed at unskilled users outside of the programming community.	• They are focused on a limited market of both skilled and unskilled end users.

2. List out the Benefits of Open Source Software

Benefits of Open Source software:

- We can select and use any software that suits our needs.
- The softwares 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.
- The coding in open source softwares are being groomed by many enthusiastical members of the group.
- Problems in the programs are quickly mended by the group's effort.

3. Explain various Open Source License.

- An open-source licensing allows the source code of a project to be open or transparent, utilized by third parties, or changed or manipulated by members of a developer community.

Types of open source license:

Apache License 2.0:

- The 2.0 version of the Apache License, provides a reliable and long-lived software products through collaborative open source software development.

BSD 3-Clause "New" or "Revised" license

- The **BSD license** is a simple **license** that merely requires that all code retain the **BSD license** notice if redistributed in source code format, or reproduce the notice if redistributed in binary format.

BSD 2-Clause "Simplified" or "FreeBSD" license

- A permissive non-copyleft free software license, compatible with the GNU GPL.

GNU General Public License (GPL)

- **GNU** is a Unix-compatible operating system developed by the GNU project, which was started in 1983 by Richard Stallman with the goal of producing nonproprietary software.

GNU Library or "Lesser" General Public License (LGPL)

- A **Lesser General Public License** (LGPL) is a **license** for open-source software that allows for provisions for including elements of free software in either free or proprietary software.

MIT license

- The Massachusetts Institute of Technology (**MIT**) **license** permits reuse within proprietary software provided that all copies of the **licensed** software include a copy of the **MIT License** terms and the copyright notice.

15. E-COMMERCE

Section – A

Choose the best answer (1 Mark)

1. A company can be called E-Business if

 a) it has many branches across the world.

 b) it conduct business electronically over the Internet.

c) it sells commodities to a foreign country.

d) it has many employees.

2. Which of the following is not a tangible goods?

a) Mobile   **b) Mobile Apps**   c) Medicine   d) Flower bouquet

3. SME stands for

a) Small and medium sized enterprises   b) Simple and medium enterprises

c) Sound messaging enterprises   d) Short messaging enterprises

4. The dotcom phenomenon deals with_____

a) Textile industries   b) Mobile phone companies

c) Internet based companies   d) All the above

5. Which of the following is not correctly matched

a) The First Wave of Electronic Commerce: 1985 -1990

b) The Second Wave of Electronic Commerce: 2004 – 2009

c) The Third Wave of Electronic Commerce: 2010 – Present

d) Dotcom burst: 2000 – 2002

6. Assertion (A): The websites of first wave dotcom companies were only in English

Reason (R): The dotcom companies of first wave are mostly American companies.

a) Both (A) and (R) are correct and (R) is the correct explanation of (A)

b) Both (A) and (R) are correct, but (R) is not the correct explanation of (A)

c) (A) is true and (R) is false d) (A) is false and (R) is true

9. ____ host the e-books on their websites.

a) Bulk-buying sites   b) Community sites   **c) Digital publishing sites**   d) Licensing sites

10. Which of the following is not a characteristics of E-Commerce

a) Products cannot be inspected physically before purchase.

b) Goods are delivered instantly.

c) Resource focus supply side

d) Scope of business is global.

Section-B

Answer the following questions   **(2 Mark)**

1. Define E-Commerce.

- E-Commerce can be described as the process of buying or selling products, services or information via Internet.
- E-Commerce is currently one of the most important aspects of Internet era.
- E-stands for electronic.

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

E-Business	E-Commerce
• E-Business entirely depends on the Internet for its every intra-company and inter-company activities.	• E-Commerce is commercial transaction through Internet.
• E-Business is a superset of E-Commerce.	• E-Commerce is a subset of E-Business.

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

Tangible form	Electronic form
• Tangible form – e.g. a digital camera purchased by a consumer from an online shopping website which might be delivered at the requested address.	• Electronic form – e.g. a music album or software downloaded from a site which might be delivered in electronic form.

4. What is dotcom bubble and dotcom burst?

Dotcom Bubble:

- The Dotcom Bubble was a historic excessive growth (excessive assumption) of economy that occurred roughly between 1995 and 2000.

Dotcom Burst:

- The Nasdaq-Composite stock market index, fell from 5046.86 to 1114.11.
- This is infamously, known as the Dotcom Crash or Dotcom Burst.

<div align="center">**Section-C**</div>

Answer the following questions   **(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.
- The more, the medium becomes deep rooted, the more, are the users drawn towards it.
- Increase of users, increases the markets.
- As the markets expand, more business organizations are attracted.

2. 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.
- Not only the information is filtered by time, but also the geographic coordinates are used to screen the specific location-tailored information properly.

4. Write a note on name-your-price websites.

- Name-your-price sites are just like normal retail sites.
- In contrast, the buyer negotiates with the retailer for a particular product or service.
- **Example:** https://in.hotels.com/ .

<div align="center">**Section - D**</div>

Answer the following questions: **(5 Mark)**

1. Write about the development and growth of Electronic Commerce.

- Electronic commerce and the information revolution brought about by the Internet likely go through a series of waves.

The First Wave of Electronic Commerce: 1995 -2003

- The Dotcom bubble had attracted huge investments to first wave companies.
- As the Internet was mere read-only web (web 1.0) and network technology was in its beginning stage, the bandwidth and network security was very low.

The Second Wave of Electronic Commerce: 2004 – 2009

- The second wave is the rebirth of E-Commerce after the dotcom burst.
- The second wave is considered as the global wave, with sellers doing business in many countries and in many languages.

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-time and on-demand transactions.

3. Explain any five E-Commerce revenue models.

E-Commerce Revenue Models:

1. AUCTION SITE

- It is a kind of website, that auctions items on the Internet and levies some commission from the sales.
- **Example:** https://www.ebay.com/

2. BANNER ADVERTISEMENT SITE

- It displays advertisements of other companies in its websites and thereby earns revenue.

3. BULK-BUYING SITES

- It collects 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.
- **Example:** https://www.alibaba.com/

4. DIGITAL PUBLISHING SITES

- It effectively host the e-books or magazines on the web.
- They make profits in a number of ways such as advertising, selling etc., **https://wordpress.org/**

5. LICENSING SITES

- It allows other websites to make use of their software.

6. NAME-YOUR-PRICE SITES

- They are just like normal retail sites.
- **Example:** https://in.hotels.com/
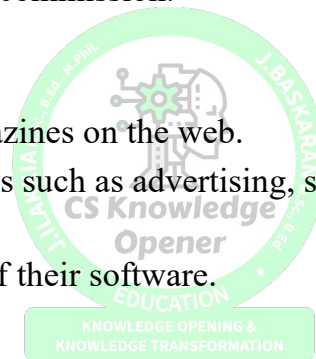
16. ELECTRONIC PAYMENT SYSTEMS

Section – A

Choose the best answer   **(1 Mark)**

1. Based on the monetary value e payment system can be classified into
   - **a) Mirco and Macro**
   - b) Micro and Nano
   - c) Maximum and Minimum
   - d) Maximum and Macro

2. Which of the following is not a category of micropayment?
   - a) Buying a movie ticket
   - b) Subscription to e journals
   - **c) Buying a laptop**
   - d) Paying for smartphone app

3. Assertion (A): Micro electronic payment systems support higher value payments.
   Reason (R): Expensive cryptographic operations are included in macro payments
   - a) Both (A) and (R) are correct and (R) is the correct explanation of (A)
   - b) Both (A) and (R) are correct, but (R) is not the correct explanation of (A)
   - c) (A) is true and (R) is false
   - **d) (A) is false and (R) is true**

4. Which of the following is correctly matched
     a) Credit Cards - pay before   **b) Debit Cards - pay now**
     c) Stored Value Card - pay later   d) Smart card – pay anytime

5. ECS stands for
     a) Electronic Clearing Services   b) Electronic Cloning Services
     c) Electronic Clearing Station   d) Electronic Cloning Station

6. Which of the following is a online payment system for small payments?
     a) Card based payment   **b) Micro electronic payment**
     c) Macro electronic payment   d) Credit card payment

8. Pick the odd one in the credit card transaction
     a) card holder   b) merchant   **c) marketing manager**   d) acquirer

9. Which of the following is true about debit card
     i. debit cards cannot be used in ATMs
     ii. debit cards cannot be used in online transactions
     iii. debit cards do not need bank accounts
     iv. debit cards and credit cards are identical in physical properties
     a) i, ii, iii   b) ii, iii, iv   c) iii alone   **d) iv alone**

10. Match the following

List A	List B
A1) First Digit	B1) Account number
A2) 9th to 15th Digit	B2) MII Code
A3) First 6 Digits	B3) BIN Code
A4) Last Digit	B4) Check digit

A1	A2	A3	A4
a) B4 B3 B2 B1	**b) B2 B1 B3 B4**	c) B2 B3 B4 B1	d) B2 B4 B3 B1

<center>**Section-B**</center>

Answer the following questions   **(2 Mark)**

1. Define electronic payment system
- An Electronic payment system is a financial arrangement that consists an intermediator to facilitate transfer of money-substitute between a payer and a receiver.

2. Distinguish micro electronic payment and macro electronic payment

MICRO ELECTRONIC PAYMENT	MACRO ELECTRONIC PAYMENT
• Online payment system designed to allow efficient and frequent payments of small amounts.	• Macro electronic payment systems support payments of higher value.

3. List the types of micro electronic payments based on its algorithm
- Hash chain based micro electronic payment systems.
- Hash collisions and hash sequences based micro electronic payment systems.
- Shared secrete keys based micro electronic payment systems.

4. Explain the concept of e-wallet

- Electronic wallets (e-wallets) or electronic purses allow users to make electronic transactions quickly and securely over the Internet through smartphones or computers.

5. What is credit card network?

- Credit card network acts as the intermediate between the banks.
- The Company responsible for communicating the transaction between the acquirer and the credit card issuer.

<div align="center">

Section-C

</div>

Answer the following questions   **(3 Mark)**

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:

- An e-commerce payment system facilitates the acceptance of electronic payment for online transaction.
- E-commerce payment systems have become increasingly popular due to the widespread use of internet-based shopping and banking.

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

CREDIT CARD	DEBIT CARD
• Pay Later System	• Pay Now System
• The credit card issuer lends money to customer with an agreed interest.	• The debit card deducts the amount directly from customer's bank account.
• The bank account is not prerequisite for issuing a credit card.	• The bank account is must for issuing a debit card.

3. Explain briefly Anatomy of a credit card.

- All Payment cards are usually plastic cards of size **85.60 mm width × 53.98 mm height**, rounded corners with a radius of **2.88 mm to 3.48 mm** and thickness of **0.76 mm**.
- These standards dimensions are maintained universally in accordance with ISO/IEC 7810#ID-1.

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

- Stored value card is a type of debit card that is pre-loaded with certain amount(value), with which a payment is made.

TYPES OF STORED VALUE CARD:

1) Closed loop (single purpose)
2) Open loop (multipurpose)

5. What is electronic fund transfer?

- Electronic Funds Transfer (EFT) is the "electronic transfer" of money over an online network.
- The amount sent from the sender's bank branch is credited to the receiver's bank branch on the same day in batches.

Section - D

Answer the following questions: (5 Mark)

1. What is credit card? Explain the key players of a credit card payment system and bring out the merits of it.

- Credit card is an electronic payment system enables the bearer to buy goods or services from a vendor, based on the cardholder's promise to the card issuer to payback the value later with an agreed interest.

Advantages Of Credit Card

- It is not necessary to pay physical money at the time of purchase.
- Depending on the card, there is no need to pay annuity.

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 (transactor) **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.

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 in case of default

2. Briefly explain Electronic Account transfer and its types.

- With the advent of computers, network technologies and electronic communications a large number of alternative electronic payment systems have emerged.

ECS (Electronic Clearing Services)

- Electronic Clearing Service can be defined as repeated transfer of funds from one bank account to multiple bank accounts or vice versa using computer and Internet technology.
- Advantages of this system are bulk payments, guaranteed payments and no need to remember payment dates.

EFT (Electronic funds transfers)

- Electronic Funds Transfer (EFT) is the "electronic transfer" of money over an online network.
- 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 system (RTGS)

- Real Time Gross Settlement system (RTGS) is a payment system particularly used for the settlement of transactions between financial institutions, especially banks.
- As name indicates, RTGS transactions are processed at the real time.

4. Write about smart card and type.

- The modern version of card based payment is **smart cards**.

- This chip is similar to well-known **sim card** in appearance but differ in its functionalities.
- Smart cards can be classified into **Contact smart cards** and **Contactless smart cards.**

Advantage of Smart Cards:

- Identification
- Authentication
- Data storage

Contact smart cards

- Contact smart cards have a contact area of approximately 1 square centimeter, comprising several gold-plated contact pads.
- **Example**: A Point Of Sale Terminal (POS).

Contactless smart cards

- Contactless smart card is empowered by RF induction technology.
- Unlike contact smart cards, these cards require only near proximity to an antenna to communicate.

17. E-COMMERCE SECURITY SYSTEMS

Section – A

Choose the best answer   **(1 Mark)**

3. Asymmetric encryption is also called as
   a) Secure Electronic Transaction   b) Certification Authority
   c) RSA algorithm   d) Payment Information
4. The security authentication technology does not include
   i) Digital Signatures   ii) Digital Time Stamps
   iii) Digital Technology   iv) Digital Certificates
   a) i, ii & iv   **b) ii & iii**   c) i, ii & iii   d) all the above
5. PGP stands for
   a) Pretty Good Privacy   b) Pretty Good Person
   c) Private Good Privacy   d) Private Good Person
6. _____ protocol is used for securing credit cards transactions via the Internet
   a) Secure Electronic Transaction (SET)   b) Credit Card Verification
   c) Symmetric Key Encryption   d) Public Key Encryption
7. Secure Electronic Transaction (SET) was developed in
   a) 1999   **b) 1996**   c) 1969   d) 1997
8. The websites secured by Secure Socket Layer protocols can be identified using
   a) html://   b) http://   c) htmls://   **d) https://**
9. 3-D Secure, a protocol was developed by
   a) Visa   b) Master   c) Rupay   d) PayTM
10. Which of the following is true about Ransomware
   a) Ransomware is not a subset of malware   b) Ransomware deletes the file instantly
   c) Typopiracy is a form of ransomware   **d) Hackers demand ransom from the victim**

Section-B

Answer the following questions **(2 Mark)**

3. Define non-repudiation.

- Non-repudiation ensures that the signer who digitally signed the document cannot deny having signed it.
- It prevents against violation agreement after the deal.

4. List the different types of security technologies in E-Commerce

The security technologies in E-Commerce transactions are classified into

● 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.

Section-C

Answer the following questions **(3 Mark)**

1. Write a note on certification authorities (CA)

- Digital certificates are issued by recognized Certification Authorities (CA).
- When someone requests a digital certificate, the authority verifies the identity of the requester, and if the requester fulfills all requirements, the authority issues it.

3. Differentiate asymmetric and symmetric algorithms.

Symmetric Key Encryption	Asymmetric Key Encryption
• Same key is used for both encryption and decryption	• Different keys are used for encryption and decryption
• Speed of encryption or decryption is very fast	• Speed of encryption or decryption is comparatively slow
• Plain text and cipher text are of same size	• The size of cipher text is always greater than plain text.

4. Write a note on PGP.

- **Pretty Good Privacy (PGP)** is a decentralized encryption program that provides cryptographic privacy and authentication for data communication.
- PGP encryption uses a serial combination of hashing, data compression, symmetric-key cryptography and asymmetric-key cryptography and works on the concept of "web of trust".

5. Explain 3D secure payment protocols

- 3-D Secure is a secure payment protocol on the Internet, developed by Visa and adapted by MasterCard.
- It gives a better authentication of the holder of the payment card, during purchases made on websites.
- This protocol is used to link the financial authorization process with an online authentication system.

Section - D

Answer the following questions: **(5 Mark)**

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.

2. Explain encryption technology.

- Encryption technology is an effective information security protection.

- It is defined as converting a Plaintext into meaningless Ciphertext using encryption algorithm thus ensuring the confidentiality of the data.

Types of Encryption Technologies:

- Symmetric Key Encryption System

- Asymmetric Key Encryption System.

1) Symmetric Key Encryption:

- The Data Encryption Standard (DES) is a Symmetric key data encryption method.

- DES is the typical block algorithm that takes a string of bits of clear text (plain text) with a fixed length and transforms it into encrypted text of the same length.

- DES also uses a key because the algorithm can only be deciphered by people who know the exact key that has been used for encryption.

2) Asymmetric Or Public Key Encryption:

- Asymmetric encryption also called as RSA (Rivest-Shamir-Adleman) algorithm.

- It uses public-key authentication and digital signatures.

- Symmetric Cryptosystems raises the problem of key exchange and key management.

3. Differentiate digital signatures and digital certificates.

Digital Signature	Digital Certificate
• A digital signature is a mechanism that is used to verify that a particular digital document, message or transaction is authentic.	• A digital certificate is a computer file which officially approves the relation between the holder of the certificate and a particular public key.
• Digital signatures are used to verify the trustworthiness of the data being sent.	• Digital certificates are used to verify the trustworthiness of the sender.
• Digital signature is to ensure that a data remain secure from the point it was issued and it was not modified by a third party.	• Digital certificate binds a digital signature to an Entity.
• It provides authentication, non-repudiation and integrity	• It provides authentication and security.
• A digital signature is created using a Digital Signature Standard (DSS).	• A digital certificate works on the principles of public key cryptography standards (PKCS).

4. Define Secure Electronic Transaction (SET) and its features.

- Secure Electronic Transaction (SET) is a security protocol for electronic payments with credit cards by VISA and MasterCard.
- SET implementation is based on the use of digital signatures and encrypted data with asymmetric and symmetric algorithms.
- SET also use dual signatures to ensure the privacy.
- The SET purchase involves three major participants:
  - ➢ The Customer,
  - ➢ The Seller
  - ➢ The Payment Gateway.

ADVANTAGES:

- Ensures the integrity and the non-repudiation of transaction data.
- Internationally recognized standard for credit card online transaction.

KEY 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

5. Briefly explain SSL.

- Secure Sockets Layers (SSL) is a common Cryptographic protocol.
- SSL is a hybrid encryption protocol for securing transactions over the Internet developed by Netscape.
- It is based on a public key cryptography process to ensure the security of data transmission over the internet.
- Its principle is to establish a secure communication channel (encrypted) between a client and a server after an authentication step.
- The SSL system ensures the security of data, located between the application layer and the transport layer in TCP.
- For example, a user using an internet browser to connect to an SSL secured E-Commerce site will send encrypted data without any more necessary manipulations.

18. ELECTRONIC DATA INTERCHANGE- EDI

Section – A

Choose the best answer   **(1 Mark)**

2. Which of the following is an internationally recognized standard format for trade, transportation, insurance, banking and customs?

    a) TSLFACT   b) SETFACT   c) FTPFACT   **d) EDIFACT**

3. Which is the first industry-specific EDI standard?

    a) TDCC   b) VISA   c) Master   d) ANSI

4. UNSM stands for?

    a) Universal Natural Standard message   b) Universal Notations for Simple message

    c) United Nations Standard message   d) United Nations Service message

5. Which of the following is a type of EDI?

    a) Direct EDI   b) Indirect EDI   c) Collective EDI   d) Unique EDI

6. Who is called as the father of EDI?

    a) Charles Babbage   **b) Ed Guilbert**   c) Pascal   d) None of the above

7. EDI interchanges starts with _____ and ends with _____

    a) UNA, UNZ   **b) UNB, UNZ**   c) UNA, UNT   d) UNB, UNT

8. EDIFACT stands for

    a) EDI for Admissible Commercial Transport

    b) EDI for Advisory Committee and Transport

    c) EDI for Administration, Commerce and Transport

    d) EDI for Admissible Commerce and Trade

9. The versions of EDIFACT are also called as

    a) Message types   b) Subsets   **c) Directories**   d) Folders

10. Number of characters in an single EDIFACT messages

    a) 5   **b) 6**   c) 4   d) 3

<div align="center">**Section-B**</div>

Answer the following questions   **(2 Mark)**

3. What are the 4 major components of EDI?

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

4. What is meant by directories in EDIFACT?

- The versions of EDIFACT are also called as directories.
- These EDIFACT directories will be revised twice a year to include new or update existing EDIFACT messages.

5. Write a note on EDIFACT subsets.

- Due to the complexity, branch-specific subsets of EDIFACT have developed.
- These subsets of EDIFACT include only the functions relevant to specific user groups.

<div align="center">**Section-C**</div>

Answer the following questions   **(3 Mark)**

2. List the various layers of EDI.

- Electronic data interchange architecture specifies four different layers namely,
  - 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.
- In 1987, the UN / EDIFACT syntax rules were approved as ISO: ISO9735 standard by the International Organization for Standardization.

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).
- In so-called subsets, the message types can be specified deeper in their characteristics depending on the sector.
- The message types, all of which always have exactly one nickname consisting of six uppercase English alphabets.

5. Write about EDIFACT separators.

EDIFACT has the following punctuation marks that are used as standard separators.

Character	Uses
Apostrophe '	Segment terminator
Plus sign +	Segment tag and data element separator
Colon :	Component data element separator
Question mark ?	Release character
Period .	Decimal point
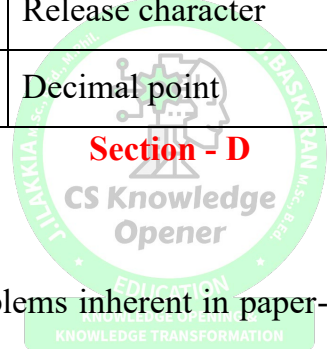
Section - D

Answer the following questions: **(5 Mark)** .

2. What are the advantages of EDI?

- EDI was developed to solve the problems inherent in paper-based transaction processing and in other forms of electronic communication.
- Implementing EDI system offers a company greater control over its supply chain and allow it to trade more effectively.
- The following are the other advantages of EDI.
  - ➢ Improving service to end users
  - ➢ Increasing productivity
  - ➢ Minimizing errors
  - ➢ Slashing response times
  - ➢ Automation of operations
  - ➢ Cutting costs

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 messages consist of segments, which in turn consist of composites.
- The final iteration is a data element.

Segment Tables:

- Segment table lists the message tags.

- It contains the tags, tag names, requirements designator and repetition field.
- The requirement designator may be mandatory (M) or conditional (C).

EDI Interchange:
- Interchange is also called as envelope.
- The top level of EDIFACT structure is Interchange.
- It starts with UNB and ends with UNZ.

EDIFACT message:
- The basic standardization concept of EDIFACT is that there are uniform message types called United Nations Standard Message (UNSM).

Service Messages: To confirm / reject a message, CONTRL and APERAK messages are sent.

Data exchange: **CREMUL, DELFOR, IFTMBC**

EDIFACT Segment:
- It is the subset of message.
- A segment is a three-character alphanumeric code.

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

EDI Separators:
- EDIFACT punctuation marks that are used as standard separators.

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