

COMPUTER APPLICATIONS

XII – STANDARD

**PUBLIC EXAMINATION QUESTIONS WITH ANSWERS
[MARCH-2020 TO JUN -2024]**

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CHAPTER 1 TO 18 PUBLIC ONE MARK QUESTION WITH ANSWERS [MARCH-2020 TO JUNE -2024]

- RTF (Rich Text Format) file format was introduced by--- (J-2023, J-2024)
a) TCS b) Microsoft c) Apple Inc d) IBM
- The expansion of JPEG is ----- (M-2022)
a) Joint photographic experts group b) Joint Photo Experts Group
c) Joint Photon Experts Group d) Joint Photographic Express Group
- AIFF file format was developed by – (M-2024)
a) TCS b) Microsoft c) Apple Inc d) IBM
- Write the expansion of MIDI : (M-2020)
a) Musical Information Digital Interpreter b) Musical Instrument Digital Information
c) Musical Intelligent Digital Interface d) Musical Instrument Digital Identifier
- The live telecasting of real time program through Internet is known as ____ (M-2023)
a) Web casting b) web hosting c) data manipulation d) none
- The least frame rate of at least _____ frames in Multimedia Animation. (S-2020)
a) 10 b) 12 c) 15 d) 16
- Which is not an image format? (S-2020)
a) AIFF b) GIF c) TIFF d) JPEG
- refers to any types of applications that involves more than one type of media such as text, graphics, videos, animation and sound. (J-2022)
a) An executable file b) DTP c) Multimedia d) Hyper text

(CHAPTER-2) (AN INTRODUCTION TO ADOBE PAGE MAKER)

- (CHAPTER-3) (INTRODUCTION TO DATABASE MANAGEMENT SYSTEM)**
1. The ----- diagram gives a logical structure of the database graphically? (M-2022)
a) **Entity-Relationship** b) Entity c) Architectural d) Database
 2. An entity set that does not have enough attributes to form primary key is known as --- (J-2023)
a) Strong entity set b) **Weak entity set** c) Identity set d) Owner set
 3. MYSQL belongs to which category of DBMS? (M-2023)
a) Object Oriented b) Hierarchical c) **Relational** d) Network
 4. SQL can be expanded as--- (J-2022)(M-2022)
a) Script Query Language b) Special Query Language
c) Server Query Language d) **Structured Query Language**
 5. The horizontal entity in a Table is known as ---- (M-2020)
a) Key b) **Record** c) Table d) Column
 6. Which one of the following is not a DDL command? (M-2020)
a) **INSERT** b) CREATE c) ALTER d) DROP
 7. _____ uniquely identifies the row in Database table. (S-2020)
a) Foreign key b) Super key c) **Primary key** d) Composite key
 8. DBMS stands for ----- (J-2022)
a) Database model system b) **Database management system**
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9. Identify the data query language command used to retrieve the data from the database. (M-2024)
 a) Delete b) Insert **c) Select** d) Update

(CHAPTER-4) (PHP: HYPERTEXT PRE-PROCESSOR)

1. What is the extension of PHP file? (M-2022)
 a) .html b) .xml **c) .php** d) .ph
2. --- is a data type which contains decimal numbers (J-2024)
 a) Integer **b) Float** c) Boolean d) NULL
3. A PHP script should start with ____ (J-2023)
a) <?php b) < php c) <php? > d) <:?
4. Recent statistics of server side scripting language usage depict that 78.9% of Website are developed by ---- Scripting language. (M-2023)
a) PHP b) Microsoft ASP c) CSS d) JSP
5. PHP is a ----- Programming language (M-2022)
 a) Object Side b) Client side c) File side **d) Server side**
6. We can use ____ to comment a single line? i) /? ii) // iii) # iv) /* */ (M-2020)
 a) Only (ii) b) (i), (iii) and (iv) **c) (ii), (iii) and (iv)** d) Both (ii) and (iv)
7. Which of the following PHP statements will output 'Hello world' on the screen? (J-2022)
a) echo("Hello world"); b) print("Hello world"); c) printf("Hello world"); d) sprintf("Hello world");
8. Which statement is used to show the output of a string or other data in the screen in PHP? (M-2024)
 a) for b) switch c) while **d) echo**

(CHAPTER-5) (FUNCTIONS AND ARRAYS IN PHP)

1. A user-defined function in PHP starts with the keyword ----. (M-2024)
a) function b) def c) defined d) funct
2. How many types of arrays are there in PHP? (J-2022, J-2023, J-2024)
 a) 2 **b) 3** c) 4 d) 5
3. Associative arrays are a --- pair data Structure. (M-2023)
 a) Single value **b) Key value** c) Double d) String value
4. ----- stores more than one value of same data type in single array value. (M-2022)
a) Array b) Function c) Indexed d) Multidimensional
5. The loop exclusively used for array is ---- (M-2022)
 a) for b) while **c) for each** d) Do while
6. How many functions are there in PHP? (M-2020)
 a) 5 b) 4 c) 3 **d) 2**
7. PHP - numerically indexed array begin with Position ____ (S-2020)
 a) -1 b) 1 **c) 0** d) 2

(CHAPTER-6) (CONDITIONAL STATEMENTS IN PHP)

1. What type of statement is the if..else statement? (J-2024)
a) Conditional statement b) Looping c) Input d) Output
2. Which of the following is used to terminate the switch statement? (M-2024)
 a) return b) continue c) goto **d) break**
3. Statement which is used to make choice between two options any only option is to be performed is written as (M-2022)
 a) Then else statement b) if c) else one **d) if else statement**

(CHAPTER-7) (LOOPS IN PHP)

1. What is the purpose of the 'increment' part of a for loop? (J-2024)
 a) To initialize variables **b) To update variables**
 c) To check the condition d) To execute the code block
2. ---loops exclusively used for array? (J-2023)
 a) For loop b) While loop c) Do while loop **d) For each loop**
3. Loops that iterate for fixed number of times is called--- (M-2023)
 a) Unbounded **b) Bounded** c) While d) For
4. --- check the condition at the end. (S-2020)
 a) for **b) Do-while** c) for each d) while
5. The ----loop construct over the array. (J-2022)
 a) for **b) for each** c) while d) Do-while
6. What is the output of the following code? for(\$i=0;\$i<=1;\$i--) { echo \$i."
"; } (M-2024 mere attempt)
 a) 5432 b) 12345 c) 1234 d) 54321

(CHAPTER-8) (FORMS AND FILES)

1. How many types of validation are available in PHP? (J-2024)
 a) One **b) Two** c) Three d) Four
2. Which attribute of form tag helps in client side validation (J-2023)
 (a) Submit b) Check c) Validate **d) Required**
3. In which input field only one option can be selected? (M-2023)
 a) Text box b) Check box **c) radio button** d) Drop Down

- ## **(CHAPTER-9) (CONNECTING PHP AND MYSQL)**

- (CHAPTER-10) (INTRODUCTION TO COMPUTER NETWORKS)**

- ## **(CHAPTER-11) (NETWORK EXAMPLES AND PROTOCOLS)**

- ## (CHAPTER-12) (DOMAIN NAME SYSTEM (DNS))

- (CHAPTER-13) (NETWORK CABLING)**

- 3

5. The cables that are placed in deep underground to avoid any damage to the cables (M-2023)
 a) Fiber optics b) Coaxial c) USB cables d) Twisted pair cables

(CHAPTER-14) (OPEN SOURCE CONCEPTS)

1. Which is an example of network simulator? (M-2023)
 a) Simulator b) TCL c) NS2 d) C++
 2. Open NMS was released in ... (J-2024)
 a) 1999 b) 2000 c) 2003 d) 2004

(CHAPTER-15) (E-COMMERCE)

1. Which of the following is not a tangible good? (J-2024)
 a) Mobile Phone b) Mobile Apps
 c) Medicine d) Flower bouquet
 2. SME stands for----- (J-2022, M-2024)
 a) Small and medium sized enterprises b) Simple and medium enterprises
 c) Sound messaging enterprises d) Short messaging enterprises
 3. The dotcom phenomenon deals with _____ (S-2020, M-2023)
 a) Textile industries b) Mobile phone companies
 c) Internet based companies d) All the above
 4. Which of the following is not correctly matched (J-2023)
 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
 5. Assertion (A): The websites of first wave dotcom companies were only in English (M-2022)
 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

(CHAPTER-16) (ELECTRONIC PAYMENT SYSTEMS)

1. Based on the monetary value e - payment system can be classified into (J-2022)
 a) Mirco and Macro b) Micro and Nano
 c) Maximum and Minimum d) Maximum and Macro
 2. Which of the following is correctly matched (M-2024)
 a) Credit Cards - pay before b) Debit Cards - pay now
 c) Stored Value Card - pay later d) Smart card – pay anytime
 3. ECS stands for---- (J-2023)
 a) Electronic Clearing Services b) Electronic Cloning Services
 c) Electronic Clearing Station d) Electronic Cloning Station
 4. Pick the odd one in the credit card transaction--- (M-2022)
 a) Card holder b) merchant
 c) Marketing manager d) acquirer

(CHAPTER-17) (E-COMMERCE SECURITY SYSTEMS)


1. Which of the following is not a security element involved in E-Commerce? (M-2024)
 a) Authenticity b) Confidentiality c) Phishing d) Privacy
 2. PGP stands for ----- (M-2023)
 a) Pretty Good Privacy b) Pretty Good Person
 c) Private Good Privacy d) Private Good Person
 3. Secure Electronic Transaction (SET) was developed in ----- (J-2022, J-2023)
 a) 1999 b) 1996 c) 1969 d) 1997
 4. The websites secured by Secure Socket Layer protocols can be identified using---- (M-2022)
 a) html:// b) http:// c) https:// d) https://
 5. ---- is the process of converting plain text into meaningless cipher text. (J-2024)
 a) Encryption b) Decryption c) Digital certificate d) Digital signature
 6. Expansion of SET : (S-2020)
 a) Secure Enabled Transaction b) Secure Electronic Transaction
 c) Secure Exchange Transaction d) Secure Electric Transaction

(CHAPTER-18) (ELECTRONIC DATA INTERCHANGE- EDI)

1. Who is called as the father of EDI? (J-2024)
 a) Charles Babbage b) Ed Guilbert c) Pascal d) None
 2. The versions of EDIFACT are also called as (M-2022)
 a) Message types b) Subsets c) Directories d) Folders
 3. UNSM stands for ---- (J-2022)
 a) United Nations Standard Message b) Universal natural standard message
 c) Universal notation simple message d) United nation service message

CHAPTER 1 TO 18 TWO MARK PUBLIC QUESTION WITH ANSWERS [MARCH-2020 TO JUNE-2024]

CHAPTER – 1 (MULTIMEDIA)	
1.	Define Multimedia. (S-2020, M-2023) ❖ The word multimedia consists of two words “multi” and “media”. ❖ Multimedia is a computer based presentation technique that inter corporates text, images, sound, video and animation.
2.	List out Multimedia Components: ❖ Multimedia has five major components like 1.text, 2.images, 3..sound, 4.video and 5.animation
3.	Define Animation (J-2023) ❖ Animation is the process displaying still images so quickly so that they give the impression of continuous movement. ❖ Types: 1. Path Animation 2. Frame Animation
4.	List out video file formats with expansion. (M-2022) 1) AVI (Audio/Video Interleave) 2) MPEG (Moving Picture Experts Group) 3) WMV(Windows Media Video) 4) MOV(Quick time format) 4) FLV (Adobe Flash Video Format)
5.	Define – Multimedia production (J-2022) ❖ Adequate time and efficient planning is required for multimedia production. ❖ This assures that the project will proceed smoothly and ensures that the information reaches the target audience.
6.	List out audio file formats: (M-2024) 1) WAV (Waveform Audio File Format) 2) MP3 (MPEG Layer-3 Format) 3) OGG 4) WMA (Windows Media Audio) 5) RA (Real Audio Format) 6) AIFF (Audio Interchange File Format)
CHAPTER – 2 (AN INTRODUCTION TO ADOBE PAGE MAKER)	
1.	What is desktop publishing? (S-2020) ❖ Desktop publishing (abbreviated DTP) is the creation of page layouts for documents using DTP software.
2.	What is a Pasteboard in PageMaker? (J-2023) ❖ A document page is displayed within a dark border. ❖ The area outside of the dark border is referred to as the pasteboard . ❖ Anything that is placed completely in the pasteboard is not visible when you print the document. ❖ The use of pasteboard is to temporarily hold elements while designing your document.
3.	What is text editing? (M-2020) ❖ Editing means making changes to the text . ❖ Editing may be inserting and deleting words and phrases, correcting errors, and moving and copying text to different places in the document.
4.	What is threading text blocks? (J-2024) ❖ A Text block can be connected to other text block so that the text in one text block can flow into another text block. ❖ Text blocks that are connected in this way are threaded .
5.	What is threading text? (J-2022) ❖ The process of connecting text among Text blocks is called threading text.
6.	How will you delete text in PageMaker file? (M-2020) To delete a character, do the following: (i) Position the insertion point to the left of the character to be deleted. (ii) Press Delete key on the keyboard. (or) (iii) Position the insertion point to the right of the character to be deleted.(iv) Press Backspace key on the keyboard.
7.	Write the command and shortcut key to cut and paste a block of a document in Abode PageMaker. (M-2022) ❖ The selected text can be easily cut and pasted in the required location. To cut and paste text: 1. Select the text to be moved. 2. Choose Edit > Cut in the menu bar. 3. Insertion point is moved to the place where the text is to be pasted. 4. Choose Edit > Paste in the menu bar. The following keyboard shortcuts can be used to move text: 1.Ctrl + X → to Cut 2. Ctrl + V → to Paste
8.	What is text blocks? (M-2023) ❖ A Text block contains text you type, paste or import. ❖ You can't see the borders of a text block until you select it with the pointer tool.
CHAPTER - 3 (INTRODUCTION TO DATABASE MANAGEMENT SYSTEM)	
1.	List any two DDL and DML commands with its Syntax. (M-2024)
DDL Commands	<u>1.CREATE</u> Used to create database or tables Syntax : CREATE database data base name; <u>2. DROP</u> Deletes a database or table. Syntax : DROP database data base name;
DML Commands	<u>1. INSERT</u> Adds new rows into database table. Syntax : ❖ INSERT INTO table name (column1, column2, column3) VALUES (value1, value2, value3); <u>2. DELETE</u> Deletes the records from the table. Syntax : ❖ DELETE from table name WHERE Column name="value";

2.	<p>Write the difference between SQL and My SQL. (M-2022)</p> <table border="1"> <thead> <tr> <th>SQL</th><th>My SQL</th></tr> </thead> <tbody> <tr> <td>❖ SQL is a Structured query language is not a database</td><td>❖ MySQL is a database management system. (Software)</td></tr> <tr> <td>❖ Used to access the database.</td><td>❖ Allows managing relational databases.</td></tr> <tr> <td>❖ It is used in the accessing, updating and manipulation of data in the database.</td><td>❖ It is an RDBMS that allows keeping the data that exists in a database organized.</td></tr> </tbody> </table>	SQL	My SQL	❖ SQL is a Structured query language is not a database	❖ MySQL is a database management system. (Software)	❖ Used to access the database.	❖ Allows managing relational databases.	❖ It is used in the accessing, updating and manipulation of data in the database.	❖ It is an RDBMS that allows keeping the data that exists in a database organized.
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3.	<p>What is Relationship and List its types. (J-2022)</p> <ul style="list-style-type: none"> ❖ In Entity Relationship Model, relationship exists between two entities. ❖ 1.One-to-One relationship 2.One-to-Many relationship 3.Many-to-Many relationship 								
4.	<p>State few advantages of Relational databases. (M-2023)</p> <ul style="list-style-type: none"> ❖ 1) High Availability, 2) High Performance, 3) Robust Transactions and support ❖ 4) Ease of management, 5) Less cost 								
5.	<p>What is primary key? (M-2023)</p> <ul style="list-style-type: none"> ❖ This key of relational table identifies each record in the table in a unique way 								
6.	<p>Write a short note on cardinality in Data Base Management System. (M-2024)</p> <ul style="list-style-type: none"> ❖ It is defined as the number of different values in any given table column. ❖ It is defined as the number of items that must be included in a relationship. <p>Example :</p> <ul style="list-style-type: none"> ❖ Number of entities in one set mapped with the number of entities of another set via the relationship. ❖ Three classifications in Cardinality are <u>one-to-one</u>, <u>one-to-many</u> and <u>Many-to-Many</u>  <p style="text-align: center;">Figure 3.9 Cardinality</p>								
CHAPTER – 4 (PHP : HYPERTEXT PRE-PROCESSOR)									
1.	<p>What is ‘Echo’ statement used for? Give an example. (J-2024)</p> <ul style="list-style-type: none"> ❖ The echo statement is used to output a string or other data to the screen. ❖ It is a simple and efficient way to display information to the user. <p>Example: echo “Hello, world!”;</p>								
2.	<p>Write short note on PHP (S-2020)</p> <ul style="list-style-type: none"> ❖ PHP (Hypertext Pre-processor) is a one of the important server side Web and general purpose scripting language invented by Rasmus Lerdorf in 1994. ❖ 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. 								
3.	<p>How many types of Syntax are available in PHP (S-2020)</p> <ul style="list-style-type: none"> ❖ Three types of PHP Syntax are available. ❖ 1. Default Syntax. 2. Short Open Tags. 3. HTML Script embed Tags. 								
4.	<p>Is PHP a case sensitive language? (M-2022)</p> <p>(i) Yes, PHP is a case sensitive language both upper and lower case are treated differently.</p> <p>(ii) Example: \$x and \$X are different variable names.</p>								
5.	<p>How to declare variables in PHP? (J-2022)(M-2023)</p> <ul style="list-style-type: none"> ❖ Variable name must always begin with a \$ symbol. <p>EX: \$name = “Balu”; \$age = 30; \$is_admin = true; \$prices = array(10, 20, 30);</p>								
6.	<p>Define client server architecture (J-2023)</p> <ul style="list-style-type: none"> ❖ A server is a computer or a device that provides functionality for the other programs or devices called clients. ❖ This architecture is called the client server model, and a single over all computation is distribution across multiple processes or devices. 								
CHAPTER – 5 (FUNCTIONS AND ARRAYS IN PHP)									
1.	<p>Write a note on Parameterized functions in PHP. (M-2022)</p> <p>(i) PHP Parameterized functions are the functions with parameters or arguments.</p> <p>(ii) Required information can be shared between function declaration and function calling part inside the program.</p>								
2.	<p>Define – Associative array (J-2022)</p> <ul style="list-style-type: none"> ❖ An associative array is a data structure that stores a collection of key-value pairs. ❖ The keys are used to identify the values, and the values can be of any data type. ❖ The keys in an associative array are often called “labels” because they label or identify the corresponding values. 								
3.	<p>How to you call a function in PHP? (M-2024)</p> <ul style="list-style-type: none"> ❖ Calling a function is another name for executing the function. ❖ A function is called simply by using the function name, along with an argument list, as a statement. <p>Syntax</p> <pre>functionName();</pre> <p>(or)</p> <pre>functionName(argument list);</pre>								

CHAPTER – 6 (CONDITIONAL STATEMENTS IN PHP)

1. Write the syntax for an if ... else statement in PHP. (J-2022, J-2023, J-2024)

```
if (condition)
{
    // True-block;
}
else
{
    // False-block;
}
```

2. Write short notes on if-else Statement in PHP. (S-2020)

- ❖ The if ... else statement is a conditional statement in PHP.
- ❖ It executes one block of code if a condition is true and another block of code if the condition is false.

CHAPTER – 7 (LOOPS IN PHP)

1. Write the syntax for an 'while' loop in PHP. (J-2023)

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

2. Write the syntax for: For each loop in PHP. (M-2020)

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

3. Write the Syntax of Switch... case statement in php. (M-2022)

```
switch (expression)
{
    case value1:
        //code to be executed if expression = value1;
        break;
    case value2:
        //code to be executed if expression = value2;
        break;
    default:
        //code to be executed if expression is not equal to any of the values;
}
```

3. List out the looping structure in PHP. (M-2022) (i) for Loop (ii) foreach Loop (iii) While Loop (iv) Do While Loop

4. What is for each loop in PHP? (J-2022)

- ❖ The foreach loop is used to iterate over elements of an array.
- ❖ The foreach loop will iterate over each element of the array and assign the key of the element to the \$key variable and the value of the element to the \$value variable.

5. Differentiate – while loop and do.. while loop in PHP. (M-2024)

while	Do..while loop
❖ While loop is called as the entry check loop	❖ Do..While loop is called as the exit- check loop
❖ The while loop is used to execute a block of code while a certain condition is true.	❖ The do..while loop is similar to the while loop, except that the code block is always executed at least once, even if the condition is false.
❖ The condition is evaluated at the beginning of each iteration of the loop. If it is true, the code block is executed. If it is false, the loop is terminated.	❖ The condition is evaluated at the end of each iteration of the loop. If it is true, the code block is executed again. If it is false, the loop is terminated.

CHAPTER - 8 (FORMS AND FILES)

1. What is form Validation in PHP? (M-2020, M-2023)

- ❖ 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 , server side validation.

2. Write short notes about fopen () function in PHP. (M-2020)

- ❖ fopen() is a system function available in PHP.
- ❖ This function helps to open a file in the server.
- ❖ It contains two parameters one for the file and the other one specifies in which mode the file should be opened (Read/Write).

3. Differentiate Check box and Radio button. (M-2022)


- (i) A checkbox allows the user to select more than one item, while a radio button only can indicate a single selection at a time.
(ii) Also with a radio button, if the user selects a different choice their previous becomes deselected automatically.

4.	<p>Write the syntax to open file function in PHP with an example (M-2024)</p> <p>Syntax:</p> <ul style="list-style-type: none"> ❖ \$file_Object= fopen("FileName", "Read/WriteMode") or die("Error Message!"); ❖ \$file_Object= fopen("FileName", "Read/WriteMode") <p>Example:</p> <pre><?php \$myfile = fopen("Student.txt", "r") or die("Unable to open file!"); ?></pre>				
CHAPTER – 9 (CONNECTING PHP AND MYSQL)					
1.	<p>What is MySQLi function? (J-2024)</p> <ul style="list-style-type: none"> ❖ 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. 				
CHAPTER – 10 (INTRODUCTION TO COMPUTER NETWORKS)					
1.	<p>What are the common uses of computer network? (S-2020, M-2024)</p> <ul style="list-style-type: none"> ❖ 1.Communication 2.Resource sharing 3.Information sharing 				
2.	<p>What is node in Computer network? (J-2024)</p> <ul style="list-style-type: none"> ❖ A computer which is connected to a network is called as node. ❖ The data originates and terminates at these particular nodes is called as a source and destination. 				
3.	<p>What is flame wars? (M-2020)</p> <ul style="list-style-type: none"> ❖ Flame wars are nothing that lengthy exchange of angry or abusive messages between users of an online forum or other discussion area. 				
4.	<p>Write the difference between wired and wireless networks. (M-2022)</p> <table border="1"> <thead> <tr> <th>Wired networks</th><th>Wireless networks</th></tr> </thead> <tbody> <tr> <td>A Wired network system connected with network cable . Ex: Speakers, CCTV, printers, outdoors, and scanners etc., with cables.</td><td>A Wireless network is connecting devices like tablets(tab), indoor cameras and E-readers, etc., without cables (WiFi).</td></tr> </tbody> </table>	Wired networks	Wireless networks	A Wired network system connected with network cable . Ex: Speakers, CCTV, printers, outdoors, and scanners etc., with cables.	A Wireless network is connecting devices like tablets(tab), indoor cameras and E-readers, etc., without cables (WiFi).
Wired networks	Wireless networks				
A Wired network system connected with network cable . Ex: Speakers, CCTV, printers, outdoors, and scanners etc., with cables.	A Wireless network is connecting devices like tablets(tab), indoor cameras and E-readers, etc., without cables (WiFi).				
5.	<p>What are the ways in which network are connected at home? (M-2023)</p> <ul style="list-style-type: none"> ❖ Network at home were connected in two ways 1.Wired Network 2.Wireless Network 				
CHAPTER – 11 (NETWORK EXAMPLES AND PROTOCOLS)					
1.	<p>Define Intranet. (J-2023)</p> <ul style="list-style-type: none"> ❖ 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. ❖ It includes connections through one or more gateway computers to outside internet. 				
2.	<p>List out the benefits of WIFI (M-2023)</p> <p>1) It provides mobility. 2) It provides connection to Internet.3) Flexibility of LAN. 4) Ensures connectivity.5) Low cost, high benefits.</p>				
3.	<p>Write features of Mobile Networks. (S-2020)(J-2022)(J-2023)</p> <ul style="list-style-type: none"> ❖ Less consumption of power is used by mobile devices comparing with a single transmitter or satellite often cell towers were nearer. ❖ Huge capacity than a large transmitter, at single frequency can be used for different or many links as long as they are in different in cells. 				
4.	<p>What are the layers available in TCP/IP reference model? (M-2024)</p> <p>1. Network Access Layer - concerned with building packets. 2. Internet Layer - describes how packets are to be delivered. 3. Transport Layer - ensure the proper transmission of data. 4. Application Layer - application network processes.</p>				
CHAPTER – 12 (DNS - DOMAIN NAME SYSTEM)					
1.	<p>What is an URL? (M-2023)</p> <ul style="list-style-type: none"> ❖ 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. 				
2.	<p>What is a resolver? (J-2023, J-2024)</p> <ul style="list-style-type: none"> ❖ 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. ❖ There is no need of any protocol to form a connection between the resolver and the user program. 				
3.	<p>What are the types of URL? (M-2020)(J-2022) (i) Absolute URL (ii) Relative URL</p>				
CHAPTER – 14 (OPEN SOURCE CONCEPTS)					
1.	<p>What is trace file? (M-2020, M-2023)</p> <ul style="list-style-type: none"> ❖ A significant output of simulation is the trace files. ❖ Trace files can document every incident that happened in the simulation and are used for examination. 				
2.	<p>Write short notes on NS2. (M-2024)</p> <ul style="list-style-type: none"> ❖ NS2 is the abbreviation of NETWORK SIMULATOR version 2. ❖ It was considered explicitly for exploration in network communication and event driven open-source simulator in computer. ❖ OTCL and C++ are used to create and run NS2. 				

3.	Write short note on Open NMS? (J-2024) ❖ Open NMS (Network Management System) is a free and open-source initiative grade network monitoring and network management platform. ❖ It is established and maintained by a community of users, developers and by the Open NMS Group, it offering services, training and support.							
4.	Differentiate free source software and open source software. (S-2020) <table><tr><th>Free source software</th><th>Open source software</th></tr><tr><td>Freeware usually refers to proprietary software that users can download at no cost.</td><td>It refers to the software that is developed and tested through open collaboration</td></tr><tr><td>But whose source code can not be changed</td><td>Anyone with the academic knowledge can access, inspect, modify and redistribute the source code.</td></tr></table>		Free source software	Open source software	Freeware usually refers to proprietary software that users can download at no cost.	It refers to the software that is developed and tested through open collaboration	But whose source code can not be changed	Anyone with the academic knowledge can access, inspect, modify and redistribute the source code.
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Freeware usually refers to proprietary software that users can download at no cost.	It refers to the software that is developed and tested through open collaboration							
But whose source code can not be changed	Anyone with the academic knowledge can access, inspect, modify and redistribute the source code.							
5.	Explain BOSS OS. (J-2023) ❖ BOSS (Bharat Operating System Solutions) Operating System Developed in India by C-DAC (Centre for Development of Advanced Computing) helps to prompt the use of Open Source Software in India ❖ It supports many Indian Languages							
CHAPTER – 16 (ELECTRONIC PAYMENT SYSTEMS)								
1.	Explain the concept of e-wallet. (J-2024) ❖ Electronic wallets (e-wallets) or electronic purses allow users to make electronic transactions quickly and securely over the Internet through smart phones or computers. ❖ The electronic wallet functions almost the same as a physical wallet in term that it holds our money.							
CHAPTER – 18 (ELECTRONIC DATA INTERCHANGE- EDI)								
1.	Define EDI. (J-2024) ❖ The Electronic Data Interchange (EDI) is the exchange of business documents between one trade partner and another electronically. ❖ It is transferred through a dedicated channel or through the Internet in a predefined format without much human intervention.							
2.	What is 3D secure electronic transaction? (S-2020) ❖ 3-D Secure is a secure payment protocol on the Internet. ❖ It was developed by Visa to increase the level of transaction security, and it has been adapted by MasterCard. ❖ It gives a better authentication of the holder of the payment card, during purchases made on websites. <u>This authentication model comprise 3 domains (hence the name 3D) which are:</u> 1. The Acquirer Domain 2. The Issuer Domain 3. The interoperability Domain							

CHAPTER 1 TO 18 THREE MARK PUBLIC QUESTION WITH ANSWERS [MARCH-2020 TO JUNE-2024]

CHAPTER – 1 (MULTIMEDIA)	
1.	List out image file formats : (J-2024) 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) 6) TGA (Tagra) 7) PNG (Portable Network Graphics)
2.	List out video file formats: (M-2022) 1) AVI (Audio/Video Interleave) 2) MPEG (Moving Picture Experts Group) 3) WMV(Windows Media Video) 4) MOV(Quick time format) 4) FLV (Adobe Flash Video Format)
3.	What is animation? Write its types. (M-2020) ❖ Animation is the process of displaying still images so quickly so that they give the impression of continuous movement. In animation the screen object is a vector image. <u>Path Animation:</u> ❖ Path animation involves moving an object on a screen that has a constant background <u>Frame Animation:</u> ❖ In frame animation, multiple objects are allowed to travel simultaneously and the background or the object also changes.
4.	Describe the various file format in multimedia (J-2022) <u>List out Text file formats:</u> 1.RTF 2 .Plain text <u>List out image file formats :</u> 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) <u>List out audio file formats:</u> 1) WAV (Waveform Audio File Format) 2) MP3 (MPEG Layer-3 Format) 3) OGG 4) WMA (Windows Media Audio) 5) RA (Real Audio Format) <u>List out video file formats:</u> 1) AVI (Audio/Video Interleave) 2) MPEG (Moving Picture Experts Group) 3) WMV(Windows Media Video) 4) MOV(Quick time format) 4) FLV (Adobe Flash Video Format)
CHAPTER – 2 (AN INTRODUCTION TO ADOBE PAGE MAKER)	
1.	What is PageMaker? Explain its uses. (J-2022) ❖ Adobe PageMaker is a page layout software. ❖ It is used to design and produce documents that can be printed. ❖ Page layout software includes tools that allow you to easily position text and graphics on document pages. <u>Example:</u> ❖ Creating a newsletter that includes articles and pictures on each page using PageMaker
2.	How do you re-join split blocks? (M-2024) <u>To re-join the two text blocks:</u> 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.
3.	What is the use of Master Page? (M-2020, M-2023) ❖ Any text or object that you place on the master page will appear on the entire document pages to which the master is applied. ❖ It shortens the amount of time because you don't have to create the same objects repeatedly on subsequent pages. ❖ Master Pages commonly contain repeating logos, page numbers, headers and footers.
4.	How to you insert page numbers in Master pages? (M-2022) 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.
5.	How to resize a Text Block in PageMaker? (S-2020) ❖ When you select a text block with the Pointer tool, the block's boundaries become visible. ❖ Two handles are seen above and below the text block. These handles are called Window shades. ❖ There is a dark square on both ends of the handle. These are used to change the size of the text block
CHAPTER - 3 (INTRODUCTION TO DATABASE MANAGEMENT SYSTEM)	
1.	What is relationship in databases? List its types. (M-2022, M-2023) ❖ 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 <u>One-to-One relationship:</u> ❖ Consider two entities A and B. ❖ one-to-one (1:1) relationship is said to exist in a relational database design, if 0 or 1 instance of entity A is associated with 0 or 1 instance of entity B, and 0 or 1 instance of entity B is associated with 0 or 1 instance of entity A.

	<p>One-to-Many relationship:</p> <ul style="list-style-type: none"> ❖ Consider two entities A and B. ❖ one-to-many (1:N) relationship is said to exist in a relational database design, for 1 instance of entity A there exists 0 or 1 or many instances of entity B, but for 1 instance of entity B there exists 0 or 1 instance of entity A. <p>Many-to-Many relationship:</p> <ul style="list-style-type: none"> ❖ Consider two entities A and B. ❖ many-to-many (M:N) relationship is said to exist in a relational database design, for 1 instance of entity A there exists 0 or 1 or many instances of entity B, and for 1 instance of entity B there exists 0 or 1 or many instance of entity A.
2.	<p>Discuss on Cardinality in DBMS. (J-2023)</p> <ul style="list-style-type: none"> ❖ It is defined as the number of items that must be included in a relationship. ❖ It is defined as the number of different values in any given table column. <p>Example :</p> <ul style="list-style-type: none"> ❖ Number of entities in one set mapped with the number of entities of another set via the relationship. ❖ Three classifications in Cardinality are <u>one-to-one</u>, <u>one-to-many</u> and <u>Many-to-Many</u>  <p style="text-align: center;">Figure 3.9 Cardinality</p>
3.	<p>What are the Types of SQL Commands? (S-2020)</p> <p>(i) Data Definition Language (DDL) (ii) Data Manipulation Language (DML) (iii) Data Query Language (DQL) (iv) Transaction Control Language (TCL) (v) Data Control Language (DCL)</p>
4.	<p>Explain different types of attributes in PHP (J-2022)</p> <p>1. Key Attribute: Generally a key attribute describes a unique characteristic of an entity.</p> <p>2. Simple Attribute:</p> <ul style="list-style-type: none"> ❖ The simple attributes cannot be separated it will be having a single value for their entity. <p>3. Composite Attributes:</p> <ul style="list-style-type: none"> ❖ The composite attributes can be subdivided into simple attributes without change in the meaning of that attribute. <p>4. Single Valued Attributes:</p> <ul style="list-style-type: none"> ❖ A single valued attribute contains only one value for the attribute and they don't have multiple numbers of values. <p>5. Multi Valued Attributes:</p> <p>A multi valued attribute has more than one value for that particular attribute.</p>
CHAPTER – 4 (PHP : HYPERTEXT PRE-PROCESSOR)	
1.	<p>Write about the rules for naming a variable in PHP. (J-2023)</p> <ol style="list-style-type: none"> 1. A Variable's name must start with a dollar sign (\$), for example: \$name. 2. The Variable's name can contain a combination of strings, numbers, and the underscore, for example: \$my_report1. 3. The first character after the dollar sign must be either a letter or an underscore. 4. Variable names in PHP are case-sensitive. <ul style="list-style-type: none"> ❖ This is a very important rule. It means that \$name and \$Name are entirely different variables.
2.	<p>Write the output of the following PHP script. (J-2023)</p> <pre><?php function welcome () echo "Welcome to PHP programming!". "
"; echo " Dear". "Student". "
"; echo "Give your best in your exams"."
"; }Welcome (); ?></pre> <p style="text-align: right;">Output</p> <p>Welcome to PHP programming Dear student Give your best in your exams</p>
3.	<p>Write the output of the following program (M-2023)</p> <pre><?php \$a = 5; \$b = 10; \$c = (\$a+\$b)* \$a; echo \$c; ?></pre> <p style="text-align: right;">Output:</p> <p>75</p>
4.	<p>Write short notes on PHP operator. (M-2022)</p> <ul style="list-style-type: none"> ❖ Operator is a symbol which is used to perform mathematical and logical operations in the programming languages. ❖ Different types of operator in PHP are: <p>(i) Arithmetic operators, (ii) Assignment operators, (iii) Comparison operators, (iv) Increment/Decrement operators, (v) Logical operators, and (vi) String operators.</p>
5.	<p>What is the purpose of webserver and web browser? (M-2020)</p> <p>Web server :</p> <ul style="list-style-type: none"> ❖ A web server's main purpose is to store web files and broadcast them over the internet for you site visitor's to see. ❖ In-essence, a web server is simply a powerful computer that stores and transmits data via the internet <p>Web browser :</p> <ul style="list-style-type: none"> ❖ A Web browser (commonly referred to as a browser) is a software application for accessing information on the World Wide Web.

	❖ Each individual Web page, image, and video is identified by a distinct URL, enabling browsers to retrieve and display them on the user's device.				
6.	Write short notes on comparison operator in PHP (J-2022) Comparison Operators: ❖ Comparison operators are used to compare two values and determine whether a certain condition is true or false.				
	Operator	Operator Name	Meaning	Example	Output
	>	Greater than	It return True if left is greater than right	5>2	True
	<	Less than	It return True if left is less than right	5<2	False
	>=	Greater than or equal to	It return True if left is greater than or equal to right	5>=2	True
	<=	less than or equal to	It return True if left is less than or equal to right	5<=2	False
	= =	Equal to	It return True if left is equivalent to right	5= 5	True
	!=	Not equal to	It return True if left is not equivalent to right	5!=5 5!=6	True False
CHAPTER – 5 (FUNCTIONS AND ARRAYS IN PHP)					
1.	What are the advantages of using functions in PHP? (J-2024) 1.Code reuse: ❖ Functions allow us to reuse code, which can save us time and effort when writing and maintaining our code. 2.Testing and debugging: ❖ Functions allow us to test and debug our code more easily, as we can test individual functions separately from the rest of the code. 3. Modularity: ❖ Functions allow us to break down our code into smaller, modular pieces, which can make it easier to maintain and modify.				
2.	What is user defined function? Write its syntax. (M-2020) ❖ We can define a user defined function by using the ‘function’ keyword, followed by the name of the function and a set of parentheses. ❖ Here is the general syntax for creating a function in PHP: ❖ Function definition (or declaration) Syntax: function functionName([parameter list]) { // code to be executed }				
3.	Write the output of the following PHP code. (M-2022) <?php> \$S=array(11, 333, 7777); foreach(\$S as \$V) print \$V " "; <?> Output Syntax error				
4.	Write the output of the following PHP script (J-2022) <?php \$x = array (10, 20, 30); \$y = array (50, 60, 80); \$z = \$y [1] + \$x[2]; Print ("Sum = ". \$z."Rupees") Output: Sum = 90 Rupees. [or] Syntax error				
5.	How many types of Functions are there in PHP? Mention its types. (S-2020) ❖ In PHP, there are several types of functions that we can use. 1. User defined function, 2. Built-in functions				
CHAPTER – 6 (CONDITIONAL STATEMENTS IN PHP)					
1.	Differentiate if statement and if elseif else statement. (M-2022)				
	If statement		If else statement		
	If-elseif-else statement is a combination of if else statement		If statement executes a single statement		
	More than one statement can execute the condition based on user needs		Only one statement can execute		
	If the condition if false more alternatives are there.		If the condition is false, there is no alternative		
CHAPTER – 7 (LOOPS IN PHP)					
1.	Write a PHP code to print 1 to 10 numbers ascending order using for loop. ❖ To print the numbers from 1 to 10 in ascending order. for (\$i = 1; \$i<= 10; \$i++) { echo \$i. " "; }			Output 1 to 10	(J-2024)

2.	<p>Write the features of Looping structure (M-2020)</p> <ul style="list-style-type: none"> ❖ Looping structures are useful for writing iteration logics. ❖ It is the most important feature of many programming languages, including PHP.
3.	<p>Write the output of the following PHP code. (M-2024)</p> <pre><?php> \$a=array("a"=>10,"b"=>20,"c"=>30);, foreach(\$array as \$key=> \$value) { echo \$key."=>".\$value. "
"; } <?></pre> <p>Output</p> <pre>a=>10 b=>20 c=>30</pre>
CHAPTER - 8 (FORMS AND FILES)	
1.	<p>Explain the difference between checkbox and radio button in HTML forms. (J-2024)</p> <ul style="list-style-type: none"> ❖ Checkbox is a 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.
2.	<p>Explain the difference between the POST method and GET method of sending data to the server in PHP. (J-2023)</p> <p>GET Method:</p> <ul style="list-style-type: none"> ❖ All the input values are synchronized and sent to the server via POST method or 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. <p>POST Method:</p> <ul style="list-style-type: none"> ❖ The input data sent to the server with POST method is stored in the request body of the client's HTTP request.
3.	<p>Write the Basic HTML Form Controls (S-2020)</p> <p>1. Text inputs 2. Buttons 3. Checkbox 4. Radio box 5. File Select 6. Form Tag</p>
CHAPTER - 9 (CONNECTING PHP AND MYSQL)	
1.	<p>Write MySQL Connection Syntax with example. (M-2020, S-2020, J-2022, M-2024)</p> <p>Syntax: mysqli_connect("Server Name ","User Name","Password","DB Name");</p> <p>Example: \$conn = mysqli_connect(\$servername, \$username, \$password,\$DB_name);</p>
CHAPTER - 10 (INTRODUCTION TO COMPUTER NETWORKS)	
1.	<p>List out some benefits of social networks. (J-2024)</p> <p>1.Group information sharing over long distances:</p> <ul style="list-style-type: none"> ❖ Although friends and family members can keep in contact via mobile phone calls or by text messages, social nets provide a much richer environment for staying connected. <p>2.Broadcast announcements:</p> <ul style="list-style-type: none"> ❖ Quick, easy way to spread information's of emergencies and natural calamities. Venues and local shops can advertise upcoming events on social networks. <p>3.Fostering diversity of thought:</p> <ul style="list-style-type: none"> ❖ Some critics of social networks point out that online communities attract people by similar interests and backgrounds.
2.	<p>What do you mean by artificial intelligence? (J-2023)</p> <ul style="list-style-type: none"> ❖ Artificial intelligence will help to maintain, manage, and protect the network problems. ❖ Now the networks are monitored by algorithm that enables for anomalous build-ups of traffic and activity which may be the result of nasty activities such as (D Dos) Distributed Denial of- Service attacks and attempted hacks. ❖ Artificial intelligence will be able to predict traffic as it collects and analyses data in real time.
CHAPTER - 11 (NETWORK EXAMPLES AND PROTOCOLS)	
1.	<p>Compare Internet, Intranet and Extranet. (M-2022)</p> <p>1.Internet:</p> <ul style="list-style-type: none"> ❖ The Internet is a network of global connections – comprising private, public, business, academic and government networks – linked by guided, wireless and fiber-optic technologies. <p>Ex: Sending email to a friend.</p> <p>2.Intranet:</p> <ul style="list-style-type: none"> ❖ 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. <p>Ex: Accessing your record in the employee personnel file.</p> <p>3.Extranet:</p> <ul style="list-style-type: none"> ❖ 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. <p>Ex: Checking availability of inventory from an outside supplier.</p>
2.	<p>Write short notes on HTTP, HTTPS, FTP (M-2023)</p> <p>HTTP :</p> <ul style="list-style-type: none"> ❖ It is used between a web client and a web server and it guarantees non secure data transmissions.

	<p>HTTPS:</p> <ul style="list-style-type: none"> ❖ It is used between a web client and a web server ensures secure data transmissions. <p>FTP :</p> <ul style="list-style-type: none"> ❖ It is used between computers for sending and receiving file. 								
3.	<p>What are the layers available in TCP/IP Reference Model? (J-2023)</p> <ul style="list-style-type: none"> ❖ Network Access Layer - Concerned with building packets. ❖ Internet Layer - Describes how packets are to be delivered. ❖ Transport Layer - Ensure the proper transmission of data. ❖ Application Layer - Application network processes. 								
4.	<p>What is Intranet (M-2020)</p> <ul style="list-style-type: none"> ❖ It is a website used by organizations to provide a place where employees can access company related information. ❖ It is a private network within an enterprise to share company data and computing resources between the employees. 								
5.	<p>Differentiate HTTP and HTTPS (S-2020)</p> <p>HTTP: A protocol used between a web client and a web server protects non-secure data transmissions. The core protocol of the World Wide Web.</p> <p>HTTPS: A protocol used between a web client and a web server permits secure data transmissions.</p>								
CHAPTER – 12 (DNS – DOMAIN NAME SYSTEM)									
1.	<p>What are the differences between Absolute URL and Relative URL? (M-2023, J-2024)</p> <table border="1"> <thead> <tr> <th>Absolute URL</th><th>Relative URL</th></tr> </thead> <tbody> <tr> <td>❖ Absolute URL is the complete address of a document on the Internet.</td><td>❖ Relative URL is the partial address of a document on the Internet.</td></tr> <tr> <td>❖ Absolute URL contains all the information that are required to find the files on the Internet.</td><td>❖ Relative URL contains only file name or file name with folder name.</td></tr> <tr> <td>❖ All the four parts is very important in absolute URL.</td><td>❖ Relative URL is used when the file is on the same server related to original document.</td></tr> </tbody> </table>	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.
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❖ 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.								
2.	<p>Expand ARPANET, STP and USB. (M-2022)</p> <ul style="list-style-type: none"> ❖ ARPANET - Advanced Research Projects Agency Network ❖ STP - Shielded Twisted Pair USB - Universal Serial Bus 								
3.	<p>What is URL? Write its types. (S-2020)</p> <ul style="list-style-type: none"> ❖ URL means Uniform Resource Locator. It is the address of a resource on the internet. ❖ A URL indicates the location of a resource as well as the protocol used to access it. <p>Eg. : http://www.google.com The URL is divided into 2 types : (i) Absolute URL (ii) Relative URL</p>								
CHAPTER – 13 (NETWORK CABLING)									
1.	<p>What is meant by null modem cable? (M-2024)</p> <ul style="list-style-type: none"> ❖ A cable interconnecting two devices directly (or without modem) is known as a null modem cable. <p>Example: Crossover cable, RS-232, Rollover cable.</p>								
2.	<p>What are the components involved in Ethernet cabling?</p> <ul style="list-style-type: none"> ❖ 1) Patch Cable (Twisted pair) 2) RJ45 Connector 3) Ethernet Ports 4) Crimping Tool 								
3.	<p>What are the types of Fibre optic cables? (J-2023, J-2024)</p> <ul style="list-style-type: none"> ❖ There are two types of fibre optic cables are available are, ❖ Single-mode (100BaseBx) 2) Multimode (100BaseSX). <p>Single-mode cables: Used for long distance transmission and at a high cost.</p> <p>Multimode cables: Used for short distance transmission at a very low cost.</p>								
CHAPTER – 14 (OPEN SOURCE CONCEPTS)									
1.	<p>What are the uses of Open source Network Software? (M-2022)</p> <ul style="list-style-type: none"> ❖ We can select and use any software that suits our needs. ❖ The complete option of the software can be used without any cost and restrictions. ❖ We can share our ideas with the team, write the required code share it with many. ❖ We can learn many ideas and make our program writing skills more efficient. ❖ We can add the most required features in the software by making changes. ❖ Many open source software are very user friendly. 								
2.	<p>List out the Popular open source software. (J-2022)</p> <ul style="list-style-type: none"> ❖ NS2, OPEN NMS, My SQL, PDF Creator, Open Office, 7zip, GNUCASH, GIMP, BLENDER, ❖ AUDACITY, VLC, MOZILA, FIREFOX, MAGENTO, ANDROID, PHP. 								
CHAPTER – 15 (E-COMMERCE)									
1.	<p>Write a short note on the third wave of E-Commerce. (J-2024)</p> <ul style="list-style-type: none"> ❖ The third wave is brought on by the mobile technologies. ❖ It connects users for real-time and on-demand transactions via mobile technologies. ❖ The term Web 3.0, summarizes the various characteristics which include Artificial Intelligence, Semantic Web, and Generic Database etc. 								

2.	<p>Explain B2B module in E-Commerce. (J-2023, M-2024)</p> <ul style="list-style-type: none"> ❖ In B2B E-Commerce, commercial transactions take place between different business organizations, through the Internet. <p>Example:</p> <ul style="list-style-type: none"> ❖ A cycle company may buy tyres from another company for their cycles. ❖ When compared to other models, the value per transaction in B2B transaction is high, because of bulk purchases. ❖ The company also might get the advantage of discounts on bulk purchases. <p>Out-sourcing and Off-shoring are generally associated with B2B E-Commerce.</p> <ul style="list-style-type: none"> ❖ If a company's work is hired to another company, it would be termed as out-sourcing. ❖ If the work is outsourced to a company, which is outside its own country, it is called as off-shoring.
3.	<p>Explain B2C module in E-Commerce. (M-2023)</p> <ul style="list-style-type: none"> ❖ In B2C E-Commerce, commercial transactions take place between business firms and their consumers. ❖ It is the direct trade between companies and end-consumers via the Internet. ❖ B2C companies sell goods, information or services to customers through online in a more personalized dynamic environment and is considered as real competitor for a traditional storekeeper. <p>Example: A book company selling books to customers.</p>
4.	<p>Classify the E-Commerce Business Models (S-2020)</p> <p>(i) Business to Business (B2B) (ii) Business to Consumer (B2C) (iii) Business to Government (B2G) (iv) Consumer to Business (C2B) (v) Consumer to Consumer (C2C)(vi) Consumer to Government (C2G) (vii) Government to Business (G2B)(viii) Government to Consumer (G2C)(ix) Government to Government (G2G)</p>
CHAPTER – 16 (ELECTRONIC PAYMENT SYSTEMS)	
1.	<p>Define micro electronic payment and its role in E-Commerce. (J-2022)</p> <ul style="list-style-type: none"> ❖ Micro Electronic Payment is an on-line payment system designed to allow efficient and frequent payments of small amounts. <p>Role in E-Commerce:</p> <ul style="list-style-type: none"> ❖ 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.	<p>Briefly explain the stored value card and its types. (M-2024)</p> <ul style="list-style-type: none"> ❖ Stored value card is a type of debit card that is pre-loaded with certain amount (value), with which a payment is made. ❖ It is a card that has default monetary value onto it. ❖ The card may be disposed when the value is used, or recharged to use it again. <p>TYPES OF STORED VALUE CARD:</p> <p>1.Closed loop (single purpose):</p> <ul style="list-style-type: none"> ❖ Money is metaphorically stored on the card in the form of binary-coded data. <p>2.Open loop (multipurpose):</p> <ul style="list-style-type: none"> ❖ Open loop cards can be used to make debit transaction at variety of retailers.
3.	<p>What is electronic fund transfer? (M-2022)</p> <ul style="list-style-type: none"> ❖ 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. ❖ Unlike traditional processes, EFT saves the effort of sending a demand draft through post and the inherent delay in reaching the money to the receiver. ❖ Banks may charge commission for using this service. ❖ EFT is a widely used method for moving funds from one account to another in B2B business models.
CHAPTER – 17 (E-COMMERCE SECURITY SYSTEMS)	
1.	<p>What is E-Commerce Security system? (J-2024)</p> <ul style="list-style-type: none"> ❖ E-commerce security is a set of protocols that safety guide E-commerce transactions through the internet. ❖ Security has become a critical factor and core issue in the emerging E-business. Solving the security problems in transactions is the basis for ensuring the smooth development of E-business.
2.	<p>List any two E-Commerce Security Threats? (M-2024)</p> <p>1. Information leakage 2.Tampering 3.Payment frauds 4. Malicious code threats 5. Distributed Denial of Service (DDOS) Attacks 6. Cyber Squatting 7.Typo piracy 8.Phishing</p> <p>1. Information Leakage : (Two aspects)</p> <p>a) The content of the transaction between the vendor and customer is stolen by the third party. b) The documents provided by the merchant to the customer or vice versa are illegally used by the other.</p> <ul style="list-style-type: none"> ❖ This intercepting and stealing of online documents is called information leakage. <p>2.Tampering :</p> <ul style="list-style-type: none"> ❖ E-commerce has the problem of the authenticity and integrity of business information. ❖ When hackers grasp the data transmitted on the network, it can be falsified in the middle through various technical means, and then sent to the destination, thereby destroying the authenticity and integrity of the data.
3.	<p>Write a note on asymmetric key encryption. (M-2023)</p> <ul style="list-style-type: none"> ❖ Asymmetric key encryption is also known as public key encryption. ❖ It uses public key authentication and digital signatures. Different keys are used for encryption and decryption. ❖ Speed of encryption or decryption is comparatively slow. The size of cipher text is always greater than plain text.

4.	<p>Write short note on mining in crypto currency? (M-2020)</p> <ul style="list-style-type: none"> ❖ The crypto currency units are created by the solution of cryptographic tasks called mining. ❖ The miners not only generate new monetary units, but also initiate new transactions to the block chain. ❖ As a reward, they will receive new Bit coins.
	CHAPTER – 18 (ELECTRONIC DATA INTERCHANGE- EDI)
1.	<p>List the various layers of EDI. (J-2023, M-2024)</p> <p>1. Semantic layer 2. Standards translation layer 3. Transport layer 4. Physical layer</p>
2.	<p>What are the four major components of EDI? (M-2020)</p> <p>(i) Standard document format (ii) Translator and Mapper (iii) Communication software (iv) Communication network</p>
3.	<p>What is EDI? Write its types. (S-2020)</p> <ul style="list-style-type: none"> ❖ EDI is “Paperless Trade” and EFT (Electronic Transfer) is “Paperless Payment”. ❖ EDI types: 1. Direct EDI 2. EDI via VAN 3. EDI via FTP/VPN, SFTP, FTPS 4. Web EDI 5. Mobile EDI
4.	<p>Explain 3D secure payment protocol (J-2022)</p> <ul style="list-style-type: none"> ❖ 3-D Secure is a secure payment protocol on the Internet. ❖ It was developed by Visa to increase the level of transaction security, and it has been adapted by MasterCard. ❖ It gives a better authentication of the holder of the payment card, during purchases made on websites. <p><u>This authentication model comprise 3 domains (hence the name 3D) which are:</u></p> <p>1. The Acquirer Domain 2. The Issuer Domain 3. The interoperability Domain</p>
5.	<p>List few types of business documents that are transmitted through EDI (M-2024)</p> <p>1. Delivery notes 2. Invoices 3. Purchase orders 4. Advance ship notice 5. Functional acknowledgements.</p>

Padasalai

CHAPTER 1 TO 18 FIVE MARK PUBLIC QUESTION WITH ANSWERS [MARCH-2020 TO JUNE-2024]

	<p>CHAPTER – 1 (MULTIMEDIA)</p> <p>1. Explain in detail about production team Roles and Responsibilities. (J-2022, M-2023, M-2024)</p> <p>1. Production Manager:</p> <ul style="list-style-type: none"> ❖ In a multimedia production, the role of production manager is to define, and coordinate, the production of the multimedia project in time and with full quality. ❖ The production manager should be an expertise in the technology expert, good at proposal writing, good communication skills and budget management skills. <p>2. Content Specialist:</p> <ul style="list-style-type: none"> ❖ Content specialist is responsible for performing all research activities concerned with the proposed application's content. ❖ Program content refers to projects information, graphics, data or facts presented through the multimedia production. <p>3. Script Writer:</p> <ul style="list-style-type: none"> ❖ The script writer visualizes the concepts in three dimensional environments and if needed uses the virtual reality integration into the program. <p>4. Text Editor:</p> <ul style="list-style-type: none"> ❖ The content of a multimedia production always must flow logically and the text should always be structured and correct grammatically. <p>5. Multimedia Architect:</p> <ul style="list-style-type: none"> ❖ The multimedia architect integrates all the multimedia building blocks like graphics, text, audio, music, video, photos and animation by using an authoring software. <p>6. Computer Graphic Artist:</p> <ul style="list-style-type: none"> ❖ The role of Computer Graphic Artist is to deal with the graphic elements of the programs like backgrounds, bullets, buttons, pictures editing, 3-D objects, animation, and logos etc. <p>7. Audio and Video Specialist:</p> <ul style="list-style-type: none"> ❖ The roles of these specialists are needed for dealing with narration and digitized videos to be added in a multimedia presentation ❖ They are responsible for recording, editing sound effects and digitizing. <p>8. Computer Programmer:</p> <ul style="list-style-type: none"> ❖ The computer programmer writes the lines of code or scripts in the appropriate language. ❖ These scripts usually develop special functions like developing the software to give the size and shape of video windows, controlling peripherals and so on. <p>9. Web Master:</p> <ul style="list-style-type: none"> ❖ The responsibility of the web master is to create and maintain an Internet web page. ❖ They convert a multimedia presentation into a web page. ❖ Final multimedia product is a joint effort of the entire team. <p>2. Explain about different file formats in multimedia files. (M-2020, J-2024)</p> <p>I. Text Formats:</p> <p>1. RTF</p> <ul style="list-style-type: none"> ❖ Rich Text Format is the primary file format introduced in 1987 by Microsoft with the specification of their published products and for cross-platform documents interchange. <p>2. Plain text</p> <ul style="list-style-type: none"> ❖ Plain text files can be opened, read, and edited with most text editors. <p>II. Image Formats:</p> <p>1. TIFF (Tagged Image File Format)</p> <ul style="list-style-type: none"> ❖ This format is common in desktop publishing world (high quality output), and is supported by almost all software packages. ❖ Recent versions of TIFF allow image compression, and the format is comfortable for moving large files between computers. <p>2. DIB (Device Independent Bitmap)</p> <ul style="list-style-type: none"> ❖ This format which is similar to BMP, allows the files to be displayed on a variety of devices. <p>3. GIF (Graphics Interchange Format)</p> <ul style="list-style-type: none"> ❖ GIF is a compressed image format. ❖ Most of the computer colour images and backgrounds are GIF files. <p>4. JPEG (Joint Photographic Experts Group)</p> <ul style="list-style-type: none"> ❖ JPEG was designed to attain maximum image compression. ❖ It uses compression technique, where a compression method is referred that loses some of the data required for the image reconstruction. <p>5. PNG (Portable Network Graphics)</p> <ul style="list-style-type: none"> ❖ An extensible file format for the less loss, portable and well compressed storage of raster images. ❖ PNG acts as replacement for GIF and also replaces multiple common uses of TIFF. <p>III. Digital Audio File Formats:</p> <p>1. WAV (Waveform Audio File Format)</p> <ul style="list-style-type: none"> ❖ It is the most popular audio file format in windows for storing uncompressed sound files. ❖ In order to attain the reduced file size, it can also be converted to other file formats like MP3.
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2.MP3 (MPEG Layer-3 Format)

- ❖ MPEG Layer-3 format is the most popular format for storing and downloading music.

3.AIFF (Audio Interchange File Format)

- ❖ A standard audio file format used by Apple which is like a WAV file for the Mac.

4.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.

IV. Digital Video File Formats:**1.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.

2.MPEG (Moving Picture Experts Group)

- ❖ MPEG is a standard for generating digital video and audio compression under the International Standards Organization (ISO) by the group of people.
- ❖ Simply MPEG is the standards for digital video and audio compression.

3. Explain in detail Process of Multimedia [OR] Explain Multimedia production (S-2020)(J-2023)**1. Conceptual Analysis and Planning:**

- ❖ Conceptual analysis identifies an appropriate theme, budget and content availability on that selected theme.
- ❖ Copy right issues also are considered in this phase.

2. Project design:

- ❖ Once the theme is finalized objectives, goals, and activities are drawn for the multimedia project.
- ❖ General statements are termed as goals.
- ❖ The specific statements in the project is known as the objectives.
- ❖ Activities are series of actions performed to implement an objective.
- ❖ These activities contribute to the Project design phase.

3. Pre-production:

- ❖ Based on the planning and design, it is necessary to develop the project.

STEPS IN PRE-PRODUCTION**4. Budgeting:**

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

5. Multimedia Production Team:

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

6. Hardware/Software Selection:

- ❖ All multimedia Application requires appropriate tools to develop and playback the application.
- ❖ Hardware includes the selection of fastest CPU, RAM and huge monitors, sufficient disc for storing the records.

7. Defining the Content:

- ❖ Content is the "stuff" provided by content specialist to the multimedia architect with which the application is developed, who prepares the narration, bullets, charts and tables etc.

8. Preparing the structure:

- ❖ A detailed structure must have information about all the steps along with the timeline of the future action.










9. Production:












- ❖ In the multimedia application, after the pre-production activities, the production phase starts.
- ❖ This phase includes the activities like background music selection, sound recording and so on.

10. Testing:

- ❖ If it's a web based product, its functioning is tested with different browsers like Internet Explorer, Chrome, Mozilla and Netscape Navigator.

11. Documentation & 12. Delivering the Multimedia Production**CHAPTER – 2 (AN INTRODUCTION TO ADOBE PAGE MAKER)****1. Explain the tools in PageMaker toolbox. (M-2020, M-2023)**

Tool	Toolbox	Cursor	Use
Pointer tool			Used to select, move, and resize text objects and graphics.
Text tool			Used to type, select, and edit text.
Rotating tool			Used to select and rotate objects.
Cropping tool			Used to trim imported graphics.
Line tool		+	Used to draw straight lines in any direction.

	Constrained Line tool		+	Used to draw vertical or horizontal lines.
	Rectangle tool		+	Used to draw squares and rectangles.
	Rectangle Frame tool		+	Used to create rectangular placeholders for text and graphics.
	Ellipse tool		+	Used to draw circles and ellipses.
	Ellipse Frame tool		+	Used to create elliptical placeholders for text and graphics.
	Polygon tool		+	Used to draw polygons.
	Polygon Frame tool		+	Used to create polygonal placeholders for text and graphics.
	Hand			Used to scroll the page (an alternative to the scroll bar)
	Zoom			Used to magnify or reduce an area of the page.
2.	Write the steps to draw a star using polygon tool? (S-2020, J-2023, M-2024) <u>To draw a Star:</u> 1. Click on the Polygon tool from the toolbox. The cursor changes to a crosshair . 2. Click and drag anywhere on the screen. As you drag, a Polygon appears. 3. Release the mouse button when the Polygon is of the desired size. 4. Choose Element > Polygon Settings in the menu bar. Now Polygon Settings dialogue box appears. 5. Type 5 in the Number of sides text box. 6. Type 50% in Star inset textbox. 7. Click OK . Now the required star appears on the screen.			
3.	Define a text block. How will you create and move a text block? (M-2022) Text block: ❖ A text block contains the text you type, paste, or import. ❖ All text in page maker resides inside containers called text blocks. <u>To create a text block with the text tool:</u> 1. Select the text tool (T) from the toolbox. The pointer turns into an I-beam. 2. On an empty area of the page or pasteboard, do one of the following Click the I-beam where you want to insert text. This creates a text block to the width of the column or page. By default, the insertion point jumps to the left side of the text block. 3. Type the text you want. Unlike with a text frame, you do not see the borders of a text block until you click the text with the pointer tool. <u>Moving a text Block:</u> ❖ To move a block without changing its shape, place the cursor anywhere inside the block, and click and drag it to the required position.			
4.	How can you convert text in a text block to a frame? (M-2023) ❖ Draw the frame of your choice using the Page Maker's Frame Tools. ❖ Select the text block you want to insert in the frame. ❖ Click the frame while pressing the shift key. Now both elements will be selected. ❖ Choose Element --> Frame --> Attach Content on the menu bar. Now the text appears in the frame.			
	CHAPTER - 3 (INTRODUCTION TO DATABASE MANAGEMENT SYSTEM)			
1.	List the basic concepts of ER Model with suitable example. (J-2023, M-2024) <u>ER Model basic concepts:</u> ❖ The basic concepts of ER model consist of..., ❖ Entity or Entity type 2. Attributes 3. Relationship ❖ These are the general concepts which help to create an ER diagram and produce an ER model. ❖ With the help of these any database design can be created and viewed to know the concept in that database design. <u>1.Entity or Entity type:</u> ❖ An Entity can be anything a real-world object or animation which is easily identifiable by anyone even by a common man.			

Example:

- ❖ In a company's database Employee, HR, Manager are considered as entities, where each of these entity will be having their own attributes.
- ❖ An entity is represented by a rectangular box.

Types of Entity: 1. Strong Entity 2. Weak Entity 3. Entity Instance

2.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 2. Simple 3. Composite 4. Single Valued 5. Multi Valued Attribute

3.Relationship Type:

- ❖ In ER Model, relationship exists between two entities.
- ❖ Three types of relationships are available and the Entity- Relationship(ER) diagram is based on the **three types** listed below.
- ❖ 1. One-to-One relationship 2. One-to-Many relationship 3. Many-to-Many relationship.

One-to-One relationship:

- ❖ Consider two entities A and B. one-to-one (1:1) relationship is said to exist in a relational database design, if 0 or 1 instance of entity A is associated with 0 or 1 instance of entity B, and 0 or 1 instance of entity B is associated with 0 or 1 instance of entity A.

One-to-Many relationship:

- ❖ Consider two entities A and B. one-to-many (1: N) relationship is said to exist in a relational database design, for 1 instance of entity A there exists 0 or 1 or many instances of entity B, but for 1 instance of entity B there exists 0 or 1 instance of entity A.

Many-to-Many relationship:

- ❖ Consider two entities A and B. many-to-many (M:N) relationship is said to exist in a relational database design, for 1 instance of entity A there exists 0 or 1 or many instances of entity B, and for 1 instance of entity B there exists 0 or 1 or many instance of entity A.

2. Discuss in detail on various types of attributes in DBMS. (J-2024)**Types of attributes:**

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

1.Key Attribute:

- ❖ Generally, a key attribute describes a unique characteristic of an entity.

2.Simple Attribute:

- ❖ The simple attributes cannot be separated it will be having a single value for their entity.

Example:

- ❖ The name as the attribute for the entity employee and here the value for that attribute is a single value.

3.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**.

4.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.

- ❖ It is a single value for a person as we cannot give n number of ages for a single person, therefore it is a single valued attribute.

Single Valued Attributes	
Attribute	Values
Age	3
Roll no	85

5.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
Bank Account	SBI, HDFC

3. Define a key and primary key. Explain the types of key. (M-2022)**Key:**

- ❖ The candidate key that is chosen to perform the identification task is called the primary key and any others are Alternate keys.

- ❖ Every tuple must have, by definition, a unique value for its **primary key**.
- ❖ A **primary key** which is a combination of more than one attribute is called a composite primary key.
- 1.Foreign Key**
- ❖ A foreign key is a “copy” of a primary key that has been exported from one relation into another to represent the existence of a relationship between them.
- ❖ A foreign key is a copy of the whole of its parent primary key i.e if the primary key is composite, then so is the foreign key.
- ❖ Foreign key values do not have some attribute(s) null and others non-null.
- 2.Super Key:**
- ❖ An attribute or group of attributes, which is sufficient to distinguish every tuple in the relation from every other one is known as Super Key. Each super key is called a candidate key.
- ❖ A candidate key is selected from the usually have to be unique.
- ❖ Foreign keys can also be null.
- ❖ A composite foreign key cannot set of Super Key.
- ❖ While selecting candidate key, redundant attributes should not be taken.
- ❖ The candidate key is also known as minimal super keys.
- 3.Composite Key**
- ❖ A key with more than one attribute to identify rows uniquely in a table is called Composite key.
- ❖ This is also known as Compound Key.

CHAPTER – 4 (PHP : HYPERTEXT PRE-PROCESSOR)

1. **What are the data types in PHP? Explain (J-2022, M-2022, J-2024)**
Data type:
 ❖ Value assigned to variables in PHP will be of a set data type.
Types: 1. Integer 2. Float 3.String 4.Boolean 5.Array 6.Object 7.Resource 8.NULL
1.Intger:
 ❖ Integer is a data type which contains whole numbers. It can be Positive, Negative or zero.
Ex: \$age = 30; \$count = -10;
2.Float:
 ❖ Float is a data type which contains decimal numbers.
Ex: \$price = 19.99; \$weight = 65.5;
3.String:
 ❖ String is a data type which contains a sequence of characters enclosed in single (‘’) or double quotes (“ ”)
Ex: \$name = “Bharath”; \$message = ‘Hello, World!’;
4.Boolean:
 ❖ Boolean is a data type which contains the value True or False.
Ex: \$is_admin = true; \$is_logged_in = false;
5.Array:
 ❖ An array is a data type which has multiple values in a single variable.
Ex: \$prices = array(10, 20, 30); \$items = array(“item1”, “item2”, “item3”); \$prices = array(19.99, 24.99, 29.99)
6.Object:
 ❖ An object is a data type that represents an instance of a class.**Ex:** \$user = new User(); \$product = new Product();
7.Resource:
 ❖ A resource is a special data type of data that represents a connection to an external resource, such as a file or a data base.
Ex: \$fp = fopen(“file.txt”, “r”); // \$fp is a resource.
 \$conn = mysqli_connect(“localhost”, “username”, “Password”, “database”); // \$conn is a resource
8. NULL:
 ❖ NULL is a special data type which contains NULL value.
 ❖ A null value simply means no value. The keyword NULL is not case sensitive
Ex: \$x = null; \$y = “ “;
2. **Explain operators in PHP with example. (J-2023)**
 ❖ An operator is a symbol that performs a given action on a value or group of values.
 ❖ The values the operations are performed upon are known as operands.
 ❖ The types of operators in PHP are:
 1. Arithmetic operators, 2. Assignment operators, 3. Comparison operators,
 4. Logical operators, 5. Increment/Decrement operators, 6.String operators.
1. Arithmetic operators:
 ❖ Arithmetic operators are used to perform math operations for example, addition, subtraction, multiplication and division.

Operator	Operator Name	Example	Output
+	Addition	5+2	7
-	Subtraction	5-2	3
*	Multiplication	5*2	10
/	Division	5/2	2.5

%	Modulus	5%2	1
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2. Assignment Operators:

- ❖ Assignment operator = is used to assign value to a variable.
- ❖ The assignment operator takes the value of its right-hand operand and assigns it to its left hand operand.

Operator	Operator Name	Example	Output
=	Assignment	\$a = 5;	5

Combined Assignment Operators:

Operator	Operator Name	Example	Equivalent to	Output
+=	Addition assignment	\$a = 5; \$b = 2; \$a+= \$b;	\$a = \$a + \$b;	7
-=	Subtraction assignment	\$a = 5; \$b = 2; \$a-= \$b;	\$a = \$a - \$b;	3
=	Multiplication assignment	\$a = 5; \$b = 2; \$a= \$b;	\$a = \$a * \$b;	10
/=	Division assignment	\$a = 5; \$b = 2; \$a/= \$b;	\$a = \$a / \$b;	2.5
%=	Modulo assignment	\$a = 5; \$b = 2; \$a%= \$b;	\$a = \$a % \$b;	1

3. Comparison Operators:

- ❖ Comparison operators are used to compare two values and determine whether a certain condition is true or false.

Operator	Operator Name	Meaning	Example	Output
>	Greater than	It return True if left is greater than right	5>2	True
<	Less than	It return True if left is less than right	5<2	False
>=	Greater than or equal to	It return True if left is greater than or equal to right	5>=2	True
<=	less than or equal to	It return True if left is less than or equal to right	5<=2	False
==	Equal to	It return True if left is equivalent to right	5== 5	True
!=	Not equal to	It return True if left is not equivalent to right	5!=5 5!=6	True False

4. Logical Operators:

- ❖ Logical Operators are used to perform logical operations on variables and values.

Operator	Operator Name	Meaning	Example	Output
&&	Logical AND	It returns true if both operands are true, and false other wise	(5>3)&&(5>7)	False
	Logical OR	It returns true if at least one of the operands is true, and false other wise	(5>3) (5>7)	True
!	Logical NOT	It returns the opposite of the operand	!(5>3)	False
xor	XOR	It returns true if exactly one of the operands is true, and false other wise	(5>3)xor(5>7)	True

5. Increment and Decrement Operators:

- ❖ In PHP, the increment operator ++ is used to increase the value of a variable by 1, and the decrement operator -- is used to decrease the value of variable by 1.

Operator	Operator Name	Example	Meaning
++ (increment Operator)	++\$a (Pre-Incre)	\$x=++\$a	First, \$a is incremented by 1 and then the value is returned.
	\$a++ (Post-Incre)	\$x=\$a++	First, the value of \$a is returned and then it is incremented by 1
-- (decrement Operator)	--\$a (Pre-decre)	\$x=--\$a	First, \$a is decremented by 1 and then the value is returned
	\$a-- (Post-Incre)	\$x=\$a--	First, the value of \$a is returned and then it is decremented by 1

6. String Operators:

- ❖ String operators have concatenation operator (.) and concatenation assignment operator (.=).
- ❖ Concatenation means adding one or more variables to an existing variable.

Operator	Operator Name	Meaning	Example	Output
.(Dot)	Concatenation	It concatenates (joins) two strings together	\$a='Hello'; \$b='World'; \$c=\$a.\$b;	HelloWorld

	. (Dot Equal to)	Concatenation assignment	It appends one string to another and assigns the result to a variable in a single statement.	\$a='Hello'; \$b='World'; \$a.=\$b;	HelloWorld
3.	<p>Write a PHP code to do the following: (M-2022)</p> <p>(i) If the given number 'n' is divisible by 3, then print "DIVISIBLE BY 3".</p> <pre><?php \$n = readline ("Enter the number"); if (\$n% 3 == 0) { echo "Divisible by 3"; } ?></pre> <p>(ii) Otherwise, check whether the number 'n' is odd or even. - if even print "EVEN NUMBER" - if odd print "ODD NUMBER"</p> <pre><?php \$n = readline ("Enter the number"); if (\$n% 2 == 0) { echo "EVEN NUMBER"; } else { echo "ODD NUMBER"; } ?></pre>				
CHAPTER – 5 (FUNCTIONS AND ARRAYS IN PHP)					
1.	<p>Explain the user-defined function with suitable example (M-2024)</p> <p><u>User defined Function:</u></p> <p>❖ We can define a user defined function by using the 'function' keyword, followed by the name of the function and a set of parentheses.</p> <p><u>General syntax for creating function:</u></p> <p>Function definition (or declaration)</p> <p><u>Syntax:</u></p> <pre>function functionName([parameter list]) { //code to be executed; }</pre> <p><u>Let's break this down:</u></p> <ol style="list-style-type: none">1. The 'function' keyword is used to define a function.2. <u>FunctionName</u> is the name of the function. It can be any valid PHP identifier, as long as it is not a reserved word.3. <u>Parameter</u> list is a comma-separated list of variables. These parameters are optional and we can have as many or as few as we like.4. <u>Inside the curly braces</u>, we can put any code we want the function to execute. This can include PHP statements, loops, conditions, and so on. <p><u>Function Calling:</u></p> <p>❖ Calling a function is another name for executing the function.</p> <p>❖ A function is called simply by using the function name, along with an argument list, as a statement.</p> <p><u>Syntax:</u></p> <pre>functionName(); [or] functionName(argument list);</pre> <p>❖ We can also pass argument to a function by including them within the parentheses, separated by commas.</p> <p>❖ functionName(\$arg1, \$arg2,\$arg3);</p> <p><u>Example 1: Function with no parameters</u></p> <pre><?php function printGreeting () { echo "Hello, world!"; } printGreeting (); ?></pre> <p style="text-align: right;"><u>Output</u> "Hello, world!"</p>				
2.	<p>Explain indexed array and associative array. (S-2020, J-2024)</p> <p>1 Indexed array:</p>				

- ❖ An indexed array is an array that uses a numeric index to access its elements.
- ❖ The index is a number that starts at 0 for the first element and increases by 1 for each subsequent element.

We can create an indexed array in PHP:

1. by enclosing a comma-separated list of values in **square brackets** (or)
2. by using the **array ()** function.

Syntax:

```
$arrayVariable = [element1, element2, element3,...elementN];           (or)
$arrayVariable = array(element1, element2, element3,...elementN);
```

Example:

- a) \$fruits = ['apple', 'banana', 'orange'];
- b) \$fruits = array ('apple', 'banana', 'orange');
- c) \$numbers = array (1,2,3,4,5);
- d) \$colours = array('red', 'green', 'blue');
- e) \$num = array(10, 10.5, 20,20.5);

2.Associative Array:

- ❖ An associative array is a data structure that stores a collection of key-value pairs.
- ❖ The keys are used to identify the values, and the values can be of any data type.
- ❖ The keys in an associative array are often called “labels” because they label or identify the corresponding values.

We can create an associative array in PHP:

3. by enclosing a comma-separated list of key-value pairs in **square brackets** (or)
4. by using the **array ()** function.

Syntax

```
$arrayVariable = ["key1" => "value1", "key2" => "value2", "key3" => "value3", ..."keyN" => "valueN"];
$arrayVariable = array ("key1" => "value1", "key2" => "value2", "key3" => "value3", ..."keyN" => "valueN");
```

Example:

```
$student = ["Name" => "Ram", "Age" => "25", "Place" => "Trichy"];
$student = array ("Name" => "Ram", "Age" => "25", "Place" => "Trichy");
```

3. What is array? Explain the Multidimensional Array. (M-2020)(M-2022)(J-2023)

Array :

- ❖ Array is a concept that stores more than one value of same data type in single array variable.

Multidimensional array:

- ❖ In PHP, a multidimensional array is an array that contains one or more arrays as its elements.
- ❖ The elements of a multidimensional array can themselves be arrays, creating an array of arrays, also known as a nested array.

Example 1 : A multidimensional array that contains one array as its element.:

```
$arr = array( array(1, 2, 3), );
echo $arr[0][1]; // Output will be 2.
```

- ❖ This array contains one element, which is an array containing three integers.
- ❖ You can access the elements of this array using two sets of square brackets, with the first set specifying the row and the second set specifying the column.

Example 2 : A multidimensional array that contains three arrays as its elements:

```
$arr = array( array(1, 2, 3), array(4, 5, 6), array(7, 8, 9) );
echo $arr[1][2]; // Output will be 6.
```

- ❖ We can access the elements of the array using two sets of square brackets, with the first set specifying the row and the second set specifying the column.

CHAPTER – 6 (CONDITIONAL STATEMENTS IN PHP)

1. Explain if..elseif..else statement with an example. (J-2024)

- ❖ The if..elseif ..else statement is a conditional statement in PHP.
- ❖ This statement allows you to check multiple conditions and run different code based on which condition is true.
- ❖ This type of statement begins with the keyword “if”.
- ❖ It can be followed by one or more “elseif”.
- ❖ Finally ends with an “else” part.

Syntax:

```
if (condition 1)
{
    // code to be executed if condition 1 is true;
}
elseif (condition 2)
{
    // code to be executed if condition1 is false and condition 2 is true;
}
```

```
elseif (condition 3)
{
    // code to be executed if condition1 and condition 2 is false and condition 3 is true;
}
else
{
    // code to be executed if all conditions are false;
}
```

Example:**Output**

```
<?php
$x=12;
if ($x>20)
{
    echo "x is greater than 20";
}
elseif ($x>15)
{
    echo "x is greater than 15 but not greater than 20";
}
elseif ($x>10)
{
    echo "x is greater than 10 but not greater than 15";
}
else
{
    echo "x is not greater than 10"
}
?>
```

2. Discuss in detail about Switch statement with an example. (M-2020, S-2020, J-2022, M-2023, J-2023)**Switch statement:**

- ❖ This is a multiple branching statement where, based on a condition, the control is transferred to one of the many possible points.
- ❖ The switch statement is used to specify multiple conditions.
- ❖ It runs a different code block for different conditions.

Syntax:

```
switch (expression)
{
    case value1:
        //code to be executed if expression = value1;
        break;
    case value2:
        //code to be executed if expression = value2;
        break;
    default:
        //code to be executed if expression is not equal to any of the values;
}
```

Example:**Output**

```
<?php
    $x= 10;
    switch ($x)
    {
        case 5:
            echo "x is equal to 5";
            break;
        case 10:
            echo "x is equal to 10";
            break;
        case 15:
            echo "x is equal to 15";
            break;
        default:
            echo "x is not equal to 5,10, or 15";
    }
```

	<pre> } ?> </pre>
3.	<p>Explain the functions of conditional statement in PHP (M-2022)</p> <p><u>'if' statement:</u></p> <ul style="list-style-type: none"> ❖ The if statement is the simplest of all the conditional statements. A block of code is executed if a certain condition is true. <p><u>Syntax:</u></p> <pre> if (condition) { // code to be executed if condition is true; } </pre> <p><u>Example :</u></p> <pre> <?php \$x = 10; if (\$x > 5) { echo "x is greater than 5"; } ?> </pre> <p><u>if ... else statement:</u></p> <ul style="list-style-type: none"> ❖ The if ... else statement is a conditional statement in PHP. It executes one block of code if a condition is true and another block of code if the condition is false. <p><u>Syntax</u></p> <pre> if (condition) { // True-block; } else { // False-block; } </pre> <p><u>'if... elseif ...else' Statement:</u></p> <ul style="list-style-type: none"> • The if ... elseif ... else statement is a conditional statement in PHP. • This statement allows you to check multiple conditions and run different code based on which condition is true. • This type of statement begins with the keyword 'if'. It can be followed by one or more 'elseif'. • Finally ends with an 'else' part. <p><u>Syntax</u></p> <pre> if (condition1) { // code to be executed if condition1 is true; } elseif (condition2) { // code to be executed if condition1 is false and condition2 is true; } elseif (condition3) { // code to be executed if condition1 and condition2 are false and condition3 is true; } else { // code to be executed if all conditions are false; } </pre>
CHAPTER – 7 (LOOPS IN PHP)	
1.	<p>Explain "for" loop with example. (S-2020, M-2024)</p> <ul style="list-style-type: none"> ❖ 'for loop' is called as the entry-check loop. ❖ The for loop is used to execute a block of code a specific number of times. <p><u>Syntax:</u></p> <pre> for (initialization: condition; increment /decrement) { //code to be executed; } </pre> <ul style="list-style-type: none"> ❖ The initialization part is executed only once at the beginning of the loop. ❖ It is used to initialize variables. ❖ The condition is evaluated before each iteration of the loop. ❖ If it is true, the code block is executed. ❖ If it is false, the loop is terminated.

- ❖ The increment/decrement part is executed after each iteration for the loop.
- ❖ It is used to update variables.

Example 1:

❖ To print the numbers from 1 to 5 in ascending order.
 for (\$i = 1; \$i <= 5; \$i++)
 {
 echo \$i. "
";
 }

Output

1 to 5

Example 2:

❖ To print the numbers from 5 to 1 in descending order.
 for (\$i = 5; \$i >= 1; \$i--)
 {
 echo \$i. "
";
 }

Output

5 to 1

2. Explain 'foreach' loop with examples. [or] Explain working of loops in array (J-2022, M-2023)

- ❖ The foreach loop is used to iterate over elements of an array.

Syntax:

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

Example:

❖ To print the elements of an array
 \$array = array(1,2,3,4,5);
 foreach (\$array as \$value)
 {
 echo \$value."
";
 }

- ❖ You can also use the foreach to iterate over the **keys and values** of an associative array by using the following syntax:
 foreach (\$array as \$key => \$value)

```
{
    // code to be executed;
}
```

- ❖ The foreach loop will iterate over each element of the array and assign the key of the element to the \$key variable and the value of the element to the \$value variable.

Example:

\$array = ("a" => 1, "b" => 2, "c" => 3);
 foreach (\$array as \$key => \$value)
 {
 echo \$key."
".\$value."
";
 }

Output

a=>1 b=>2 c=>3

- ❖ The foreach loop is particularly useful when you want to perform a set of actions on each element of an array, such as printing the elements, summing them up, or modifying them in some way.

- ❖ It is a simple and efficient way to iterate over arrays in PHP.

3. Write a PHP code to print all the odd numbers from 3 to 15 using foreach loop. (M-2022)

```
<?php
$a = range(3, 15);
foreach ($a as $v)
{
    if (($v%2) != 0)
    {
        echo "$v";
    }
}
?>
```

4. Write the output of the following program (M-2023)

```
<?php
$pass_mark = 35;
$student_mark = 70;
if($student_mark >= $passmark)
{
    echo "The student is eligible for promotion";
}
```

Output

The student is eligible for promotion

```

}
else
{
echo "The student is not eligible for promotion";
}

```

CHAPTER - 8 (FORMS AND FILES)

- 1. Explain in detail of File handling functions in PHP. (M-2020, S-2020)**

1.PHP Open a File:

 - ❖ fopen() is a system function available in PHP.
 - ❖ fopen () function helps to open a file in the server.
 - ❖ It contains two parameters one for the file and the other one specifies in which mode the file should be opened (Read/Write)

Syntax: \$file_Object=fopen("FileName","Read/WriteMode") or die("Error Message!");

Example:

```

<?php
    $myfile = fopen("Student.txt", "r") or die("Unable to open file!");
?>

```

2.PHP Read a File:

 - ❖ The fread() function reads from an open file.
 - ❖ The file object comes from fopen function.

Syntax: fread(\$file_Object,filesize("FileName"));

Example:

```

<?php
    fread($myfile,filesize("Student.txt"));
?>

```

3.PHP Close a File:

 - ❖ The fclose() function is used to close an opened file.
 - ❖ The file object comes from fopen function.

Syntax: fclose(\$file_Object);

Example:

```

<?php
    $myfile = fopen("student.txt", "r");
    fclose($myfile);
?>

```

4.PHP write a File:

 - ❖ The fwrite() function is used to write to a file.

Syntax:

```

    fwrite($myfile, $txt);
?>

```
- 2. Explain Form handling method in PHP (M-2022)**

PHP Basic Form Handling:

 - ❖ When the user keys in 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 the input values are synchronized and sent to the server via POST method or GET method.
 - ❖ Method is an attribute of form tag in HTML.
 - ❖ Once the data reaches the server, two PHP variables such as \$_POST and \$_GET collects the data and prepares the response accordingly.

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 click the submit button.

Example:

Test.html:

```

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

```

Welcome.php:

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

CHAPTER – 9 (CONNECTING PHP AND MYSQL)

1. **Discuss in detail about My SQL functions with example. (S-2020, J-2024)**
 - ❖ In PHP Scripting language many functions are available for MYSQL Database connectivity and executing SQL queries.
 - ❖ 1.Mysqli_connect() 2.Mysqli_close() 3.mysqli_query()

1.Mysqli_connect()

 - ❖ 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.
 - ❖ Opens a connection to MYSQL server and returns an object represents the connection to the server.

2.Mysqli_close()

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

Syntax: mysqli_close("Connection Object");

Example:

```
<?php
$con=mysqli_connect("localhost","$user","$password","SCHOOL_DB");
mysqli_close($con);
?>
```

3.mysqli_query()

 - ❖ The main goal of MySQL and PHP connectivity is to retrieve and manipulate the data from MySQL database server.
 - ❖ The SQL query statements help in PHP MySQL extension to achieve the objective of MySQL and PHP connection.
 - ❖ "mysqli_query" is a function that helps to execute the SQL query statements in PHP scripting language.

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

Example:

```
$con=mysqli_connect("localhost","my_user","my_password","Student_DB ");
$sql="SELECT student_name,student_age FROM student";
mysqli_query($con,$sql);
```
2. **Explain MySQLi Queries with examples. (M-2020)**
 - ❖ The main goal of MySQL and PHP connectivity is to retrieve and manipulate the data from MySQL database server.
 - ❖ The SQL query statements help in PHP MySQL extension to achieve the objective of MySQL and PHP connection.
 - ❖ "mysqli_query" is a function that helps to execute the SQL query statements in PHP scripting language.

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

Example 1:

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

Example 2 :

```
<?php
$conn=mysqli_connect("localhost","username","password","mydb");
$sql_stmt="select*from Students";
$result=mysqli_query($conn,$sql_stmt);
$rows=mysqli_fetch_array($result);
foreach($rows as $t)
{
echo $t."<br>";
}
Mysqli_conn($conn);
?>
```

CHAPTER – 10 (INTRODUCTION TO COMPUTER NETWORKS)**1. Mention some uses of network at business, home and mobile. (J-2022)****Networks in Business:**

- ❖ In twenty first century, communication is very important factor for successful business operations.
- ❖ There by with the growth of computer network and speedy Internet services, business also developed drastically.
- ❖ With the development of cloud computing, global access and security issues were restricted.
- ❖ Internet conversation made conversation faster, quick decision making and money saving e-banking paying methods for easy transactions.
- ❖ Business large or small scale B2C, B2B, B2G,C2B, C2C, C2G, G2B,G2C, G2G or commercial that transfer information across the Internet can be done.
- ❖ Cheap marketing price and easy selection of products through Internet with customers satisfaction can also be done. Company license, renewals, other certificates, bill payments, receipts, invoice, stock maintenance, can be done without any geographical boundaries via Internet and computer networks.
- ❖ Government subsidies are available for their business to promote their business by digitization.

Networks at Homes:

- ❖ Now a day, network has become common as it facilitates communication among devices with in the close vicinity of a home.
- ❖ Devices in this network can be smart devices, mobile computers, network printers which are capable of interacting and thereby increase the quality of life inside home in a variety of ways like automation of repetitive tasks, increased personal productivity, enhanced home security and easier access to entertainment.
- ❖ Network at home helps us to perform e-banking, e-learning, e-governance, e-health, telemedicine, call centers, video conferencing, digitalization of memories, etc.

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.
- ❖ At land areas network was distributed as cells, each will be served by single – location transceiver, but generally three cell sites or a base transceiver station.
- ❖ This base station provides the cell with network coverage and other features that can be utilized for transmission of voice, data and other content as well.
- ❖ Joining together all radio coverage is called as wide geographical area.
- ❖ This portable transceivers used to communicate with one another with fixed transceivers and moving via more than one cell during transmission.
- ❖ For example mobiles, tablets, pagers, laptops, engaged with mobile broadband just like modems etc.

CHAPTER – 11 (NETWORK EXAMPLES AND PROTOCOLS)**1. Explain about Internet, Intranet and Extranet. (J-2022, M-2023)****1.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.
- ❖ The Internet is a network of global connections – comprising private, public, business, academic and government networks – linked by guided, wireless and fiber-optic technologies.
- ❖ It was perceived by the Advanced Research Projects Agency (ARPA) of the U.S. government in 1969 and was first recognized as the ARPANet.

Example:

- ❖ Sending email to a friend ,Download programs and files, Social media, E-Mail

2.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.
- ❖ It includes connections through one or more gateway (connects two networks using different protocols together known as protocol convertor) computers to outside Internet.

Example:

- ❖ Sharing of company policies/rules and regulations, Access employee database, Distribution of circulars/Office Orders

3.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 business.

Example:

- ❖ Customer communications, online education/ training, Account status enquiry.

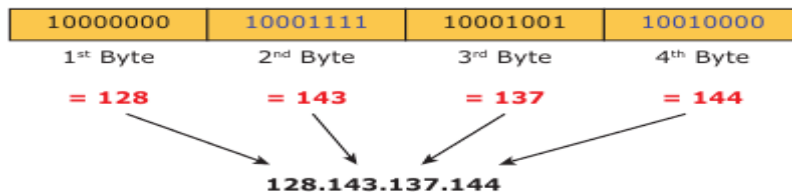
2.	<p>Discuss about OSI model with its layers. (M-2020)</p> <p><u>OSI Model :</u></p> <ul style="list-style-type: none"> ❖ Open System Interconnection (OSI) model was found in the year 1934, general framework that enables network protocols along with software and systems to be developed based on general set of guidelines. ❖ It describes the standards for the inter-computer communication <p><u>OSI Layers:</u></p> <ol style="list-style-type: none"> 1. <u>Physical Layer:</u> <ul style="list-style-type: none"> ❖ This is the 1st layer, it defines the electrical and physical specifications for devices. 2. <u>Data Link Layer:</u> <ul style="list-style-type: none"> ❖ It is the 2nd layer and it guarantees that the data transmitted are free of errors. ❖ This layer has simple protocols like “802.3 for Ethernet” and “802.11 for Wi-Fi”. 3. <u>Network Layer:</u> <ul style="list-style-type: none"> ❖ It is the 3rd layer determining the path of the data packets. ❖ This layer is responsible for routing of data packets using IP Addressing. 4. <u>Transport Layer:</u> <ul style="list-style-type: none"> ❖ It is the 4th layer that guarantees the transportation/sending of data successfully. ❖ It includes the error checking operation. 5. <u>Session Layer:</u> <ul style="list-style-type: none"> ❖ It is the 5th layer, identifies the established system session between different network entities. ❖ It controls dialogues between computers 6. <u>Presentation Layer:</u> <ul style="list-style-type: none"> ❖ It is the 6th layer that does the translation of data to the next layer (Prepare the data to the Application Layer). ❖ Encryption and decryption protocols occur in this layer such as, Secure Socket Layer (SSL). 7. <u>Application Layer:</u> <ul style="list-style-type: none"> ❖ It is the 7th layer, which acts as the user interface platform comprising of software within the system. 						
3.	<p>Explain about the development, merits and demerits in Mobile networks. (J-2023)</p> <p><u>Development of Mobile Networks:</u></p> <table border="0"> <tr> <td>1.First Generation(1G) 1981- NMT launch</td> <td>2.Second Generation(2G) 1991-GSM Launch</td> </tr> <tr> <td>3.Second to Third Generation Bridge (2.5)2000 – GPRS launch</td> <td>4.Third Generation(3G) 2003- UK 3G launch</td> </tr> <tr> <td>5.Fourth Generation (4 G) 2007</td> <td>6.Fifth Generation (5G) 2019+</td> </tr> </table> <p><u>Merits of Mobile Networks:</u></p> <ul style="list-style-type: none"> ❖ 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 equipment's. ❖ The mobile and fixed subscribers are connected immediately with cellular network as soon as mobile phones are switched on. ❖ All the handshake signals between mobile and base station are automatically exchanged. <p><u>Demerits of Mobile Networks:</u></p> <ol style="list-style-type: none"> 1. Cost 2. Vulnerable to Security risks 3. Additional training is needed to use new technology. 4. Cyber Crime. 	1.First Generation(1G) 1981- NMT launch	2.Second Generation(2G) 1991-GSM Launch	3.Second to Third Generation Bridge (2.5)2000 – GPRS launch	4.Third Generation(3G) 2003- UK 3G launch	5.Fourth Generation (4 G) 2007	6.Fifth Generation (5G) 2019+
1.First Generation(1G) 1981- NMT launch	2.Second Generation(2G) 1991-GSM Launch						
3.Second to Third Generation Bridge (2.5)2000 – GPRS launch	4.Third Generation(3G) 2003- UK 3G launch						
5.Fourth Generation (4 G) 2007	6.Fifth Generation (5G) 2019+						
4.	<p>Explain about TCP/IP layers (S-2020)</p> <ul style="list-style-type: none"> ❖ There are four total layers of TCP/IP protocol, each of which is listed below with a brief description. <ol style="list-style-type: none"> 1. Network Access Layer - concerned with building packets. 2. Internet Layer - describes how packets are to be delivered. 3. Transport Layer - ensure the proper transmission of data. 4. Application Layer - application network processes. <p>These processes include File Transfer Protocol (FTP), Hypertext Transfer Protocol (HTTP), and Simple Mail Transfer Protocol (SMTP).</p>						
<u>CHAPTER – 12 (DNS - DOMAIN NAME SYSTEM)</u>							
1.	<p>Classify and Explain the IP address and its types. (J-2024)</p> <ul style="list-style-type: none"> ❖ Internet Protocol (IP) address is simply the logical address in the network layer. ❖ IP address is also used to uniquely identify a computer over the network. ❖ Due to increase in the number of system in a network there is a need of more addresses which lead to two addressing methods i.e., IPv4 and IPv6. <p><u>1.IPv4 Address:</u></p> <ul style="list-style-type: none"> ❖ IPv4 address is a 32-bit unique address given to a computer system. ❖ No two systems can have same IP address. ❖ If the network has p connections then „ p” addresses should be there. ❖ An address space is the total number of addresses that can be made by that protocol. ❖ It is determined by the number of bits that the protocol use. <p><u>There are two ways to represent the IP address,</u></p> <p><u>Binary notation:</u></p> <ul style="list-style-type: none"> ❖ In binary notation the address is expressed as 32-bit binary values. 						

Dotted-decimal notation:

- ❖ In dotted-decimal notation the address is written in decimal format separated by dots(.).

2.IPv6 Address:

- ❖ IPv6 address is a 128-bit unique address given to a computer system.
- ❖ The number of addresses that can be formed in IPv6 is 2¹²⁸.



- ❖ In IPv6 address, the 128 bits are divided into eight 16-bits blocks.
- ❖ Each block is then changed into 4-digit Hexadecimal numbers separated by colon symbols.
- ❖ **E.g.** 2001:0000:32313:DFE1:0063:0000:0000: FEFB

2. Explain the name server and its types. (J-2022)

- ❖ Name Server is a main part in the Domain Name System (DNS).
- ❖ It is a software program that run on a physical system.
- ❖ It has the DNS database consisting of domain names and their corresponding IP addresses.
- ❖ Name Server translates the domain name to IP address.
- ❖ There is a need to store a large number of domain names for worldwide usage, so plenty of servers are used in the hierarchical manner.
- ❖ Name servers do the important task of searching the domain names.
- ❖ While you searching for a websites, local name server ask the different name servers until one of them finds out the answer.
- ❖ At least it returns IP address for that domain name.
- ❖ Your computer is now connected to the requested webpage.

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.
- ❖ These records are updatable by domain name holders such as organizations.

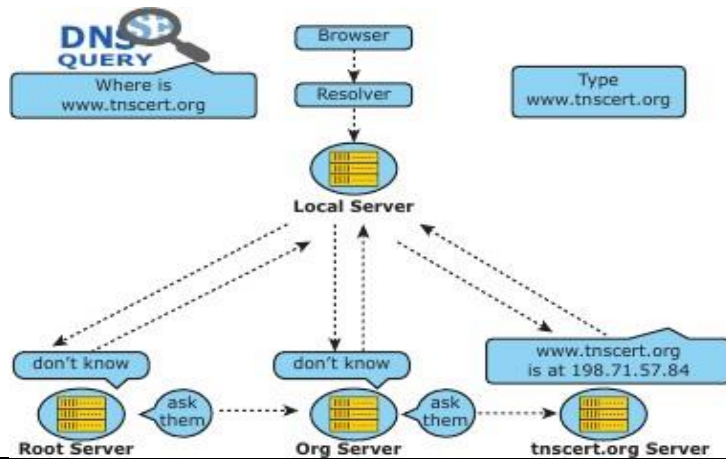
3.Secondary/Slave Name Server:

- ❖ Contains a copy of primary server files.
- ❖ This server has no authority to update, but reduce the workload of master server by sharing the queries.

3. Explain how the DNS is working. (M-2024)

- ❖ When the user enters the URL (consists of protocol, domain name, folder name, file name) in the browser, the system first checks its DNS cache for the corresponding IP address.
- ❖ If the IP address is found in the cache then the information is retrieved from cache.
- ❖ 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.
- ❖ Until the query is solved it is passed to next level domains.
- ❖ Finally, the IP address is detected and corresponding record is sent to the resolver.
- ❖ Then the resolver returns the record back to the computer browser.

- ❖ Now the user can view the webpages for the detected IP address



4. **What is domain name space? Explain. (M-2022)**

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 a root element on the top.
- ❖ This Tree can have a maximum of 128 levels starting from the root element, taking level 0 to level 127.
- ❖ The above figure represents the domain name space where the root element is present at the top most level i.e., level 0.
- ❖ 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:

1. It is a string which can have maximum of 63 characters.
Each node in that level should have different labels thereby assuring the individuality of the domain name.
2. In other words, Labels are the names given to domains.
Domain is a sub tree in domain name space tree structure.
The domain can be further divided into sub domains.
3. The domain name which is obtained by reading the labels from bottom to top, separating each label by dot (.).

Domain name:

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

CHAPTER – 13 (NETWORK CABLING)

1. **Explain the components used in Ethernet cabling. (M-2024)**

- ❖ Ethernet cabling is the process of connecting the computers with other devices using Ethernet cables.

The four main components used in the Ethernet cabling components are

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

1. Patch cable (Twisted pair):

- ❖ These Cables are generally made up of 8 wires in different colors.
- ❖ Four of them are solid colours, and the others are striped.
- ❖ Ethernet cables are normally manufactured in several industrial standards such as Cat 3, Cat 5, Cat 6, Cat 6e and cat 7.
- ❖ “Cat” simply stands for “Category,” and the following number indicates the version.
- ❖ Latest version denotes faster and higher frequencies, measured in Mhz.
- ❖ Increasing the size of the cable also lead to slower transmission speed.

2. RJ45 Connector:

- ❖ The RJ45 connector looks similar like a telephone jack but it looks a slightly wider.
- ❖ In RJ45 the “RJ” stands for registered jack and the “45” simply refers to the interface standard.
- ❖ The RJ45 connector is a small plastic cube.
- ❖ It has 8 pins.
- ❖ It is connected to each end of the Ethernet cable.
- ❖ It is also known as 8P8C connector.
- ❖ These plugs are inserted into Ethernet port of the network card.

3. Ethernet port:

- ❖ **Ethernet port** is an opening which is a part of an Ethernet card.
- ❖ It accepts RJ45 connector with Ethernet cable.
- ❖ It is found on personal computers, laptops, routers, switches, hubs and modems.
- ❖ Once you inject the plug into the port the two led lights will glow in the computer, one is green and another one is orange.
- ❖ The orange light will start blinking which indicates that the Internet is connected.

4.Crimping tool:

- ❖ **Crimping** is the process of joining two or more pieces of metal or wire by deforming one or both of them to hold each other.
- ❖ Joining RJ45 connector together with twisted pair cable at each end is an essential process in Ethernet cabling which lead the cable to function properly.
- ❖ The crimping tool is a physical tool which is used to connect the patch wire and the Ethernet connector.
- ❖ The crimping tool looks like a small cutting handle with two mould of Ethernet port.

2. Explain the types of network cables. (M-2020, S-2020, J-2023)**1.Coaxial Cables :**

- ❖ This cable is used to connect the television sets to home antennas.
- ❖ It has a copper wire inside and insulation is covered on the top of the copper wire to provide protection to the cable.
- ❖ It is very difficult to install and maintain, because they are too big to carry and replace.
- ❖ This cable is used to transfer the information at 10mbps speed.
- ❖ The cable is classified into thin net and thick net cables.

2.Twisted Pair Cables:

- ❖ It is type of cable with two or more insulated wires twisted together.
- ❖ This twisted cable has 8 wires which are twisted to ignore electromagnetic interference.
- ❖ There are two types of twisted pair cables, Unshielded Twisted Pair (UTP) and Shielded Twisted pair (STP).
- ❖ The UTP is used nowadays as modern cables for Internet and they are lower in cost and installation and maintenance is easy compared to the coaxial cables.
- ❖ STP is similar to UTP, but it is covered by an additional jacket to protect the wires from External interference

3.Fiber Optics:

- ❖ This cable is made by using strands of glass.
- ❖ It uses pulses of light to send the information.
- ❖ They are mainly used in Wide Area Network (WAN).
- ❖ These cables are placed in deep underground to avoid any damage to the cables.
- ❖ There are two types of fiber-optic cables available, One is single-mode another one is multimode.
- ❖ Single-mode cables are used for long distance transmission and at a high cost whereas the multimode cables are used for short distance transmission at a very low cost.
- ❖ The optic cables are easy to maintain and install.

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 such as smart phones, GPS devices and digital cameras.
- ❖ The latest version of USB is USB 3.0 which has the data transfer rate 4.85 Gbps.

5.Serial and Parallel cables:

- ❖ Before Ethernet cable was invented, the serial and parallel interface cables were used to connect the system to the internet.
- ❖ They were sometime used for PC to PC networking.
- ❖ Ex: RS232 cable
- ❖ The serial cable send 1 bit at a time whereas the parallel port send 8 bit at a time.

6.Ethernet Cables:

- ❖ This is a type of twisted pair cable.
- ❖ It 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.

CHAPTER – 14 (OPEN SOURCE CONCEPTS)**1. Differentiate Proprietary and open source software. (M-2024)**

Proprietary software	Open Source Software
❖ It refers to the software that is solely owned by the individual or the organization that developed it.	❖ It refers to the software that is developed and tested through open collaboration.
❖ The project is managed by a closed group of individuals or team that developed it.	❖ The project is managed by an open source community of developers and programmers.
❖ It gives more control, support, training, security and stability for users.	❖ Difficult to work for beginners, exchange of files to other software.
❖ Reliable to the users.	❖ Lack of responsibility, service and problems with hardware compatible.
❖ Eg: Windows,Mac os, Adobe Flash Player.	❖ Eg: Android, fire fox, Libre office ,Ubuntu

CHAPTER – 15 (E-COMMERCE)**1. Explain any five E-Commerce revenue models. (J-2022, J-2024)****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:**

- ❖ In contrast, the buyer negotiates with the retailer for a particular product or service.
- ❖ **Example:** <https://in.hotels.com/>

2. What are the advantages and disadvantages of E-commerce to consumer? (M-2020)**Advantages :**

1. E-Commerce system is operated on all days and all the day.
It is able to conduct business 24 x 7.
Neither consumer nor suppliers need physical store to be opened to do business electronically.
People can interact with businesses at the time of their convenience.
2. Speed is a major advantage in E-Commerce.
Advanced Electronic communications systems allow messages to reach across the world instantaneously.
Communication delay is not a part of the Internet or E-Commerce world.
3. The Internet is too easy to 'shop around' for products and services that may be cheaper and effective than left to buy only in a Brick and Mortar shop.
It provides an opportunity to buy at reduced costs.
4. The whole world becomes a shop for today's customers.
They can have wide choice by comparing and evaluating the same product at different websites before making a purchase decision.
5. Customers can shop from home or anywhere at their convenience.
They don't need a long wait to talk to a salesman.
They can read the details regarding model numbers, prices, features etc. of the product from the website and buy at their own convenience. Payments can also be made through online.

Disadvantages:

1. E-Commerce is often used to buy goods that are not available locally but from businesses all over the world.
Physical goods need to be transported, which takes time and costs money.
2. Unlike returning goods to a traditional shop returning goods through online is believed to be an area of difficulty.
The doubts about the period of returning, will the returned goods reach source in time, refunds, exchange and postage make one tiresome.
3. Privacy issues are serious in E-Commerce.
In E-Commerce generating consumer information is inevitable.
Not all the companies use the personal information they obtained to improve services to consumers.
4. Physical product disputes are a major disadvantage in E-Commerce.
5. E-Commerce purchases are often made on trust.
This is because, we do not have physical access to the product.
Internet is an effective channel for visual and auditory information it does not allow full scope for our senses.
We can see pictures of the perfumes, but could not smell their fragrance; we can see pictures of a cloth, but not its quality.

3. Write about development and growth of E-Commerce (M-2023)**The First Wave of Electronic Commerce: 1995 -2003**

- ❖ The Dotcom companies of first wave are mostly American companies.
- ❖ Thereby their websites were only in English.
- ❖ 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.
- ❖ Only EDI and unstructured E-mail remained as a mode of information exchange between businesses.
- ❖ But the first wave companies enjoyed the first-move advantage and customers were left with no option.

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.
- ❖ Language translation and currency conversion were focused in the second wave websites.

- ❖ The second wave companies used their own internal funds and gradually expanded their E-Commerce opportunities.
- ❖ As a result E-Commerce growth was slow and steady.
- ❖ The rapid development of network technologies and interactive web (web 2.0, a period of social media) offered the consumers more choices of buying.
- ❖ The increased web users nourished E-Commerce companies (mostly B2C companies) during the second wave.

The Third Wave of Electronic Commerce: 2010 – Present

- ❖ The third wave is brought on by the mobile technologies.
- ❖ It connects users for real-time and on-demand transactions via mobile technologies.
- ❖ The term Web 3.0, summarize the various characteristics of the future Internet which include Artificial Intelligence, Semantic Web, Generic Database etc.

CHAPTER – 16 (ELECTRONIC PAYMENT SYSTEMS)

1. **Explain the key players of a credit card payment system. [OR] What is pay later method card? (M-2023)**
Explain the key players of Pay later method payment system and bring out its merits.
Credit card:
 - ❖ Credit Card Credit card is an electronic payment system normally used for retail transactions.**Key Players In Operations Of Credit Card**
 - 1.Bearer:**
 - ❖ The holder of the credit card account who is responsible for payment of invoices in full or a portion of the balance (revolver) the rest accrues interest and carried forward.
 - 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.
 - ❖ The Company responsible for communicating the transaction between the acquirer and the credit card issuer.
 - ❖ These entities operate the networks that process credit card payments worldwide and levy interchange fees.
 - ❖ **E.g.** Visa, MasterCard, Rupay
 - 5.Issuer:**
 - ❖ Bearer's bank, that issue the credit card, set limit of purchases, decides the approval of transactions, issue invoices for payment, charges the holders in case of default and offer card-linked products such as insurance, additional cards and rewards plan.**Merits:**
 - ❖ Most credit cards are accepted worldwide.
 - ❖ It is not necessary to pay physical money at the time of purchase.
 - ❖ The customer gets an extra period to pay the purchase.
 - ❖ Depending on the card, there is no need to pay annuity.
2. **Write a note on a. Internet banking b. Mobile banking. (J-2024)**
 - a) Internet banking:**
 - ❖ Internet banking is a collective term for E-banking, online banking, virtual banking, direct banks, web banking and remote banking.
 - ❖ Internet banking allows customers of a financial institution to conduct various financial transactions on a secure website operated by the banking institutions.
 - ❖ This is a very fast and convenient way of performing any banking transactions.
 - ❖ It enables customers of a bank to conduct a wide range of financial transactions through its website.
 - ❖ In fact, it is like a branch exclusively operating of an individual customer.
 - ❖ The online banking system will typically connect to the core banking system operated by customers themselves (Self-service banking).**Advantages:**
 - ❖ Account holder are secured by user name and password while doing payments.
 - ❖ Accounts can be accessed with Internet anywhere at any time.
 - ❖ Any standard browser (e.g. Google Chrome) is adequate.
 - ❖ Internet banking does not need installing any additional software.
 - b) Mobile banking :**
 - ❖ Mobile banking is another form of net banking.

	<ul style="list-style-type: none"> ❖ The term mobile banking (also called m-banking) refers to the services provided by the bank to the customer to conduct banking transactions with the aid of mobile phones. ❖ These transactions include balance checking, account transfers, payments, purchases, etc. ❖ Transactions can be done at anytime and anywhere. ❖ The WAP protocol installed on a mobile phone helps the user have a permanent control over the account and remote management of his own finances. <p><u>Mobile Banking operations can be implemented in the following ways:</u></p> <ul style="list-style-type: none"> ❖ Contacting the call centre. ❖ Automatic IVR telephone service. ❖ Using a mobile phone via SMS. ❖ WAP technology. ❖ Using smart phone applications.
3.	<p>Briefly explain Electronic Account transfer and its types. (S-2020)(J-2023)</p> <ul style="list-style-type: none"> ❖ With the advent of computers, network technologies and electronic communications a large number of alternative electronic payment systems have emerged. <p><u>Types:</u></p> <ol style="list-style-type: none"> 1.ECS (Electronic Clearing Services), 2.EFT (Electronic funds transfers), 3.Real Time Gross Settlement system (RTGS) etc. <p><u>1.ECS (Electronic Clearing Services)</u></p> <ul style="list-style-type: none"> ❖ 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. ❖ ECS credit is used for making bulk payment of amounts. ❖ ECS debit is used for bulk collection of amounts. <p><u>2.EFT (Electronic funds transfers)</u></p> <ul style="list-style-type: none"> ❖ 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. ❖ EFT is a widely used method for moving funds from one account to another in B2B business models. <p><u>3.Real Time Gross Settlement system (RTGS)</u></p> <ul style="list-style-type: none"> ❖ 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. ❖ RTGS payments are also called as push payments that are initiated (“triggered”) by the payer. ❖ RTGS payments are generally large-value payments, i.e. high-volume transactions. ❖ Real-time gross settlement transactions are Unconditional and Irrevocable.
4.	<p>Compare and contrast Credit Card, Debit Card and Stored Value Card. (M-2022)</p> <p><u>(i) Credit Card:</u></p> <ul style="list-style-type: none"> ❖ Credit card is an electronic payment system normally used for retail transactions. ❖ A credit card enables the bearer to buy goods or services from a vendor, based on the cardholder’s promise to the card issuer to payback the value later with an agreed interest. ❖ Every credit card account has a purchase limit set by the issuing bank or the firm. ❖ A credit card is different from a debit card where the credit card issuer lends money to customer instead of deducting it from customer’s bank account instantly. <p><u>(ii) Debit Card:</u></p> <ul style="list-style-type: none"> ❖ Debit Card is an electronic payment card where the transaction amount is deducted directly from the card holder’s bank account upon authorization. ❖ Generally, debit cards function as ATM cards and act as a substitute for cash ❖ The way of using debit cards and credit cards is generally the same but unlike credit cards, payments using a debit card are immediately transferred from the cardholder’s designated bank account, instead of them paying the money back at a later with added interest. ❖ In modern era the use of debit cards has become so widespread. <p><u>(iii) Stored Value Card:</u></p> <ul style="list-style-type: none"> ❖ Stored value card is a type of debit card that is pre-loaded with certain amount(value), with which a payment is made. It is a card that has default monetary value onto it. ❖ The card may be disposed when the value is used, or recharged to use it again. ❖ The major advantage of stored value card is that customers don’t need to have a bank account to get prepaid cards.
5.	<p>Explain Smart card and its types. (J-2022)</p> <ul style="list-style-type: none"> ❖ The modern version of card based payment is smart cards. ❖ Smart cards along with the regular features of any card based payment system holds a EMV chip. ❖ This chip is similar to well-known sim card in appearance but differ in its functionalities. ❖ The advantage of Smart cards is that it can provide identification, authentication, data storage and application processing.

Types: Contact smart cards and Contactless smart cards.

CHAPTER – 17 (E-COMMERCE SECURITY SYSTEMS)

1. Write about dimensions of E-Commerce Security. (J-2024)

- ❖ As the security issue is the most worrying issue for E-Business, ensuring the security of E-Commerce activities has become the core research field of E-Commerce.

The following are some of the security elements involved in E-Commerce:

Authenticity	Conforming genuineness of data shared
Availability	Prevention against data delay or removal
Completeness	Unification of all business information
Confidentiality	Protecting data against unauthorized disclosure
Effectiveness	Effective handling of hardware, software and data.
Integrity	Prevention of the data being unaltered or modified.
Non-repudiation	Prevention against violation agreement after the deal.
Privacy	Prevention of customers' personal data being used by others.
Reliability	Providing a reliable identification of the individuals or businesses.
Review Ability	Capability of monitoring activities to audit and track the operations.

2. Explain authentication protocols. (M-2024)

- ❖ At present, there are two kinds of security authentication protocols widely used in E-Commerce, namely Secure Electronic Transaction (SET) and Secure Sockets Layer (SSL).

1. Secure Electronic Transaction (SET):

- ❖ Secure Electronic Transaction (SET) is a security protocol for electronic payments with credit cards, in particular via the Internet.
- ❖ SET was developed in 1996 by VISA and MasterCard, with the participation of GTE, IBM, Microsoft and Netscape.
- ❖ The implementation of SET is based on the use of digital signatures and the encryption of transmitted data with asymmetric and symmetric encryption algorithms.
- ❖ SET also use dual signatures to ensure the privacy.

SET system incorporates the following 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.

2. Secure Sockets Layers (SSL):

- ❖ The most common Cryptographic protocol is Secure Sockets Layers (SSL).
- ❖ SSL is a hybrid encryption protocol for securing transactions over the Internet.
- ❖ The SSL standard was developed by Netscape in collaboration with MasterCard, Bank of America, MCI and Silicon Graphics.
- ❖ 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.

3. Differentiate digital signatures and digital certificates. (M-2020)(J-2023)

Digital Signature	Digital Certificate
<ul style="list-style-type: none"> • A digital signature is a mechanism that is used to verify that a particular digital document, message or transaction is authentic. 	<ul style="list-style-type: none"> • A digital certificate is a computer file which officially approves the relation between the holder of the certificate and a particular public key.
<ul style="list-style-type: none"> • Used to verify the trustworthiness of the data being sent. 	<ul style="list-style-type: none"> • Used to verify the trustworthiness of the sender.
<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • Digital certificate binds a digital signature to an entity
<ul style="list-style-type: none"> • It provides authentication, non-repudiation and integrity 	<ul style="list-style-type: none"> • It provides authentication and security.
<ul style="list-style-type: none"> • A digital signature is created using a DSS, SHA-1 or SHA-2 . 	<ul style="list-style-type: none"> • A digital certificate works on the principles of PKCS, X.509 , PGP formats
<ul style="list-style-type: none"> • The document is encrypted at the sending end and decrypted at the receiving end using asymmetric keys 	<ul style="list-style-type: none"> • A digital certificate consist of certificate's owner name and public key, expiration date, a Certificate Authority 's name , a Certificate Authority's digital signature

4.	<p>Explain SSL: (J-2022)</p> <p><u>Secure Sockets Layers:</u></p> <ul style="list-style-type: none"> ❖ The most common Cryptographic protocol is Secure Sockets Layers (SSL). ❖ SSL is a hybrid encryption protocol for securing transactions over the Internet. ❖ The SSL standard was developed by Netscape in collaboration with MasterCard, Bank of America, MCI and Silicon Graphics. ❖ 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. ❖ Today, all browsers in the market support SSL, and most of the secure communications are proceeded through this protocol. ❖ SSL works completely hidden for the user, who does not have to intervene in the protocol. ❖ The only thing the user has to do is make sure the URL starts with https:// instead of http:// where the “s” obviously means secured. ❖ It is also preceded by a green padlock. 
CHAPTER – 18 (ELECTRONIC DATA INTERCHANGE- EDI)	
1.	<p>Briefly explain various types of EDI. (M-2024)</p> <ul style="list-style-type: none"> ❖ The types of EDI were constructed based on how EDI communication connections and the conversion were organized. ❖ Thus based on the medium used for transmitting EDI documents the following are the major EDI types. <p><u>EDI Types:</u></p> <p>1.Direct EDI 2.EDI via VAN 3.EDI via FTP/VPN, SFTP, FTPS 4.Mobile EDI 5.Web EDI</p> <p><u>1.Direct EDI/Point-to-Point:</u></p> <ul style="list-style-type: none"> ❖ It is also called as Point-to-Point EDI. ❖ It establishes a direct connection between various business stakeholders and partners individually. ❖ This type of EDI suits to larger businesses with a lot of day to day business transactions. <p><u>2.EDI via VAN:</u></p> <ul style="list-style-type: none"> ❖ EDI via VAN (Value Added Network) is where EDI documents are transferred with the support of third party network service providers. ❖ Many businesses prefer this network model to protect them from the updating ongoing complexities of network technologies. <p><u>3.EDI via FTP/VPN, SFTP, FTPS:</u></p> <ul style="list-style-type: none"> ❖ When protocols like FTP/VPN, SFTP and FTPS are used for exchange of EDI based documents through the Internet or Intranet it is called as EDI via FTP/VPN, SFTP, FTPS. ❖ Web EDI Web based EDI conducts EDI using a web browser via the Internet. <p><u>4.Mobile EDI:</u></p> <ul style="list-style-type: none"> ❖ When smart phones or other such handheld devices are used to transfer EDI documents it is called as mobile EDI. ❖ Mobile EDI applications considerably increase the speed of EDI transactions. <p><u>5.Web EDI</u></p> <ul style="list-style-type: none"> ❖ Web based EDI conducts EDI using a web browser via the Internet. ❖ Here the businesses are allowed to use any browser to transfer data to their business partners. ❖ Web based EDI is easy and convenient for small and medium organizations.
2.	<p>What are the advantages of EDI? (M-2023)</p> <ul style="list-style-type: none"> ❖ 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. ❖ It also increases productivity and promotes operational efficiency. <p><u>The following are the other advantages of EDI:</u></p> <p>1.Improving service to end users 2.Increasing productivity 3.Minimizing errors 4.Slashing response times 5.Automation of operations 6.Cutting costs 7. Integrating all business and trading partners. 8. Optimizing financial ratios.</p>

Padasalai

PUBLIC EXAMINATION 2 & 3 MARK COMPULSORY QUESTIONS WITH ANSWERS	
TWO MARKS: (Q.NO 24)	
1.	Write the syntax to open file function in PHP with an example (M-2024) Syntax: \$file Object= fopen("FileName", "Read/WriteMode") or die("Error Message!");
2.	Explain BOSS OS. (J-2023) ❖ BOSS (Bharat Operating System Solutions) Operating System Developed in India by C-DAC (Centre for Development of Advanced Computing) helps to prompt the use of Open Source Software in India. ❖ It supports many Indian Languages
3.	What are the ways in which network are connected at home? (M-2023) ❖ Network at home were connected in two ways ❖ 1.Wired Network 2.Wireless Network
4.	Write the syntax for an if ... else statement in PHP. (J-2022)(J-2024) if (condition) { // True-block; } else { // False-block; }
5.	Write the command and shortcut key to cut and paste a block of a document in Abode PageMaker. (M-2022) ❖ The selected text can be easily cut and pasted in the required location. To cut and paste text: 1. Select the text to be moved. 2. Choose Edit > Cut in the menu bar. 3. Insertion point is moved to the place where the text is to be pasted. 4. Choose Edit > Paste in the menu bar. The following keyboard shortcuts can be used to move text: 1.Ctrl + X → to Cut 2. Ctrl + V → to Paste
6.	What is 3D secure electronic transaction? (S-2020) ❖ 3-D Secure is a secure payment protocol on the Internet. ❖ It was developed by Visa to increase the level of transaction security, and it has been adapted by MasterCard. ❖ It gives a better authentication of the holder of the payment card, during purchases made on websites. This authentication model comprise 3 domains (hence the name 3D) which are: 1. The Acquirer Domain 2. The Issuer Domain 3. The interoperability Domain
7.	Write the syntax for: For each loop in PHP. (MAR-2020) foreach (\$array as \$value) { //code to be executed; }
THREE MARKS: (Q.NO 33)	
1.	List out some benefits of social networks. (J-2024) 1.Group information sharing over long distances: ❖ Although friends and family members can keep in contact via mobile phone calls or by text messages, social nets provide a much richer environment for staying connected. 2.Broadcast announcements: ❖ Quick, easy way to spread information's of emergencies and natural calamities. ❖ Venues and local shops can advertise upcoming events on social networks. 3.Fostering diversity of thought: ❖ Some critics of social networks point out that online communities attract people by similar interests and backgrounds.
2.	Write the output of the following PHP code. (M-2024) <div style="display: flex; justify-content: space-between;"> <div> <pre><?php> \$S=array("a"=>10,"b"=>20,"c"=>30); foreach(\$Sarray as \$key=> \$value) { echo \$key."=>".\$value. "
"; } <?></pre> </div> <div> Output a=>10 b=>20 c=>30 </div> </div>

3.	<p>Write the output of the following PHP script. (J-2023)</p> <pre><?php function welcome () echo "Welcome to PHP programming!". "
"; echo " Dear". "Student". "
"; echo "Give your best in your exams"."
"; } Welcome (); ?></pre>	<p><u>Output</u></p> <p>Welcome to PHP programming Dear student Give your best in your exams</p>
4.	<p>Write the output of the following program (M-2023)</p> <pre><?php \$a = 5; \$b = 10; \$c = (\$a+\$b)* \$a; echo \$c; ?></pre>	<p><u>Output:</u></p> <p>75</p>
5.	<p>Write the output of the following PHP script (J-2022)</p> <pre><?php \$x = array (10, 20, 30); \$y = array (50, 60, 80); \$z = \$y [1] + \$x[2]; Print ("Sum = " . \$z. "Rupees") ?></pre>	<p><u>Output:</u></p> <p>Sum = 90 Rupees. [or] Syntax error</p>
6.	<p>Write the <u>output</u> of the following PHP code. (M-2022)</p> <pre><?php> \$S=array(11, 333, 7777); foreach(\$S as \$V) print \$V "
"; <?></pre>	<p><u>Output</u></p> <p>Syntax error</p>
7.	<p>What is EDI? Write its types. (S-2020)</p> <p>❖ EDI is "Paperless Trade" and EFT (Electronic Transfer) is "Paperless Payment".</p> <p><u>EDI types:</u> 1. Direct EDI 2.EDI via VAN 3.EDI via FTP/VPN, SFTP, FTPS 4.Web EDI 5.Mobile EDI</p>	
8.	<p>What is user defined function? Write its syntax. (M-2020)</p> <p>❖ We can define a user defined function by using the 'function' keyword, followed by the name of the function and a set of parentheses.</p> <p>❖ Here is the general syntax for creating a function in PHP:</p> <p>❖ Function definition (or declaration)</p> <p><u>Syntax:</u></p> <pre>function functionName([parameter list]) { // code to be executed }</pre>	