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COMPUTER FUNDAMENTALS AND MS – OFFICE
Paper I
(English Version)

Time: 3 Hours **Max. Marks : 50**

SECTION A **10 X 2 = 20**

Note: (i) Answer ALL questions.
(ii) Each question carries TWO marks.

1. **Convert $(43)_{10}$ into ( ) $_{16}$?**
2. **What is software and hardware?**
3. **What is an icon?**
4. **Expand GUI, CUI, BIOS AND MS – DOS.**
5. **What is office button?**
6. **What are the alignments in paragraph?**
7. **What is auto correct?**
8. **What is undo and redo?**
9. **What is a formula?**
10. **What is a template?**

SECTION – B **5 X 6 = 30**

Note: (i) Answer ANY FIVE questions.
(ii) Each question carries SIX marks.

11. **Write about generations of computer.**
12. **Write about six internal commands in DOS.**
13. **Write about move and copy.**
14. **Write about spell checker.**
15. **Write about mail merge.**
16. **Write about charts.**
17. **Write and explain any five statistical functions.**
18. **Write the groups in each tab of a ribbon in PowerPoint.**

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PROGRAMMING IN 'C'
Paper I
(English Version)

Time: 3 Hours **Max. Marks : 50**

SECTION A **10 X 2 = 20**

Note: (i) Answer ALL questions.
(ii) Each question carries TWO marks.

1. **What is Pseudo code?**
2. **What is Algorithm?**
3. **What are types of Constants?**
4. **What is a syntax of print f ( )?**
5. **What is use of Continue Statement?**
6. **What is an Array?**
7. **Write a syntax of two dimensional array.**
8. **What are the string handling functions?**
9. **What is recursion function?**
10. **What is union?**

SECTION – B **5 X 6 = 30**

Note: (i) Answer ANY FIVE questions.
(ii) Each question carries SIX marks.

11. **Draw a flow – chart find biggest / greatest of given three numbers.**
12. **What are the data types in 'C'? Explain them.**
13. **Explain and syntax of if .. else statements in 'C'.**
14. **What are the loops statements in 'C'? Explain.**
15. **Write a 'C' program to sum of n numbers with using Arrays.**
16. **Write a 'C' program to addition of two matrices.**
17. **Write a 'C' program to find factorial of a given number.**
18. **What is structure? Explain in Briefly.**

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ACCOUNTANCY AND TALLY
Paper I
(English Version)

Time: 3 Hours **Max. Marks : 50**

SECTION A **10 X 2 = 20**

Note: (i) Answer ALL questions.
(ii) Each question carries TWO marks.

1. **What is Accountancy?**
2. **What is Account?**
3. **Define Journal Entry.**
4. **What is Ledger?**
5. **What is Trade Discount?**
6. **Define Contra Entry.**
7. **Define Passbook.**
8. **Define Trial Balance.**
9. **Define Profit and Loss Account.**
10. **What are the functions keys used in Tally?**

SECTION – B **5 X 6 = 30**

Note: (i) Answer ANY FIVE questions.
(ii) Each question carries SIX marks.

11. **Explain different accounting concepts in detail.**
12. **What is an Account? Explain different types of accounts with their rules.**
13. **Explain different types of Subsidiary Books.**
14. **Explain different types of Cash Books in detail.**
15. **Explain importance of Bank Reconciliation Statements.**
16. **Prepare the Trial Balance from the following balances of different ledger accouns –**

Cash A/c	**53,500**
Capital A/c	**60,000**
Purchases A/c	**6,000**
Prasad A/c	**2,000**
Sales A/c	**2,000**
Salaries A/c	**1,000**
Commission A/c	**1,000**
Anupama A/c	**500**

17. **Write the procedure to prepare final accounts.**
18. **Write the procedure to create company in Tally.**

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OOPS AND JAVA
Paper II
(English Version)

Time: 3 Hours **Max. Marks : 50**

SECTION A **10 X 2 = 20**

Note: (i) Answer ALL questions.
(ii) Each question carries TWO marks.

1. **Define oops.**
2. **What are Identifiers?**
3. **What is Break statement?**
4. **What is String Array?**
5. **Define Nested loop.**
6. **What is Interface?**
7. **What is Constructor?**
8. **What is Exception?**
9. **What is Multi – Threading?**
10. **Write any 4 HTML tags.**

SECTION – B **5 X 6 = 30**

Note: (i) Answer ANY FIVE questions.
(ii) Each question carries SIX marks.

11. **Explain the Web – Browsers used to Java.**
12. **Explain the Arithmetical Operators in Java.**
13. **Write if and if ..else with examples.**
14. **Write a Java Program to print 1 to n.**
15. **Explain the Polymorphism with example.**
16. **Explain to create own package with example.**
17. **Explain types of Errors in Java.**
18. **Explain the life cycle of the thead.**

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RELATIONAL DATABASE MANAGEMENT SYSTEM (RDBMS)

Paper II

(English Version)

Time: 3 Hours **Max. Marks : 50**

SECTION A **10 X 2 = 20**

Note: (i) Answer ALL questions.
(ii) Each question carries TWO marks.

1. **What is DBMS?**
2. **Expand the terms DDL, DML, DCL.**
3. **What is weak entity and strong entity?**
4. **What is a tuple?**
5. **What is a primary key?**
6. **What are fundamental operations in Relational Algebra?**
7. **What are different DML commands.**
8. **What is sub query?**
9. **What is system?**
10. **What is system analysis?**

SECTION – B **5 X 6 = 30**

Note: (i) Answer ANY FIVE questions.
(ii) Each question carries SIX marks.

11. **What are the advantages of DBMS over file processing system.**
12. **What are the functions of DBA?**
13. **Explain the mapping constraints with neat diagram.**
14. **Draw an ER diagram by showing the relationship between a student and bank.**
15. **What is key? Write about types of keys.**
16. **Explain any six Codd rules.**
17. **Explain any four DML commands with examples.**
18. **Explain different stages of software development life cycle in detail.**

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DATA COMMUNICATION AND COMPUTER NETWORKS
Paper II
(English Version)

Time: 3 Hours **Max. Marks : 50**

SECTION A **10 X 2 = 20**

Note: (i) Answer ALL questions.
(ii) Each question carries TWO marks.

1. **Define Bandwidth.**
2. **What is Internet?**
3. **What is WWW?**
4. **Define Server and Client.**
5. **What is an E – Mail?**
6. **What is an Attachment?**
7. **Write advantages of Internet?**
8. **What is Virus?**
9. **What is Trouble Shooting?**
10. **What is Mother Board?**

SECTION – B **5 X 6 = 30**

Note: (i) Answer ANY FIVE questions.
(ii) Each question carries SIX marks.

11. **Explain different types of Data Communications.**
12. **Explain different types of Computer Networks.**
13. **Explain about Network Topologies.**
14. **Explain in detail about V – SAT.**
15. **Explain any three web browsers.**
16. **Write various advantages and disadvantages of E – Mail.**
17. **Explain the concept of various trouble shoots in printers.**
18. **Write about Internet Security.**

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COMPUTER FUNDAMENTALS AND MS – OFFICE
Paper I
(English Version)

Time: 3 Hours **Max. Marks : 50**

SECTION A **10 X 2 = 20**

Note: (i) Answer ALL questions.
(ii) Each question carries TWO marks.

1. Convert $(43)_{10}$ into ( ) $_{16}$?

16 | 43
2 - 11

Decimal	10	11	12	13	14	15
Hexa Decimal	A	B	C	D	E	F

$(43)_{10} = (2B)_{16}$

2. What is software and hardware?

A) Software: Software refers to the set of computer programs, procedures that describe the programs, how they are to be used.
Software is normally classified into two types:
1) Application Software
2) System Software

Hardware: The physical parts, which you can see and touch, are collectively called hardware.

3. What is an icon?

A) Icons: Icons are small pictures that represent files, folders, programs, and other items. When you first start Windows, we can see at least one icon on our desktop: The Recycle Bin.

4. Expand GUI, CUI, BIOS AND MS – DOS.

A) **G.U.I. :** Graphical User Interface.
C.U.I. : Character User Interface.
BIOS : Basic input/output System(BIOS) Program.
MS - DOS: Micro Soft Disk Operating System.

5. What is office button?

A) Office Button: The Microsoft Office button performs many of the functions that were located in the File menu of older versions of Word. This button allows you to create a new

document, open an existing document, save or save as, print, send (through email or fax), publish or close.

6. What are the alignments in paragraph?

A)

- **Align Left**: the text is aligned with your left margin
- **Center**: The text is centered within your margins
- **Align Right**: Aligns text with the right margin
- **Justify**: Aligns text to both the left and right margins.

7. What is auto correct?

A) AutoCorrect tool in Word to retain certain text the way it is. To customize AutoCorrect:

- Click the **Microsoft Office** button
- Click the **Word Options** Button
- Click the **Proofing** tab
- Click **AutoCorrect Options** button

8. What is undo and redo?

A) **Undo:** Undo is helps to take the document to previous stage after most recent actions.
Redo: Redo helps to take the document to the advanced or most recent actions.

9. What is a formula?

A) **Formula:** A formula is a set of mathematical instructions that can be used in Excel to perform calculations. Formals are started in the formula box with an = sign.

10. What is a template?

A) **Template:** template is a pattern or blueprint or model or "Starter" document contain starting content or boilerplate text.

SECTION – B **5 X 6 = 30**

Note: (i) Answer ANY FIVE questions.
(ii) Each question carries SIX marks.

11. Write about generations of computer.

A) The Computer Generations :

1. First Generation Computers (1950's) :

These computers which used vacuum tubes (valves) as major electronic component . The advantage of vacuum tubes technology is that it made the advent of Electronic digital computer. Vacuum tubes were only electronic devices available during those days which made computing possible.

2. Second Generation Computers (1960's) :

Around 1955 a device called Transistor replaced the bulky electric tubes in the first generation computer. Transistors are smaller than electric tubes and have higher operating speed. They have no filament and require no heating. Manufacturing cost was also very low. Thus the size of the computer got reduced considerably.

3. Third Generation Computers (1970's) :

The third generation computers were introduced in 1964. They used Integrated Circuits (ICs). These ICs are popularly known as Chips. A single IC has many transistors, registers

and capacitors built on a single thin slice of silicon. So it is quite obvious that the size of the computer got further reduced. Computers of this generation were small in size, low cost, large memory and processing speed is very high.

4. Fourth Generation (1980's) :
The present day computers that you see today are the fourth generation computers that started around 1975. It uses large scale Integrated Circuits (LSIC) built on a single silicon chip called microprocessors. Due to the development of microprocessor it is possible to place computer's central processing unit (CPU) on single chip. These computers are called microcomputers. Later very large scale Integrated Circuits (VLSIC) replaced LSICs.

Thus the computer which was occupying a very large room in earlier days can now be placed on a table. The personal computer (PC) that you see in your college is a Fourth Generation Computer.

5.Fifth Generation (Late 1990's) :
These computers use optic fiber technology to handle Artificial Intelligence, expert systems, Robotics etc., these computers have high processing speeds and are more reliable.

12. Write about six internal commands in DOS.

A) CLS: This command is used to Clear the Screen.
Syntax: CLS

DATE: This command is used to display or change the system date. The date format is MM / DD / YYYY.
Syntax: DATE

TIME: This command is used to display or change the system time. The time format is HH / MM / SS. The time must to be entered in 24 hrs internally.
Syntax: TIME

DEL: This command is used to delete a file from the disk.
Syntax: DEL < FILE_NAME>

COPY : This command is used to copy the contents of one file to another files.
Syntax: COPY < SOURCE FILE NAME> <TARGET FILE NAME>

COPY CON: To create a new file with the same content.
Syntax: COPY CON <FILE NAME>

REN: This command is used to change the name of an existing file
Syntax: REN <OLD FILE NAME> <NEW FILE NAME>

VER: This command is used to display the current MS.DOS version number.
Syntax: VER

MD: (Make Directory) This command is used to create a new directory.
Syntax: MD <Directory Name>

CD: (Change Directory) To move from one directory to another directory.
Syntax: CD <DIRECTORY NAME>

DIR (DIRECTORY): This command is used to display the files and folder in the current working directory.

Syntax: DIR

DIR /P: This command is used to display the directories in page wise.

Syntax: dir / p

DIR / W: This command is used to display the directories in width wise

Syntax: dir/w

13. Write about move and copy.

A) To change the position of sentences from one location to another location with in the document or to other document. Then We can move or copy a text within the document or from one document to another document at any particular point.

Copy: If we want to copy the text, the selected text will be duplicated. Source data will in the same position.

Procedure:

- Highlight the text you wish to copy
- right click and click **Copy**,
- Put your cursor where you want the text in the document
- Right click and click **Paste**.

Move: If we want to move the text, the selected text will be moved from the old place to new place. The selected data will be available in new place only.

Procedure:

- Highlight the text you wish to copy
- Right click and click **Cut**
- Put your cursor where you want the text in the document
- Right click and click **Paste**.

14. Write about spell checker.

A) Spell check: Used to check the spelling and grammar mistakes typed in a document. The wrong words will be highlighted by red color under line. We can correct the mistakes typed in the document with this facility.

Procedure:

- Place the cursor at the beginning of the document or the beginning of the section that you want to check
- Click the **Review** Tab on the Ribbon.
- Click **Spelling & Grammar** on the Proofing Group.
- Any errors will display a dialog box that allows you to choose a more appropriate spelling or phrasing.
- If you wish to check the spelling of an individual word, you can right click any word that has been underlined by Word and choose a substitution.

15. Write about mail merge.

A) Mail Merge: Mail merge is a very useful and powerful feature of MS-Word. It is used to print personalized form letters. The form letters have the same contents but are sent to many persons.

Ex: Business reply letters, call letters and notice for a meeting.

In this facility, all address data is stored one file. The format of the letter is stored in another file. Those are a) Main Document

b) Data source file

Selecting Recipients for Mail Merge Letters:

- Click Start Mail Merge on the Mailings ribbon and select the type of document you'd like to create.
- Click Select Recipients on the Mailings ribbon to add recipients to the mailing.

We can opt to create a new database of recipients. You can also opt to use an existing list or Outlook contacts.

Adding Recipients to Your Mail Merge Database: In the New Address List Box, begin entering your contacts.

Each set of fields is referred to as an entry. To add additional recipients, click the New Entry button. To delete an entry, select it and click Delete Entry. Click Yes to confirm the deletion.

Adding and Deleting Mail Merge Fields

You may wish to delete or add fields types to your mail merge document.

Once you've added all your recipients, click OK on the New Address List dialog box. Name the data source and click Save.

Inserting a Merge Field in Your Document

To insert a field into your document, click Insert Merge Field on the Mailings ribbon. Select the field you would like to insert. The field name appears where you have the cursor located in your document.

You can edit and format the text surrounding the field. Formats applied to the field will carry over to your finished document. You can continue to add fields to your document.

Previewing Your Mail Merge Letters

To preview the letters, click Preview Results on the Mailings ribbon.

Correcting Errors in Mail Merge Fields

You cannot alter the data in the merge document. Instead, you'll need to fix it in the data source.

To do this, click Edit Recipient List on the Mailings ribbon. In the box that opens, you can alter the data for any of your recipients. When you're done, click OK.

Finalizing Your Mail Merge Documents:

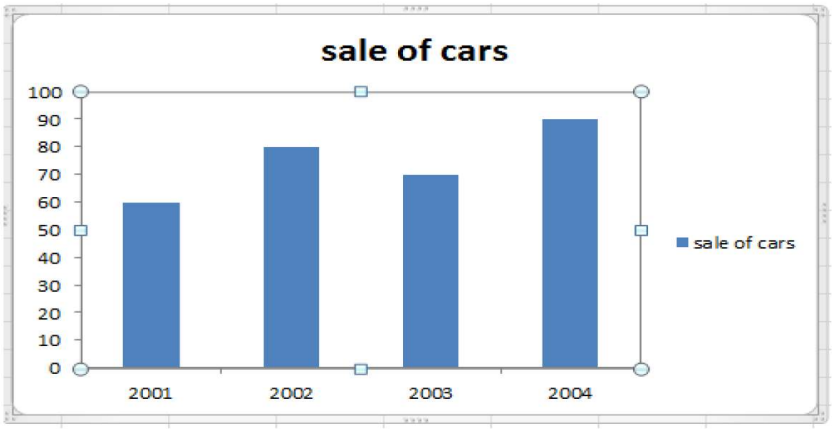
After you've reviewed your documents, you're ready to finalize them by completing the merge. Click the Finish & Merge button on the Mailings ribbon.

16. Write about charts.

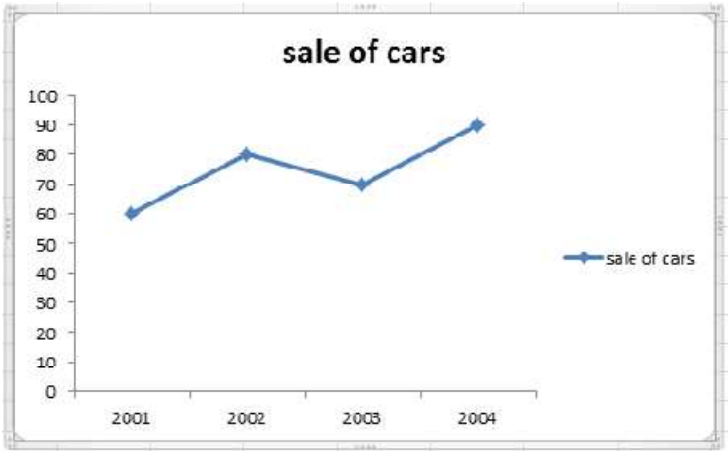
A) Charts are used to display series of numeric data in a graphical format to make it easier to understand large quantities of data and the relationship between different series of data. Here charts are prepared from the following table.

	A	B
1	Maruthi show room	
2	vijayawada branch	
3	Year	sale of cars
4	2001	60
5	2002	80
6	2003	70
7	2004	90

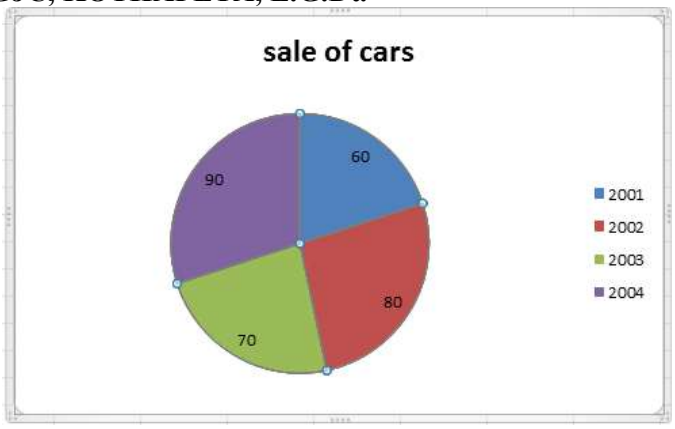
Column charts Data that is arranged in columns or rows on a worksheet can be plotted in a column chart. Column charts are useful for showing data changes over a period of time or for illustrating comparisons among items.



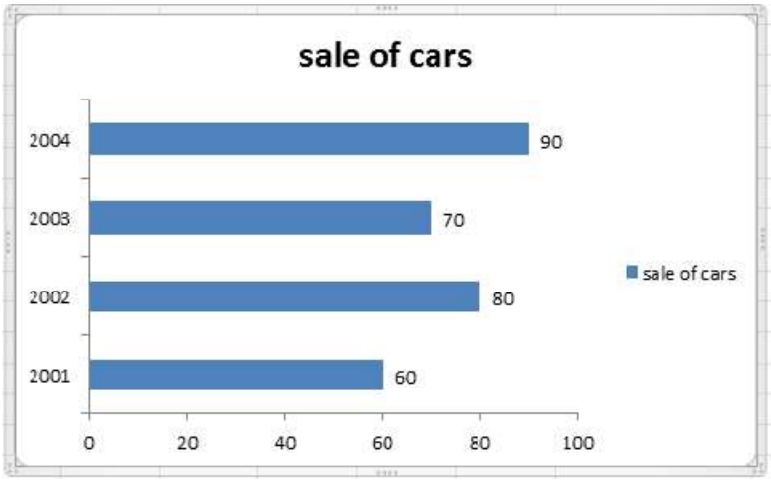
Line charts: Data that is arranged in columns or rows on a worksheet can be plotted in a line chart. Line charts can display continuous data over time, set against a common scale, and are therefore ideal for showing trends in data at equal intervals. In a line chart, category data is distributed evenly along the horizontal axis, and all value data is distributed evenly along the vertical axis.



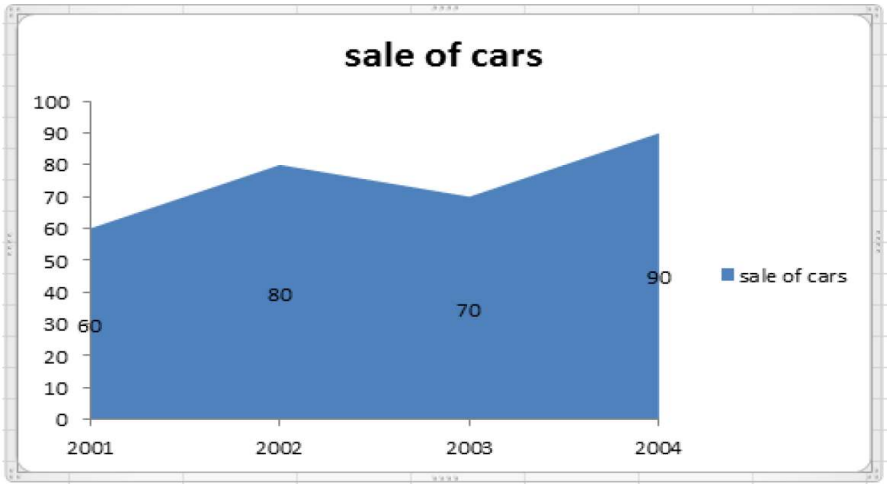
Pie charts Data that is arranged in one column or row only on a worksheet can be plotted in a pie chart. Pie charts show the size of items in one data series, proportional to the sum of the items. The data points in a pie chart are displayed as a percentage of the whole pie.



Bar charts Data that is arranged in columns or rows on a worksheet can be plotted in a bar chart. Bar charts illustrate comparisons among individual items.

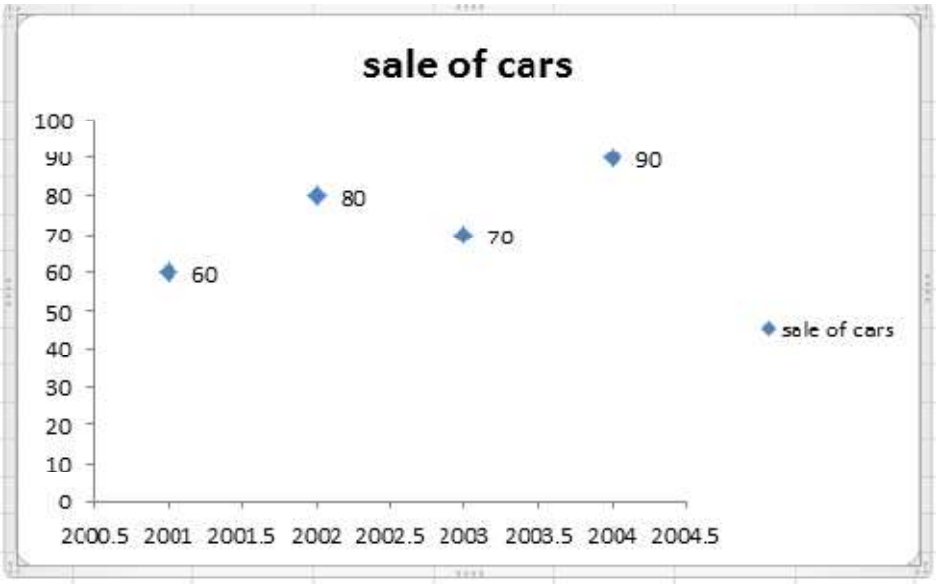


Area charts: Data that is arranged in columns or rows on a worksheet can be plotted in an area chart. Area charts emphasize the magnitude of change over time, and can be used to draw attention to the total value across a trend. For example, data that represents profit over time can be plotted in an area chart to emphasize the total profit. By displaying the sum of the plotted values, an area chart also shows the relationship of parts to a whole.



XY (scatter) charts: Data that is arranged in columns and rows on a worksheet can be plotted in an xy (scatter) chart. Scatter charts show the relationships among the numeric values in several data series, or plots two groups of numbers as one series of xy coordinates.

A scatter chart has two value axes, showing one set of numeric data along the horizontal axis (x-axis) and another along the vertical axis (y-axis). It combines these values into single data . points and displays them in irregular intervals, or clusters. Scatter charts are typically used for displaying and comparing numeric values, such as scientific, statistical, and engineering data.



17. Write and explain any five statistical functions.

A) Statistical functions: Average, Count, Max, min.

1. **Average**: Returns average(arithmetic mean) of its arguments
   Syntax: average(number1,number2,..)

   Example: Average(a2:e2) gives result 4 because (3+5+4+6+2)/5 = 4

2. **Count:** The **COUNT** function counts the number of cells that contain numbers, and counts numbers within the list of arguments.
   Syntax: Count(value1,[value2] ,...)
   The COUNT function syntax has these arguments:
   value1 Required. The first item, cell reference, or range within which you want to count numbers.
   value2, ... Optional. Up to 255 additional items, cell references, or ranges within which you want to count numbers.
   Example
   Count(a4:e4) gives result 3 because (12,8,4 are 3 values)

3. COUNTA: The **COUNTA** function counts the number of cells that are not empty in a range.

Syntax: COUNTA(value1, [value2], ...)
The **COUNTA** function syntax has the following arguments:

- **value1** Required. The first argument representing the values that you want to count.

- **value2, ...** Optional

Ex: counta(A4:E4) gives the result 4 because the range contains 4 values.

4. COUNT BLANK: Counts empty cells in a specified range of cells.

Syntax: COUNTBLANK(range)

Range is the range from which you want to count the blank cells.

Example:

Countblank(A4:E4) gives result 1 because the range contains one blank.

5.COUNTIF: The **COUNTIF** function counts the number of cells within a range that meet a single criterion that you specify. For example, you can count all the cells that start with a certain letter, or you can count all the cells that contain a number that is larger or smaller than a number you specify. For example, suppose you have a worksheet that contains a list of tasks in column A, and the first name of the person assigned to each task in column B. You can use the **COUNTIF** function to count how many times a person's name appears in column B and, in that way, determine how many tasks are assigned to that person. For example:

=COUNTIF(F2:F25,"Nancy")

COUNTIF(range, criteria)

The **COUNTIF** function syntax has the following arguments:

range Required. One or more cells to count, including numbers or names, arrays, or references that contain numbers. Blank and text values are ignored.

criteria Required. A number, expression, cell reference, or text string that defines which cells will be counted. For example, criteria can be expressed as 32, ">32", B4, "apples", or "32".

Ex:

Countif(A4:E4,">10") gives result 1 because the range contains only one value that is greater than 10.

6.MAX: Returns the maximum value in the range

MAX(number1,number2,...)

Number1, number2, ... are 1 to 255 numbers for which you want to find the maximum value.

Ex : max(A2:E2) gives result 6 because 6 is the maximum value in that range.

7.MIN: Returns the minimum value in the range

MIN(number1,number2,...)

Number1, number2, ... are 1 to 255 numbers for which you want to find the minimum value.

Ex : max(A2:E2) gives result 2 because 6 is the minimum value in that range.

18. Write the groups in each tab of a ribbon in PowerPoint.

A) **Home**: Clipboard, Slides, Font, Paragraph, Drawing, and Editing
Insert: Tables, Illustrations, Links, Text, and Media Clips
Design: Page Setup, Themes, Background
Animations: Preview, Animations, Transition to this Slide
Slide Show: Start Slide Show, Set Up, Monitors
Review: Proofing, Comments, Protect
View: Presentation Views, Show/Hide, Zoom, Window, Macros

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PROGRAMMING IN 'C'
Paper I
(English Version)

Time: 3 Hours **Max. Marks : 50**

SECTION A **10 X 2 = 20**

Note: (i) Answer ALL questions.
(ii) Each question carries TWO marks.

1. What is Pseudo code?

A) Pseudo code: Pseudo code is a detailed and readable description of what a computer program or algorithm must do, expressed in a formally - styled natural languages like English, rather than in a programming language.

2. What is Algorithm?

A) Algorithm: algorithm is a set of well defined instructions written in a sequence to solve a given problem.

3. What are types of Constants?

A) Constants: Constants are those, which do not change, during the execution of the program.

Types of constants:
Numeric Constants
Character Constants
String Constants

4. What is a syntax of print f ( )?

A) Syntax of printf: printf("control string", arg1, arg2, ….arg-n);
Where control string is a string that contains formatted information, and arg1, arg2,…arg n are arguments that represent the output data items.

5. What is use of Continue Statement?

A) continue continue is a keyword used for containing the next iteration of the loop.

6. What is an Array?

A) *Array:* An array is a collection of similar type of data elements which are stored in consecutive memory locations under a common variable name

7. Write a syntax of two dimensional array.

A) Syntax: type variable-name[size];
Ex: The following array **salary** can store ten elements of type integer.
int salary[10];

8. What are the string handling functions?

A) 'C' language having various string handling functions to work with strings. All these functions are available with the header file ***string.h*** those are

1. strlen( )
2. strcat( )
3. strcpy( )
4. strcmp( )

9. What is recursion function?

A) Recursion is a process by which a function call itself repeatedly, until some specified condition has been satisfied.

10. What is union?

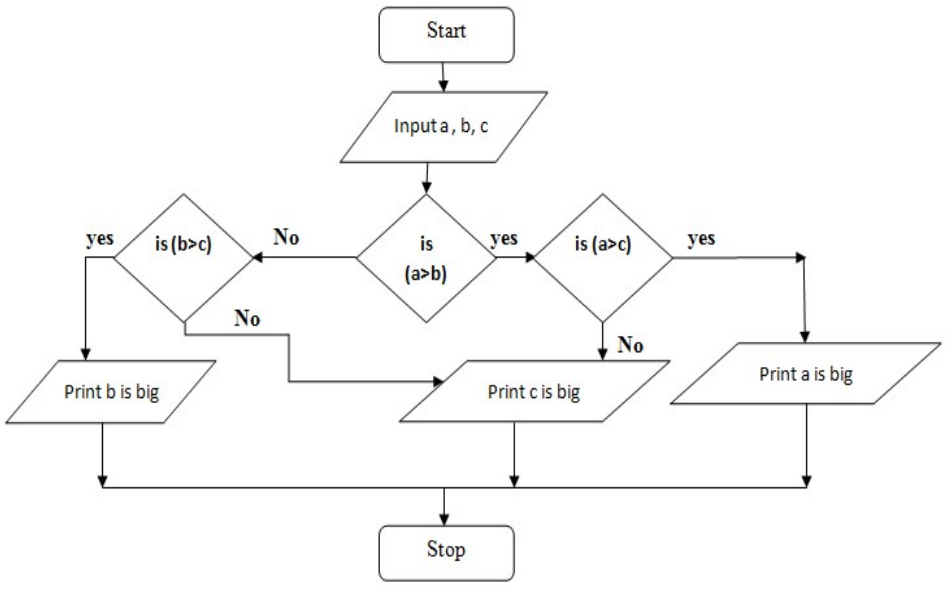
A) Union : Union is a collection of heterogeneous type of data that share a single location.

SECTION – B **5 X 6 = 30**

Note: (i) Answer ANY FIVE questions.
(ii) Each question carries SIX marks.

11. Draw a flow – chart find biggest / greatest of given three numbers.

A)



12. What are the data types in 'C'? Explain them.

A)

Type	Size (in Bytes)	Range
char or signed char	1	-128 to 127
unsigned char	1	0 to 255
int or signed int	2	-32,768 to 32,767
unsigned int	2	0 to 65,535
short int or signed short	1	-128 to 127

int		
long int or unsigned long int	4	-2,147,483,648 to 2,147,483,647
unsigned long int	4	0 to 4,294,967,295
float	4	-3.4 *e -38 to + 3.4 *e +38
double	8	-1.7 *e -308 to – 3.4 * e +308
long double	10	-3.4 * e-4932 to +3.4 * e +4932

13. Explain and syntax of if and if .. else statements in 'C'.

a. if statement: The **if statement** is used to express conditional expressions. If the given condition is true then it will execute the statements otherwise skip the statements.

The simple structure of '**if**' statement is

i.
```
if (< conditional  expression>)
        statement-1;
        (or)
```

The conditional expression is evaluated, if the expression is true the statements will be executed. If the expression is false the statements are skipped and execution continues with the next statements.

Example*:*
```
a=20; b=10;
if ( a > b )
        printf ("big number is %d" ,a);
```

b. if-else statements: The conditional expression is evaluated and if the expression is true the **true block statements** will be executed. If the expression is false the **false block statements** will be executes.

Syntax:
```
if (test expression)                {
        true block statements;
}
 else   {
        false block statements;
          }
```

Example:
```
if ( a> b )
        printf ("a is greater than b");
else
        printf ("a is not greater than b");
```

14. What are the loops statements in 'C'? Explain.

A) Looping statements: Looping statements are used to execute the statements repeatedly as long as an expression is true. When the expression becomes false then the control transferred to the statement immediately following the loop. There are three kinds of loops in **C**.

a) while b) do-while c) for

a. while loop: The statements will be executed repeatedly as long as the test condition is 'true'. If the test condition is 'false' then the control is transferred out of the while loop.

Syntax:
```
while (test condition) {
                statements;
        }
```

Example*:*
```
int digit = 1;
while (digit <=5)
{
printf ("%d", digit);
++digit;
}
```
The output is 1 2 3 4 5

b. do-while statement: The **do-while** loop evaluates the condition after the execution of the statements in the body. The statement with in the do-while loop will be executed at least once. So the **do-while** loop is called a bottom tested loop.
Here also the statements will be executed as long as the expr value is true. If the expression is false the control come out of the loop.

Syntax:
```
do{
        Statements;
}while <expr> ;
```

Example:
```
int digit =1;
do
{
printf ("%d", digit);
++d;
} while (d<=5);
```
The output is 1 2 3 4 5

c. for statement: The **for** loop is used to execute the statements for repetead number of times.

Syntax: **for** (exp1;exp2;exp3) statements;
exp1 : Initialization Expression
exp2 : Condition / Control Expression
exp3 : Update (Increment / Decrement) Expression

Example*:*
```
for (i=1;i<=5 ;++i )
        printf ("%d",i);
```

The output is 1 2 3 4 5

15. Write a 'C' program to sum of n numbers with using Arrays.

A)
```
#include<stdio.h>
main ( )
{
int i, n, s;
printf ("enter the value to n \n");
scanf ("%d", &n);
s=0;
i=1;
while (i ≤n){
```

```
s= s+i;
i=i+1;
}
printf ("\n the sum value of 1 to n natural no' s is %d \n", s);
}
```

16. Write a 'C' program to addition of two matrices.

A)

```
/*PROGRAM FOR ADDITION OF TWO n X n MATRICES*/
#include<stdio.h>
main()
{
int a[5][5],b[5][5],c[5][5],i,j,m,n,p,q;
clrscr();
printf("Enter no of rows and columns for first matrix:");
scanf("%d %d",&n, &m);
printf("Enter no of rows and columns for second matrix:");
scanf("%d %d",&p,&q);

/*Checking for addition is possible or not*/
if((n == p) && (m ==q))
{
   printf("\nEnter the elements of first matrix:");
    for(i=0; i<n; ++i)
     for(j=0; j<m; ++j)
      scanf("%d", &a[i][j]);
    printf("\n Enter the elements of second matrix:");
     for(i=0; i<n; ++i)
          for(j=0; j<m; ++j)
            scanf("%d",&b[i][j]);

          /* Addition of two matrices*/
    for(i=0; i<n; ++i)
     for(j=0; j<m; ++j)
          c[i][j] = a[i][j]+b[i][j];

   /*printinf resultant matrix*/
  for(i=0; i<n; ++i)
  {
    for(j=0; j<m; ++j)
      printf("%5d", c[i][j]);
    printf("\n");
  }
}/*End of if*/
else
  printf("Matrices cannot be added");
getch();
}
```

17. Write a 'C' program to find factorial of a given number.

A) Program:

```
#include<stdio.h>
#include<conio.h>
main()
{
int i,n,fact=1;
clrscr();
printf("\n Enter a number n: ");
scanf("%d",&n);
for(i=1;i<=n;++i)
fact=fact*i;
printf("\n Factorial of %d is %d",n,fact);
getch();
}
```

Output:

```
Enter a number n: 6
Factorial of 6 is 720
```

(or)

```
/*finds factorial by using recursion*/
#include<stdio.h>
#include<conio.h>
void main()
{
long factorial(int);
int num;
long f;
clrscr();
printf("Enter a number  n=");
scanf("%d", &num);

 if (num< 0)
      printf("Negative numbers are not allowed.\n");
 else  {
   f = factorial(num);
   printf("factorial of %ld is %ld\n", num, f);
 }
getch();
}

long factorial(int n) {
 if (n == 0)
   return 1;
 else
   return(n * factorial(n-1));
}
```

input

```
Enter a number n= 5
```

output

```
Factorial of  5 is 120
```

18. What is structure? Explain in Briefly.

A) Structure: A group of one or more variables of different data types organized together under a single name is called a **Structure.**

a) Structure Declaration : The declaration of a structure specifies the grouping of various data items into a single unit without assigning any resources to them. The syntax for declaring a structure in C is as follows:

```
struct <Structure Name>
{
        Data Type  member-1;
        Data Type  member-2;
          ….    ….
        DataType   member-n;
};
```

The structure declaration starts with the structure header, which consists of the keyword '**struct'** followed by a tag. The tag serves as a structure name, which can be used for creating structure variables. The individual members of the structure are enclosed between the curly braces and they can be of the similar or dissimilar data types. The data type of each variable is specified in the individual member declarations.

Example:

Let us consider an employee database consisting of employee number, name, and salary. A structure declaration to hold this information is shown below:

```
struct employee
{
        inteno;
        char name [80];
        float sal;
};
```

b) Structure Variables: Similar to other types of variables, the structure data type variables can be declared using structure definition.

```
struct
{
      introllno;
      char  name[20];
      float   average;
      } a, b;
```

In the above structure definition, a and b are said to be structure type variables. 'a' is a structure type variable containing rollno, name, average as members, which are of different data types. Similarly 'b' is also a structure type variable with the same members of 'a '.

c) Structure Initialization: The members of the structure can be initialized like other variables. This can be done at the time of declaration.

Example

```
struct address
{
   char    name [20];
   char    desgn [10];
   char    place [10];
} ;
```

i.e
struct address my-add = { 'Sastry', 'lec', 'kothapeta');
i.e
my-add . name = 'Sastry'
my-add . desgn = lec
my-add . place = kothapeta
As seen above, the initial values for structure members must be enclosed with in a pair of curly braces. The values to be assigned to members must be placed in the same order as they are specified in structure definition, separated by commas. If some of the members of the structure are not initialized, then the c compiler automatically assigns a value 'zero' to them.

d) Accessing of Structure Members
As seen earlier, the structure can be individually identified using the period operator (.). After identification, we can access them by means of assigning some values to them as well as obtaining the stored values in structure members. The following program illustrates the accessing of the structure members.
Example: Write a C program, using structure definition to accept the time and display it.

```
/ * Program to accept time and display it */
# include <stdio.h>
void main( )
{
        struct
{
        int hour, min;
        float seconds;
  } time;
        printf ("Enter  time in Hours, min and Seconds\n");
        scanf ( "%d %d %f", &time . hour, & time . min, & time . seconds);
        printf ( " The accepted time is  %d %d %f " , time . hour, time . min, time .
seconds);
}
```

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ACCOUNTANCY AND TALLY
Paper I
(English Version)

Time: 3 Hours **Max. Marks : 50**

SECTION A **10 X 2 = 20**

Note: (i) Answer ALL questions.
(ii) Each question carries TWO marks.

1. What is Accountancy?

A) **Accountancy:** "Accounting is the process of identifying, measuring and communicating economic information to permit informed judgments and decisions by users of the information".

2. What is Account?

Account: Account is a summary of relevant transactions at one place relating to a particular head. An account will be represented in the form of " T ". Debit and Credit refer to left side and right side of the account respectively.

Dr	Title of the account	Cr
Debit		Credit

3. Define Journal Entry.

A) Journal Entry The process of recording the transactions in the journal is called **Journalizing** and the entry made in the journal is called **Journal Entry.**

4. What is Ledger?

A) **Ledger:** Ledger is a main book which contains all the accounts in which the transactions recorded in the books of original entry are transferred. Ledger is also called the "***Book of Secondary Entry***", because the transactions are finally incorporated in the ledger.

5. What is Trade Discount?

A) Trade Discount: The rebate offered by the supplier on the catalogue price is known as trade discount. After deducting the trade discount from the purchase price, the only net amount is to be recorded in the books, if the discount is given by the trader.

6. Define Contra Entry.

A) Contra Entry: An entry which appears on both sides of the Three column cash book i.e., Debit side as well as Credit side is called "***Contra Entry***". It affects both the bank and the cash columns at a time on both sides of the cash book. The contra entries represents by writing alphabet **"C"** in L.F. column on each side of the cash book.

The contra entries are recorded in the following cases

a) When cash is deposited into bank.

b) When cash is withdrawn from bank for office use.
c) When an account is opened with bank.
d) When a cheque received from others on one day and deposited in the bank on another day.

7. Define Passbook.

A) Pass Book: Bank maintains an account for each customer in its book. All the deposits done by the customer are recorded on the credit side of customer account and all the withdrawals done by the customer are recorded on the debit side of the customer account. A copy of this account is regularly sent to the customer by the bank. This copy is called "***Pass Book***".

8. Define Trial Balance.

A)

- According to **J.R.Batliboi** Trial balance is a statement, prepared with the debit and credit balances of ledger to test the arithmetical accuracy of the books.
- According to **Carter** "Trial balance is the list of debit and credit balances, taken out from ledger . It also includes the balances of cash and bank taken from cash book".
- According to **Spicer and Peglar,** " A trial balance is a list of all the balances standing on the ledger accounts and cash book of a concern at any given date.

9. Define Profit and Loss Account.

A) Profit and Loss Account: Profit and Loss Account is a nominal account, so all the expenses and losses should be debited and all the incomes and gains to be credited to Profit & Loss account. The balance of Profit & Loss Account is either net profit or net loss and the same is to be added to / deducted from Capital Account in Balance Sheet.

10. What are the functions keys used in Tally?

A)

Function Key	Purpose
F1	Select a Company
F1 (Alt+F1)	Shut Company, Detailed display of Profit & Loss Account or Balance sheet etc. while in those screens.
F2	Date
F2(Alt+F2)	To change accounting period
F3	Company information
F3 (Alt+F3)	To change company basic data or information.
F4	Contra Entry
F5	Payment
F6	Receipt
F7	Journal
F8	Sales
F8 (Alt+F8)	Credit Note
F9	Purchase
F9 (Alt+F9)	Debit Note
F 10	Reverse Journal
F10 (Alt+F10)	Memos
F11	Features
F12	Configuration

SECTION – B **5 X 6 = 30**

Note: (i) Answer ANY FIVE questions.
(ii) Each question carries SIX marks.

11. Explain different accounting concepts in detail.

A) Accounting is the language of business. To make the language convey the same meaning to all people, as far as practicable, and to make it full of meaning, accountants have agreed on a number of concepts which they try to follow. These are given below:

1. Business Entity Concept
2. Money Measurement Concept
3. Cost Concept
4. Going Concern Concept
5. Dual – Aspect Concept
6. Realisation concept
7. Accural Concept
8. Matching Concept
9. Accounting Period Concept

1. **Business Entity Concept:** Accountants treat business as separate from the owner; then it becomes possible to record transactions of the business with the owner also. Without such differentiation, the affairs of the firm will all be mixed up with the private affairs of the owner and the true picture of the business will not be available.
2. **Money Measurement Concept:** Accounting records only those transactions which are expressed in terms of money, though inventory rerecords are also kept in some cases. It should be remembered that money allows various things of different nature to be added up together and dealt with. The use of a building and the use of clerical services can be added up only through money values and not otherwise.
3. **Cost Concept:** Transactions are entered in the books of account at the amounts actually involved. It prevents random values being put on transactions. This concept is used mainly in acquisition of assets. In other words, the amount to be recorded is objectively arrived at as a result of the mutual agreement of two parties involved.
4. **Going Concern Concept:** It is assumed that the business will exist for a long time and transactions are recorded from this point of view. This concept requires difference between expenditure as long term benefitting expenditure (Ex: pre paid insurance) and short term benefitting expenditure (Ex: Salaries).
5. **Dual – Aspect Concept:** Dual Aspect Concept is the core of the double-entry bookkeeping. It provides the very basis of recording business transactions in the books of accounts. Dual Aspect Concept assumes that every transaction has two-sided effects, i.e. it affects two accounts in their respective opposite sides. Therefore, the transaction should be recorded at two places. It means, both the aspects of the transaction must be recorded in the books of accounts.

   The concept of duality is commonly expressed in terms of fundamental accounting equation:

   Assets = Liabilities + Capital

The above accounting equation states that the assets of a business are always equal to the claims of owner/owners and the outsiders this claim is also termed as **capital or owner's equity** and that of outsiders, as **liabilities or creditors' equity**. According to this concept for every debit, there is a correspondence credit and vice versa. Every transaction has two aspects. These two aspects may be:

1. An increase in asset and decrease in other assets
2. An increase in asset and simultaneously increase in liability
3. A decrease in asset and increase in another asset
4. A decrease in asset and decrease in liability

6. **Realisation concept:** Revenue should be accounted for only when it is actually realized or it has become certain that the revenue will be realized. This signifies that revenue should be recognized only when the services are rendered or the sale is affected. However, in order to recognize revenue, actual receipt of cash is not necessary, but the organization should be legally entitled to receive the amount for the services rendered or the sale affected.
7. **Accrual Concept:** The accrual concept in accounting means that expenses and revenues are recorded in the period they occur, whether or not cash is involved. The benefit of the accrual approach is that financial statements reflect all the expenses associated with the reported revenues for an accounting period.
8. **Matching Concept:** The matching concept is an accounting practice whereby firms recognize revenues and their related expenses in the same accounting period. Firms report revenues, that is, along with the expenses that brought them. The purpose of the matching concept is to avoid misstating earnings for a period.
9. **Accounting Period Concept:** An accounting period is the span of time covered by a set of financial statements. This period defines the time range over which business transactions are accumulated into financial statements, and is needed by investors so that they can compare the results of consecutive time periods.

12. What is an Account? Explain different types of accounts with their rules.

A) The accounts in double entry system are classified into three categories:

1. Personal accounts
2. Real accounts
   a) Tangible accounts
   b) Intangible accounts
3. Nominal accounts

1. Personal Accounts: Personal accounts may be further classified into two categories:

a) **Natural Personal Accounts**: An account related to any individual like Bheemesh, Sitharam, Prasad, or Suresh is called as a *Natural Personal Account*.

b) **Artificial Personal Accounts**: An account related to any artificial person like M/s Siri Motors LLP, M/s TATA MOTORS Ltd, M/s Reliance Industries, etc., is called as an *Artificial Personal Account*.

Rule: **Debit the Receiver**
Credit the Giver

2. Real Accounts: Every Business has some assets and every asset has an account. Thus,

asset account is called a real account. There are two type of assets:

a) **Tangible** Assets are having physical existence, which we can touch and see. Ex: Buildings, Furniture, Plant and Machinery.
b) **Intangible** assets does not have any physical existence, but their possession gives rise to some rights and benefits to the proprietor or owner.
Ex: Royalty, Copy rights, Goodwill, Trademarks.

Accounting treatment for both type of assets is same.

Rule: **Debit what comes in**
Credit what goes out

3. Nominal Accounts: These accounts are related to incomes and expenses or profits and losses of business concern. Ex: Salary Account, Rent Account, Electricity Account, Discount Account, Commission Account, Interest Account

Rule: **Debit all Expenses and Losses**
Credit all Incomes and Gains

13. Explain different types of Subsidiary Books.

A) Different types of Subsidiary Books

There are 8 types of subsidiary books used for different purposes. Those are:

1. Purchase Book
2. Purchase Returns Book
3. Sales Book
4. Sales Returns Book
5. Cash Book
6. Bills Receivable Book
7. Bills Payable Book
8. Journal Proper

Purchase Book Goods purchased on credit are recorded in this book. The cash purchases of goods and Purchase of Assets (Furniture, Machinery etc.) are not recorded. The invoice or bills received from the supplier by the firm are the source documents for recording entries in this book.

Purchase Book

Date	Particulars	Inward Invoice No.	L.F.No	Amount Rs.

Purchase Returns Book: The goods returned to the supplier purchased on credit are recorded in this book. As the goods are going out from the firm, this book is also called as '***Returns Outward Book***". For every return a Debit Note is prepared and is sent to the supplier. Each debit note is serially numbered and dated.

Purchases Returns Book

Date	Particulars	Debit Note No.	L.F.No	Amount Rs.

Sales Book: The goods sold on credit are recorded in this book. The cash sales of goods and Sale of Assets (Furniture, Machinery etc.) are not recorded. The Outward invoice or bills prepared by the trader are the source documents for recording entries in this book. Sales book also called as '***Sales Day book or Sales Journal***'.

Sales Book

Date	Particulars	outward Invoice No.	L.F.No	Amount Rs.

Sales Returns Book: The goods returned by the customers sold for credit are recorded in this book. As the goods are coming into the firm, this book is also called as "***Returns Inward Book***". On receipt of goods from the customer, credit note is prepared and serially numbered and dated.

Sales Returns Book

Date	Particulars	Credit Note No.	L.F. No	Amount Rs.

Cash Book: In this book, all the transactions relating to cash receipts and cash payments are recorded. It starts with the cash or bank balance at the beginning of the period. It gives the closing balance at the end of the period. It is the only subsidiary book which acts as both Journal and Ledger.

Bills Receivable Book: A trader draws bills on the debtors for the amount due from them, such bills drawn by the traders and duly accepted by the debtors are called '***Bills receivable'***. The amount on bills to be received is entered in bill receivable book. This book contains the details of the bill date, acceptor's name, amount, term, place of payment etc.

Bills Receivable Book

No. Of Bill	Date Received	Date of bill	From whom received	Drawer	Acceptor	Where payable	Term	Due date	Ledger Folio	Amount	Cash book folio	Remarks

Bills Payable Book: Every business organisation accepts the bills to the creditors, like wholesalers or manufacturers for the purchase of goods on credit. Such bills drawn by creditors and accepted by traders are called bills payable and they are recorded in a separate book called ***'Bills Payable Book'***.

Bills Payable Book

No. of bill	Date of bill	To whom given	Drawer	Payee	Where payable	Term	Due date	Ledger Folio	Amount paid	Date of Payment	Cash Book Folio	Remarks

14. Explain different types of Cash Books in detail.

A) There are different kinds of cash books maintained by the business organisation depending on the size of business. Those are

1. Simple Cash Book (or) Single Column Cash Book
2. Double Column Cash Book
3. Triple Column Cash Book
4. Petty Cash Book

1. <u>Simple Cash Book (or) Single Column Cash Book</u>

Simple Cash Book (or) Single column cash book records all cash transactions of the business in a chronological order. Cash receipts are to be debited and cash payments are to be credited. We can ascertain the balance like other accounts, after entering all the transactions. The format of single column cash book is as follows.

Dr. Simple Cash Book (or) Single Column Cash Book Cr.

Date	Particulars	L.F.	Amount Rs.	Date	Particulars	L. F.	Amount Rs.

2. **<u>Double column Cash Book (or) Two Column Cash Book:</u>**

This cash book is an extension of Single Column Cash Book. In double column cash book, an additional column is provided for the discount. On the debit sided discount allowed column and on the credit side discount received column is provided along with cash column. There are two columns for amount on each side of the cash book. One is for cash or bank and the other is for Discount. This cash book also called as Two Column Cash Book.

The Double column Cash Book is again classified into Two types those are

1. Cash book with Cash and Discount Columns
2. Cash book with Bank and Discount Columns

Dr Cash and Discount column cash book Cr

Date	Particulars	L.F. No	Discount Allowed	Amount Rs.	Date	Particulars	L.F. No	Discount Received	Amount Rs.

Dr **Bank and Discount column cash book** **Cr**

Date	Particulars	L.F. No	Discount Allowed	Bank Rs.	Date	Particulars	L.F. No	Discount Received	Bank Rs.

3. **Three Column Cash Book:** In addition to the Date, Particulars, L.F. No., Discount and Amount columns in the double column cash book, the triple column cash book contains bank column. It contains three columns for amount on both debit and credit sides. This book also called or known as Cash book with Cash, Bank and Discount columns.
   - It records both cash and bank transactions.
   - It records the transactions which affects both cash and bank at a time with the help of contra entry.

The proforma of Three column cash book is as follows.

Dr. **Three column cash book** **Cr.**

Date	Particulars	L.F. No	Discount Allowed	Amount Rs.	Bank Rs.	Date	Particulars	L.F. No	Discount Received	Amount Rs.	Bank Rs.

4. Analytical Petty Cash Book: Due to a large number of Petty expenses or petty payments such as cartage, travelling, postage, refreshments, stationery and other expenses, it is difficult to record all such payments in regular books of accounts. To record all such payments of repetitive nature, a separate cash book is prepared which is called petty cash book.

15. Explain importance of Bank Reconciliation Statements.

A) Bank Reconciliation Statement: The statement prepared to reconcile the balances of cash book and pass book is called ***"Bank Reconciliation statement"***. i.e. The Bank Reconciliation statement is a statement prepared to reconcile the difference between the balances as per the bank column of the cashbook and passbook at any given date.

Significance:

- To locate the mistakes or errors on either side.
- To Enable the business concern to get up – to – date record of transactions from the bank.
- To Ensure proper evidence of payment
- To Enable the business to identify the cheques deposited at bank by the business but not collected in time.
- To prevent the frauds and misappropriations

16. Prepare the Trial Balance from the following balances of different ledger accounts –

Cash A/c	**53,500**
Capital A/c	**60,000**
Purchases A/c	**6,000**
Prasad A/c	**2,000**
Sales A/c	**2,000**
Salaries A/c	**1,000**
Commission A/c	**1,000**
Anupama A/c	**500**

Trial Balance

S.L.No	Nature of Accounts	L.F.	Balances Dr. Rs.	Balances Cr. Rs.
1.	Cash A/c		53,500	
2.	Capital A/c			60,000
3.	Purchases A/c		6,000	
4.	Prasad A/c		2,000	
5.	Sales A/c			2,000
6.	Salaries A/c		1,000	
7.	Commission A/c			1,000
8.	Anupama A/c		500	
	Total		63,000	63,000

17. Write the procedure to prepare final accounts.

A) After having checked the accuracy of the books of accounts through preparation of Trial Balance, businessman wants to ascertain the profit earned or loss suffered during the year and also the financial position of his business at the end of the year. For this purpose he prepares 'Final Accounts' which are also termed as 'Financial Statement'. These include the following:

1) Trading Account
2) Profit and Loss Account
3) Balance Sheet

Trading Account: An account is to be prepared to know the results of trading activities carried during the accounting period is termed as ***"Trading account"***. Trading account is a nominal account. The trading expenses should be debited and the trading incomes should be credited to this account. The outcome of the trading account is either gross profit or gross loss. The trading account is to be prepared to find out the difference between actual cost of goods sold and sale proceeds.

Cost of goods sold = Purchase price of the goods + Expenses incurred on purchases.

Cost of Goods Sold = Opening Stock + Net Purchases (Cash + Credit – Returns) +Direct Expenses – Closing Stock of Goods

Gross Profit / Loss = Net Sales – Cost of Goods Sold

Profit and Loss Account: **Profit and Loss Account** is a nominal account, so all the expenses and losses should be debited and all the incomes and gains to be credited to Profit & Loss account. The balance of Profit & Loss Account is either net profit or net loss and the same is to be added to / deducted from Capital Account in Balance Sheet.

Balance sheet: Balance Sheet may be defined as "an orderly statement representing assets, properties, capital and liabilities of the business on a particular date".

It is the statement prepared to find out financial position i.e., assets and liabilities of business on a given date. The balance sheet explains that what a business owns (assets) and what the business owes to others (liabilities) on a given date.

The balance sheet is prepared on the basis of trial balance. Only real and personal accounts are taken into consideration in the preparation of balance sheet.

18. Write the procedure to create company in Tally.

A) The new company can be created using the following steps.

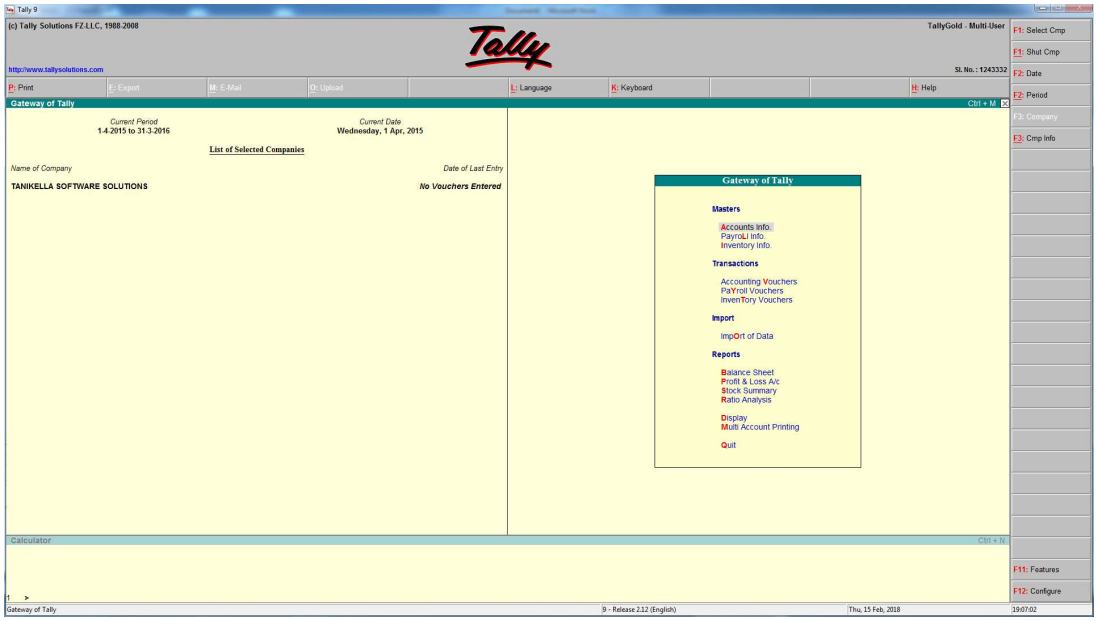
Step 1 : Start '! programs '!tally 7.2/ tally 9.0

or

Step 2: double click on tally icon on desktop

Step 3 : Select the option create company from company information screen

Step 4 : the company creation window gets opened and user can enter all the details of company like Name of company , Mailing name , Company address , Email address of company VAT Regd no if any , using of currency symbols as Rs. the financial year of company.



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Total No. of Questions – 18

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OOPS AND JAVA
Paper II
(English Version)

Time: 3 Hours **Max. Marks : 50**

SECTION A **10 X 2 = 20**

Note: (i) Answer ALL questions.
(ii) Each question carries TWO marks.

1. Define oops.

A) OOP stands for Object Oriented Programming. It is a programming concept based on "objects", which can contain data, in the form of fields and code, in the form of procedures.

2. What are Identifiers?

A) IDENTIFIER: *Identifiers* are the names of variables, methods, classes, packages and interfaces. Identifiers must be composed of letters, numbers, the underscore_ and the dollar sign $. Identifiers may only begin with a letter, the underscore or a dollar sign.

3. What is Break statement?

A) break: If the break statement encountered in a loop, the loop immediately exited and the program continues with the statement immediately following the loop.

Syntax: break;

4. What is String Array?

A) string array: "String represents a sequence of characters". We can handle these strings by using character array.

Syntax:

String str [ ] = new String [6];
The str of size 6 to hold three string constants.

5. Define Nested loop.

A) Nested loops: A loop within another loop is called nested loop.

6. What is Interface?

A) Interface: Interface is a kind of class that contains final fields and abstract methods. Interfaces does not specify any code to implement these methods and data fields contains only constants.

Defining an Interface:

Syntax: interface interface_name {
Variable Declaration;
Method Declaration;
}

7. What is Constructor?

A) CONSTRUCTOR: A constructor initializes an object when it is created. It has the same name as its class and is syntactically similar to a method. However, constructors have no explicit return type.

8. What is Exception?

A) Exception: An Exception is an event or a problem, which occurs or rises during the execution of a program. It is a runtime error thrown by a class or method reporting an error in the code.

9. What is Multi – Threading?

A) Multithreading: Multithreading is a programming concept in which a program or a process is divided into two or more sub programs or threads that are executed at the same time in parallel. Multiple threads can run concurrently in a single program.

10. Write any 4 HTML tags.

A)

TAG	FUNCTION
<HTML> </HTML>	Signifies the beginning and end of a HTML file
<HEAD. </HEAD>	This tag may include about the web page ,usually tag with in it
<TITLE> </TITLE>	The text contained in it will appear in the title bar of the browser.
<BODY> </BODY>	This tag contains the main text of the web page. It is the place where the <APPLET> tag is declared.
<H1> … </H1>	Header tags used display
<H6>….</H6>	Headings <H1> creates the largest font header
<CENTER> … </CENTER>	Places the text contain in it at the centre of the page
<APPLET>…</APPLET>	It declares the applet details as it attributes.
<PARAM>	This tag is placed inside the <APPLET> tag and it hold the user defined parameter.
<B>...</B>	Text between these tags will be displayed in bold type.
<U>…</U>	Text between these tags will be displayed in the underline style.
<I>…</I>	Text between these tags will be displayed in italic type.
 	Like break tag these will skip a line. Does not have an end tag.
<P>…</P>	Paragraph tag.
</MG>	This tag declares attributes of an image displayed.
<HR>	Draws horizontal line.
<A>…</A>	Anchor tag used to add hyperlinks.
<FONT>…</FONT>	We can change the colour and size of the text that lines in between these tags using attributes.

SECTION – B **5 X 6 = 30**

Note: (i) Answer ANY FIVE questions.
(ii) Each question carries SIX marks.

11. Explain the Web – Browsers used to Java.

A) Web Browsers: Web browsers are used to pass through the information found on the net. They allow us to retrieve information across the internet and display it using the HTML.
Example of Browsers:

Hot Java
Chrome Opera
Mozilla Firefox
Internet Explorer

Hot Java : It is the web browser from Sun Micro System that enables to the display of interactive content on the using the java language. It demonstrates the capability of Java PL. Hot java is currently available for the SPARC/Solar platforms as well as windows 95, NT, XP.

Chrome Opera : Opera is a web browser and internet suite developed by opera software. It began in 1994.

Mozilla Firefox : It is another popular browser developed by Micro soft forWindows-95, NT and XP work stations.
Both the Navigator and explorer used tool bars, icons menus and dialog boxes for easynavigation. Explorer uses just in time compiler; which increase the speed of execution.

Netscape navigator : This web browser from Netscape communication corporation is a general – purpose browser that can run java applet. It is available for Windows -95, NT,XP, Solar and apple Macinthosh. It is one of the mostly used browser. The main features is displaying the information about downloading process and indication of numbers of bytes downloaded. It is also support Java script used in HTML document.

12. Explain the Arithmetical Operators in Java.

A) Arithmetic Operators: Arithmetic Operators are used to perform arithmetic operations on two operands. These will return result in the form of value.

Ex: a and b are integer variables and assigned a=8 and b=5 then

Operator	Purpose	Arithmetic Expression	Result
+	Addition	a+b	13
-	Subtraction	a-b	3
*	Multiplication	a*b	40
/	Division	a / b	1
%	Remainder after integer division	a%b	3

13. Write if and if ..else with examples.

A) if statement: if statement is used to control the flow of execution of statements.

Syntax: **if (test expression) {**
Statement _block;
}
statement x;

The statement _block may be a single statement or multiple statements. If the test expression is 'true', the statement_block will be executed, otherwise the statement block will be skipped and the control flows to the immediately following the statement block.
Ex: if (a>b) big = a;

if …… else statement: The **if…..else** statement is an extension of the simple **if** statement. If the test expression is true the statements under if will be executed else statements under else will be executed.

Syntax: **if (test expression) {**
true block statements;
}
else {
false block statements;
}

Ex:
```
if (a>b)
        big = a;
else
        big = b;
```

14. Write a Java Program to print 1 to n.

A) Program:

```
//Program to print 1 to n numbers
import java.util.Scanner;
class Nnumbers{
public static void main(String args[]){
int n,i;
System.out.println("enter an integer");
Scanner in = new Scanner(System.in);
n= in.nextInt();
i=1;
do {
System.out.println(i);
i=i+1;
}while(i<=n);
}
}
```

Compilation: javac Nnumbers.java
Execution: java Nnumbers

```
enter an integer      11
1
2
3
4
5
6
7
8
9
10
11
```

15. Explain the Polymorphism with example.

A) Polymorphism: Polymorphism means the ability to take more than one form is called Polymorphism.

We can store all the objects of extended classes in to variable of parent class. The only possible way to access an object is through a reference variable. A reference variable can be only one type. Once declared the type of reference variable cannot be changed.

The reference variable can be reassigned to other objects provided that it is not declared final. The type of the reference variable would determine the methods that it can invoke on the object.

A reference variable can refer to any object of its declared type or any subtype of its declared type. A reference variable can be declared as a class or interface type.

Ex:

```
class Box{
    int w,h;
    void info( ){
    System.out.println("This is a simple box");
    System.out.println("width = "+w+"height="+h);
    }}
    class woodenBox extends Box{
    int life;
    void info( ){
    System.out.println("This is a wooden box");
    }}
    class SteelBox extends Box{
    int wg;
    void info( ){
    System.out.println("This is a steel box");
    }}
    class LargewoodenBox extends woodenBox{
    void info( ){
    System.out.println("This is a Huge wooden Box");
    }}

    class BoxDemo{
    public static void main(String ary[ ]){
    Box x;
    Box b1= new Box( );
    woodenBox wb=new woodenBox( );
    SteelBox s1=new SteelBox( );
    LargewoodenBox p1=new LargewoodenBox( );
    b1.info( );
    wb.info( );
    s1.info( );
    p1.info( );
}}
```

Output:

```
This is a simplebox
Width=0 hieght=0
This is a wooden box
This is a steel box
This is a Huge wooden Box
```

16. Explain to create own package with example.

A) Steps involved in creating our own package are:

1) Declare the package at the beginning of a file using the form
   package <package_name>;
2) Define the class that is to be put in the package and declare it **"public'.**
3) Create a subdirectory under the directory where the main source files are stored.
4) Store the listing as the classname.java file in the subdirectory created.
5) Compile the file. This creates " **.class** " file in the subdirectory.

Note: The subdirectory name must match the package name exactly.

Ex:

```
package package2;
public class ClassX
{
  public void displayX( )
  {
    System.out.println("Class A");
  }
}
```

17. Explain types of Errors in Java.

A) Compile Time errors: A compile-time error happens when the program is being compiled. Generally, Compile-time errors are syntax errors, and they are caught by the compiler.

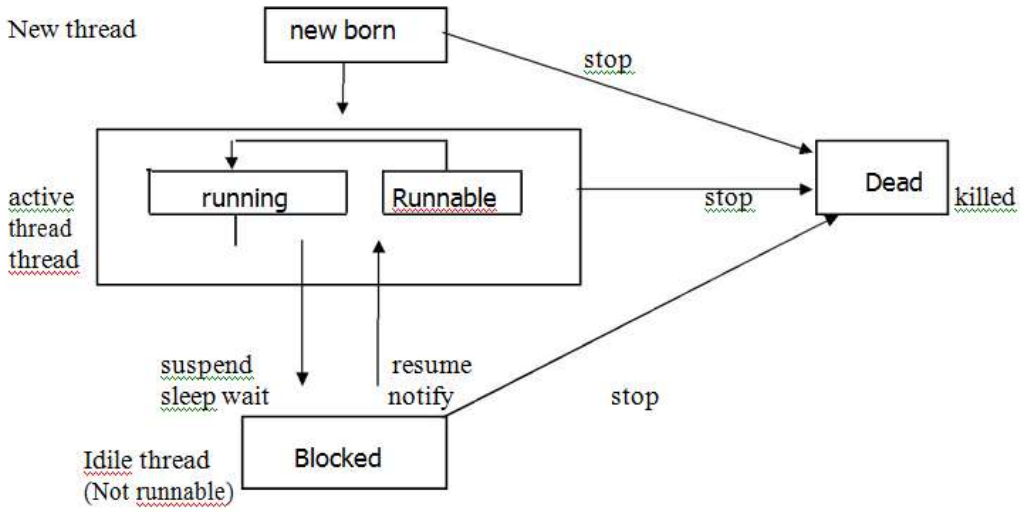
Run time errors: Run-time errors occur at run-time. Generally, the program compiles but does not run correctly. Example, insufficient memory to store something or inability of the microprocessor to execute some statement comes under run-time error.

Logical Errors: The programmer might be using a wrong formula or the design of the program itself is wrong. Logical errors are not detected either by Java compiler or JVM. The programmer solely responsible for them.

18. Explain the life cycle of the thead.

A) The life cycle of the thread :-During the life time of a thread, a thread is always is one of five states. It can move from one state to another

- New born state
- Runnable state
- Running state
- Blocked state
- Dead state



1) The new born state : When a thread's called it is in the newborn state, that is, when it has been crated and is not yet running. In other words a start() method has not been invoked on this thread. In this state system resources are not yet allocated to the thread. When a thread is in new born state, calling any method other than starts method cases Illegal Thread State Exception.

1. **The runnable state :**A thread is the runnable state is ready for execution but is not being executed currently. Once a thread is in the runnable state, it gets all the resources if the system and moves on to the running state. All runnable threads are in a queue and wait for CPU access. When the start() method is called on the new born thread, it will be runnable state.

2. **Running state :**After the runnable state, if the thread gets CPU acces, it moves in to the runnable state.
   The thread will be the running state unless one of the following things occur.
   It dies
   It gets blocked to the input/output It calls sleep()
   It calls wait() It calls yield()

   The blocked state :-
   A thread can enter the blocked state when one of the following 5 conditions occurs.

   When sleep() is called When suspend () is called When wait is called
   The thread is waiting for monitor
   The dead state :-
   A thread goes into the dead state in 2 ways
   If it run() method exits. When it finished execution
   A stop() method is invoked. Naturally an uncaught exception. The stop() method kills the thread. A thread in the dead state can not be executed further.

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RELATIONAL DATABASE MANAGEMENT SYSTEM (RDBMS)
Paper II
(English Version)

Time: 3 Hours **Max. Marks : 50**

SECTION A **10 X 2 = 20**

Note: (i) Answer ALL questions.
(ii) Each question carries TWO marks.

1. What is DBMS?
A) Database: A database is a collection of logically related information that is organized in a systematic manner so that it can easily be accessed, managed, and updated.

2. Expand the terms DDL, DML, DCL.
A) DDL: Data Definition Language
DML: Data Manipulation Language
DCL: Data Control Language

3. What is weak entity and strong entity?
A) Weak Entity: An entity set that does not have sufficient attributes to form a primary key is termed a weak entity set.

Strong Entity: An entity set that has a primary key and does not depending on other entity set to form a primary key is termed a strong entity set.

4. What is a tuple?
A) Tuple: Tuple is a row or record of a table .

5. What is a primary key?
A) Primary key: The Primary key of a relational data base table is a column name which uniquely identifies each record in the table.

6. What are fundamental operations in Relational Algebra?
A) The fundamental operations in the relational algebra are :
SELECT, PROJECT, UNION, SET DIFFERENCE, CARTESIAN PRODUCT AND RENAME, etc.

7. What are different DML commands.
A) DML commands: Insert, select, delete & update

8. What is sub query?
A) Nesting of queries, one within another, is termed as subquery.

9. What is system?

A) System: System is an interacting elements joined together for a common objective. The word "System" is derived from the greak word "Systema" which means an organized relationship.

Ex: Financial accounting system, net Banking system etc.,

10. What is system analysis?

A) System Analysis: System analysis is, process of gathering and interpreting facts, diagnosing problems and using the information to recommend in the improvement of the system.

SECTION – B **5 X 6 = 30**

Note: (i) Answer ANY FIVE questions.
(ii) Each question carries SIX marks.

11. What are the advantages of DBMS over file processing system.

A) Advantages of DBMS over File Processing system are

1. Provides for mass storage of relevant data.
2. Make easy access of the data to user.
3. Allows for the modification of data in a consistent manner.
4. Allows multiple users to be active at a time
5. Eliminate or reduce the redundant data.
6. Provide prompt response to the users request for data.
7. Supports Backup and recovery of data.
8. Protect data from physical hardware failure and unauthorized access.
9. Constraints can be set to database to maintain data integrity.

(OR)

The data base approach offers a number of potential advantages compared to traditional file processing system. The primary advantages are:

1. Program data independence
2. Minimal data Redundancy
3. Improved data consistency
4. Improved data sharing
5. Increased productivity of application development.
6. Enforcement of standards
7. Improved data Quality
8. Improved data accessibility and responsibility.
9. Reduced program maintenance.

1.**Program data Independence:** The separation of data description of metadata from the application programs that use for data is called data independence.

2.**Minimal data redundancy:** The data base approach does not eliminate redundancy entity, but it allows designers to carefully control the amount of redundancy.

3.**Improved data consistency:** By eliminating data redundancy we can greatly reduce the for data inconsistency.

4.**Improved data sharing:** The data is designed as a shared corporate resource authorized internal and external users and granted the permission to use data base and each user is provided one or more user view to facilitate this use.

5.**Increased productivity of application development:** The major advantages of the data base approach are that greatly reduces the coast and time for developing new business application.

6.**Enforcement standards:** These standards will include naming convention, data quality standards, a number of uniform processorns for accessing, updating protecting the data.

7.**Improved data quality:** The database approach provides a number of tools and processes to improve data quality. Two of the more important are constraints and cleanup.

8.**Imporved data accessibility and responsibility:** With relational database the users can experience without programming knowledge to retrieve and display the data using SQL.

9.**Reduced Program Maintenance:** Stored data must be changed frequently for a variety of reasons new data item types are added, data formats are changed and so on.

12. What are the functions of DBA?

A) The functions or responsibilities of DBA includes

1. Schema Definition.
2. Storage Structure and access method definition.
3. Schema physical Organization and Modification.
4. Granting of authorization for data access .
5. Routine maintenance.

1. Schema Definition: The DBA creates the original database schema by executing a set of definition statements in the DDL.

2.Storage structure and access Method Definition: DBA will decide the actual storage structure and different access methodologies for the database.

3.Schema Physical Organization and Modification: The DBA carries out changes to the schema and physical organization to reflect the changing needs of the organization, are to alter the physical organization to improve performance.

4. Granting of Authorization for data access: By granting different types of authorization, the database administrator can regulate which of the database various users can access.

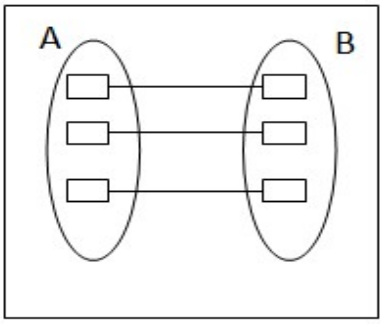
5. Routine Maintenance: DBA is the final authority to regulate the daily activities.

13. Explain the mapping constraints with neat diagram.

A) There are 4 types of mapping constraints.

1. ONE – to – ONE relationship
2. MANY – to – ONE relationship
3. ONE – to – MANY relationship
4. MANY – to – MANY relationship

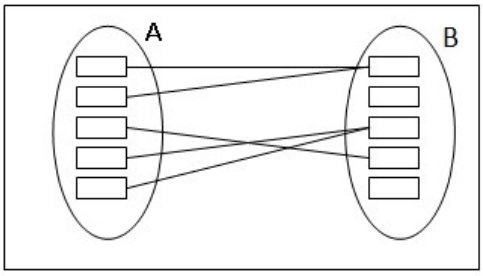
1. **ONE – to – ONE relationship:** An entity in A is associated with at most one entity in B , An entity in B is also associated with at most one entity in A.



ONE – to – ONE relationship

Example : Relationship between the entities principal and college. i.e., Principals can lead a single college and a principal can have only one college.

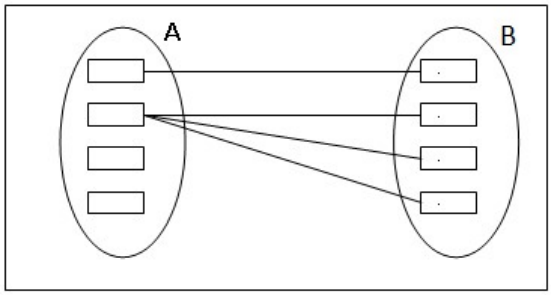
2. Many – to – One relationship: An entity set in A is associated with at most one entity in B, An entity in B however can be associated with any number of entities in A.



Many – to – One relationship

Example: Relationship between the entities Districts and state .i.e. many districts belong to a single state but many states cannot belong to single district.

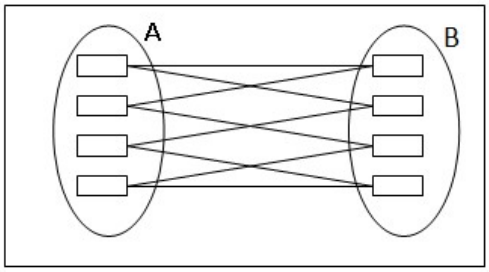
3. ONE – to - MANY relationship: An entity set A is associated with any number of entities in B. An entity in B, however can be associated with at most one entity in A.



ONE – to - MANY relationship

Example: Relationship between the entities class and student i.e., a class can have many students but a student cannot be in more than one class at a time.

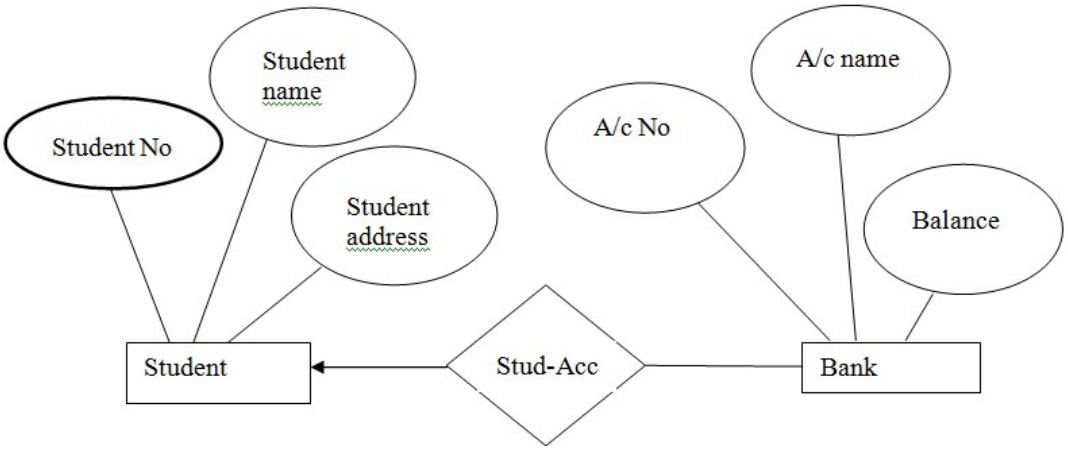
4. MANY – to – MANY relationship: An entity set A is associated with any number of entities in B and an entity set in B is associated with any number of entities in A.



MANY – to – MANY relationship

Example: Relationship between the Entities College and course .i.e. a college can have many courses and course can be offered by many colleges.

14. Draw an ER diagram by showing the relationship between a student and bank.



15. What is key? Write about types of keys.

A) Key: The attribute value which is useful to identify and distinguish the relationships among several entities.

The keys can be categorized in to

1. Super Key: A **Super key** is a set of one or more attributes that, taken collectively; allow us to identify uniquely an entity in the entity set. For example, the 'student_id' attribute of the entity set student is sufficient to distinguish one student entity from another. Thus, 'student_id' is a super key

2. Candidate Key: A super key with minimal values is called a candidate key. A super key that does not contain a subset of attributes, that is itself super key.

3. Primary key: The Primary key of a relational data base table is a column name which uniquely identifies each record in the table. It cannot contain NULL entries.

4. **Secondary key** : An attribute (or) Combination of attributes used strictly for data retrieval purposes.

5. **Foreign key** : An attribute or Combination of attributes in one table whose values must either match the primary key in another table or be NULL.

16. Explain any six Codd rules.

A) Edgar F. Codd, proposed thirteen rules (numbered zero to twelve) and said that if a Database Management System meets these rules, it can be called as a Relational Database Management System.

1) **0 – Single Foundation Rule**
2) **1 – Information Rule**
3) **2 – Guaranteed Access**
4) **3 – Systematic Treatment of NULL values.**
5) **4 – Active online catalogue**
6) **5 – Comprehensive data sublanguage.**
7) **6 – View updation Rule**
8) **7 – High level UPDATE, INSERT, DELETE**
9) **8 – Physical Data Independence**
10) **9 – Logical Data Independence**
11) **10 – Integrity Independence**
12) **12 – Non – Subversion**

1) **Single Foundation Rule:** RDBMS must manage every aspect of the database entirely through using its relational capabilities without using any external language.

2) **Information Rule:** The information can be represented in one and only one way that is tables also known as relations. This rules emphasis fact that the information can be stored in rows and columns.

3) **Guaranteed Access:** The access to table follows the sequence of table name, tuple attribute. This also states that at the intersection or each column and row there should be one and only one value a data. The value of a data must be logically addressable by using combination of data name, column name and value. Every step of data access is identified where the access to the work area involve qualifying the user name and password.

4) **Systematic Treatment of NULL values:** One should be able to operate with NULL values. The operation with the NULL values should be performed using single command. The treatment of NULL should be independent of data type. NOT NULL value should be provided if gives of these NULL values are included there should force no problems for applications using and manipulating them.

5) **Active On – Line catalogue:** RDBMS should maintain data dictionary tables to keep tack of current state of the database. These are special tables which keep track of the current state of the database. These tables contains information about table techniques, views column definitions synonyms and every other type of objects updated automatically.

6) **Comprehensive Data Sub Languages:** RDBMS should have comprehensive Data Definition Language, Data Control Language, Data Manipulation Language. All the operation on database should be supported by the data language which is path and parcel of the package.

7) **View Updation Rule:** One can feel that any view can be updated, but in real practice one cannot update all views as some views are based on aggregating and virtual columns which make them impossible to be update.

8) **High Level UPDATE, INSERT, DELETE:** An RDBMS must be capable of doing more than just retrieving the relational data. It should able to do insert, Update and Delete data items with the use of single command for each operation. It should able to do this operation are more than one row also.

9) **Physical Data Independence:** The recording on the data should be left to the description of the type of system used that is whenever data is retrieved it should be independent of the storage structure and representation a change in the storage strategy should no effect the performance of data.

10) **Logical Data Independence:** The data should be independent of logic involved in programming if at all the database design is changed then the programs should be independent of these changes. That is once the programs are committed by effort should not effect by this effort should not be effect should logic depending level.

11) **Integrity Level Independence:** The data available should force no limitations interms of integration. The limits of the system used should only be taken into consideration. The integrity constraints specific to particular relational database must definable in relational data sub-language and storage in the data dictionary not in application programs.

12) **Distribution Independence:** This is one of the most popular and important aspect for any RDBMS. This implies fact the system should look like a centralized system to the user even if it is distributed across. It is important as the user should face difficulties. While accessing data, if it is at remote server the RDBMS should not take care of it imposing no problems to the user.

13) **Non – Subversion Rule:** Incase if RDBMS users help of any low language it must not bypass any integrity rules or constraints of the relational language thus any operation must be governed by the relation rules.

17. Explain any four DML commands with examples.

A) ***Data Manipulation Language (DML):*** DML is used to perform typical manipulations like retrieval insertion and deletion and modification of the data the commands are as follows

a) **INSERT**
b) **DELETE**
c) **UPDATE**
d) **SELECT**

INSERT: INSERT command is used to insert data values in to a database table.

Syntax: INSERT into table_name (coumn_name, column_name) values (expression) **;**
Example: SQL> INSERT into emp (emp_id, emp_name, emp_sal) values (E1001, ‘sastry’, 2000)**;**

DELETE: DELETE command is used to delete the data from the database table.

Syntax: DELETE from table_name WHERE <search condition> **;**

Example: SQL>DELETE from emp WHERE emp_sal < 5000;

UPDATE: "UPDATE" command is use to change or modify database table. We can perform UPDATE operation in two ways.

a) To update all the rows / records of a table.
b) To update a single or set of records of a table.

Syntax: UPDATE table_name SET column_name = expression, column_name = expression WHERE column_name = expression;

Example:
SQL> UPDATE emp SET sal = 3200 WHERE ename = 'smith';

SELECT: "SELECT" command is used to retrieve data from a database table. We can SELECT the data from a table for two purposes.

a) To select all rows / records of a table.
b) To select specific records of a table.

Syntax:

a) SELECT * from table_name;
b) SELECT column_name, column_name from table_name WHERE search_condition;

Example:

a) SQL> SELECT * from emp;
b) SQL> SELECT epic , emp_name from employee WHERE dept='production' **;**

18. Explain different stages of software development life cycle in detail.

A) System Development Life Cycle :

The stages involved during System Development Life Cycle are ::

1. Recognition of need
2. Feasibility study
3. Analysis
4. Design
5. Implementation
6. Post implementation and maintenance

1. **Recognition of need**: This gives a clearer picture of what actually the existing system is. The preliminary investigation must define the scope of the project and the perceived problems, opportunities and directives that triggered the project.

2. **Feasibility Study**: The goal of feasibility study is to evaluate alternative system and to purpose the most feasible and desirable system for development. In the process of feasibility study, the cost and benefits are estimated with greater accuracy. If cost and benefit can be quantified, they are tangible ; if not , they are called intangible.

3. **System Analysis:** System analysis is an in-depth study of end user information needs that produces functional requirements that are used as the basis for the design of a new information system.

4. **System Design**: System design can be viewed as the design of user interface, data, process and system specification .

5. **System Implementation:** Implementation is the stage where theory is converted into practical. The implementation is a vital step in ensuring the success of new systems. Even a well designed system can fail if it is not properly implemented.

6. **Post Implementation and Maintenance**: Once a system is fully implemented and being operated by end user, the maintenance function begins. Systems maintenance is the monitoring, evaluating and modifying of operational information system to make desirable or necessary improvements.

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2229

Total No. of Questions – 18

Total No. of Printed Pages – 2 **Regd.No.**

DATA COMMUNICATION AND COMPUTER NETWORKS
Paper II
(English Version)

Time: 3 Hours **Max. Marks : 50**

SECTION A **10 X 2 = 20**

Note: (i) Answer ALL questions.
(ii) Each question carries TWO marks.

1. Define Bandwidth.

A) Bandwidth: Bandwidth means the amount of data that can be transferred from one point to another in a given time period (usually a second). Bandwidth is usually expressed in bits per second (bps) or Bytes per second(Bps).

2. What is Internet?

A) Internet: The **Internet** is the publicly available worldwide system of interconnected computer networks that transmit data by packet switching over the Internet Protocol (IP). It is made up of thousands of other, smaller business, academic, and government networks.

3. What is WWW?

A) WWW: The World Wide Web (WWW), commonly known as the Web, is an information system where documents and other web resources are identified by Uniform Resource Locators (URLs, such as https://example.com/), which may be interlinked by hypertext, and are accessible over the Internet.

4. Define Server and Client.

A) **Server**: A network server is a computer designed to process requests and deliver data to other (client) computers over a local network or the Internet.
Client: A client is a computer that accesses a service made available by a server.

5. What is an E – Mail?

A) E-mail (Electronic Mail) is an electronic version of sending a letter. You can send e-mail from your computer at any time of the day to any address around the world and your electronic letter will arrive at its destination seconds after you send it, even if the receiver lives on the other side of the world.

6. What is an Attachment?

A) An attachment is simply an additional file sent with an email message. An attachment can be an image file, a Word document, or one of many other supported file types.

7. Write advantages of Internet?

A) Internet provides E-Mail , information, online banking , chatting, buy or sell products Downloading softwares etc.,

8. What is Virus?

A) A Virus is a piece of software that can infect other programs by modifying them; the modification includes a copy of the virus program, which can then go on to infect other programs.

9. What is Trouble Shooting?

A) Trouble shooting is a process in which certain measures and processes are collectively used to identify and fix problems which are encountered with in a NETWORK or any Hardware device. Trouble shooting can be both **manual** and **automatic.**

10. What is Mother Board?

A) Mother Board: Mother Board is the major component which handles entire communication between hardware components inside the PC.

SECTION – B **5 X 6 = 30**

Note: (i) Answer ANY FIVE questions.
(ii) Each question carries SIX marks.

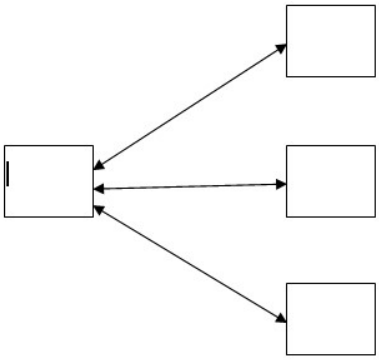
11. Explain different types of Data Communications.

A) There are two types of data communications

1. Point to point communication
2. Point to multipoint communication

1.Point-to-Point Communication: point-to-point connection refers to a communications connection between two nodes or endpoints. An example is a telephone call, in which one telephone is connected with one other, and what is said by one caller can only be heard by the other.

2. Point-to-multipoint communication: Point-to-multipoint (PMP) communication refers to communication that is accomplished in the form of one-to-many connections, offering several paths from one single location to various locations. Point-to-multipoint is generally abbreviated as PTMP, P2MP or PMP. Examples of point-to-multipoint communications systems are radio and television broadcasting.



12. Explain different types of Computer Networks.

A) Different types of computer networks

Depending upon the geographical area covered by a network, it is classified as:

- Local Area Network (LAN)
- Metropolitan Area Network (MAN)
- Wide Area Network (WAN)
- Personal Area Network (PAN)

LAN(Local Area Network):A LAN is a network that is used for communicating among computer devices, usually within an office building or home.

- Is limited in size, typically spanning a few hundred meters, and no more than a mile
- Is fast, with speeds from 10 Mbps to 10 Gbps
- Requires little wiring, typically a single cable connecting to each device
- Has lower cost compared to MAN's or WAN's

MAN(Metropolitan Area Network):

- A MAN is a large computer network that usually spans a city or a large campus.
- A MAN is optimized for a larger geographical area than a LAN, ranging from several blocks of buildings to entire cities.
- A MAN might be owned and operated by a single organization, but it usually will be used by many individuals and organizations.
- A MAN often acts as a high speed network to allow sharing of regional resources.
- A MAN typically covers an area of between 5 and 50 km diameter.
- Examples of MAN: Telephone company network that provides a high speed DSL to customers and cable TV network.

WAN(Wide Area Network):

- WAN covers a large geographic area such as country, continent or even whole of the world.
- A WAN is two or more LANs connected together. To cover great distances, WANs may transmit data over leased high-speed phone lines or wireless links such as satellites.
- Multiple LANs can be connected together using devices such as bridges, routers, or gateways, which enable them to share data.
- The world's most popular WAN is the Internet.

PAN(Personal Area Network): A personal area network (PAN) is a computer network used for communication among computer devices, including telephones and personal digital assistants, in proximity to an individual's body

- A PAN is a network that is used for communicating among computers and computer devices (including telephones) in close proximity of around a few meters within a room.
- It can be used for communicating between the devices themselves, or for connecting to a larger network such as the internet.
- PAN's can be wired or wireless.

- The devices may or may not belong to the person in question. The reach of a PAN is typically a few meters.

Home Area Network (HAN): A **h**ome **a**rea **n**etwork (**HAN**) is a network contained within a user's home that connects a person's digital devices, from multiple computers and their peripheral devices to telephones, VCRs, televisions, video games, home security systems, smart appliances, fax machines and other digital devices that are wired into the network.

Metropolitan Area Network: It was introduced in 1980s. It is also known as MAN and uses the same technology as LAN. It is developed to extend its coverage over the entire city. It can be the connection of number of LANs into a larger network or simply it can be a single cable. It is mainly handled and operated by single private company.

Campus network: A campus network is a computer network made up of an interconnection of local area networks (LAN's) within a limited geographical area. The networking equipments (switches, routers) and transmission media (optical fiber, copper plant, Cat5 cabling etc.) are almost entirely owned (by the campus tenant / owner: an enterprise, university, government etc.).

Enterprise private network: An enterprise private network is a network build by an enterprise to interconnect various company sites, e.g., production sites, head offices, remote offices, shops, in order to share computer resources.

Backbone network: A Backbone network (BBN) is a part of a computer network communications that interconnects different pieces of network and providing a path for the exchange of information between different LANs or sub networks. A large corporation that has many locations may have a backbone network that ties all of the locations together.

Global area network (GAN): A global area network (GAN) is a network used for supporting mobile communications across an arbitrary number of wireless LANs, satellite coverage areas, etc. The key challenge in mobile communications is handing off the user communications from one local coverage area to another local coverage area.

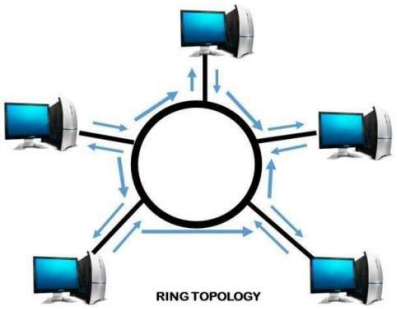
13. Explain about Network Topologies.

A) Some common network topologies include ring, bus, star, tree and mesh configurations.

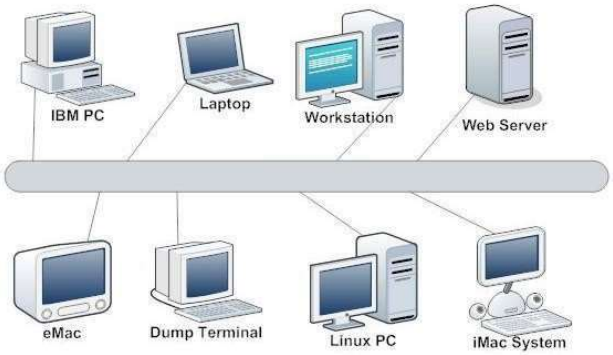
These topologies are defined below:

Ring Topology: In this topology,

- Devices are connected from one to another to form a ring shape.
- Each host is connected to the next and the last node is connected to the first.
- A data token[1] is used to grant permission for each computer to communicate.

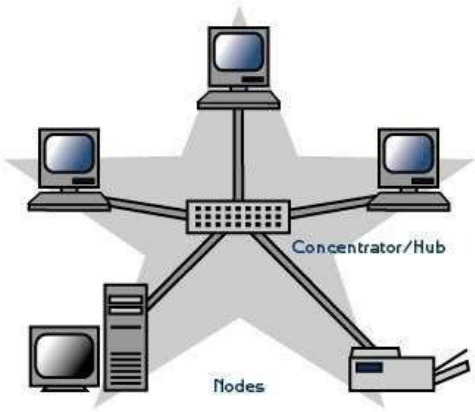


Bus Topology: In this topology, all hosts are connected to the backbone cable in a linear fashion

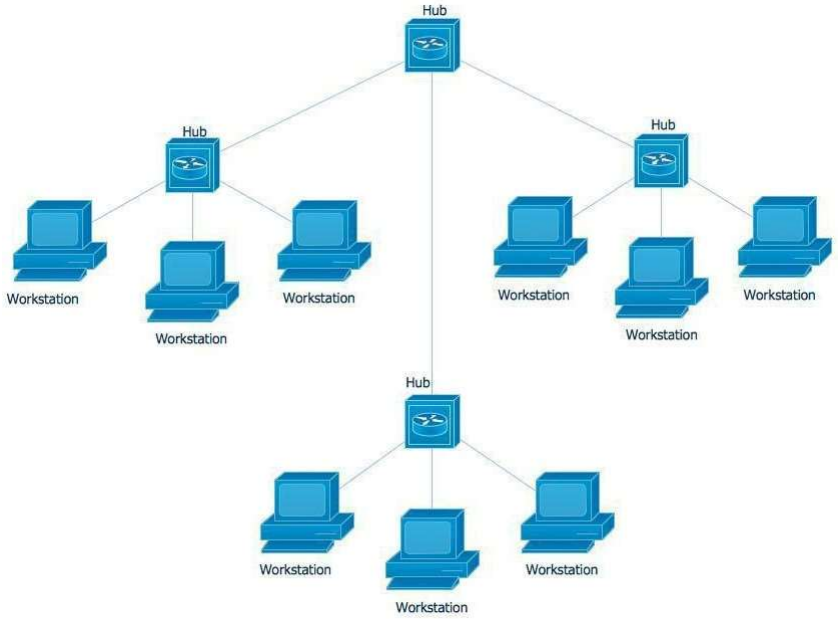


Star Topology: In this topology,

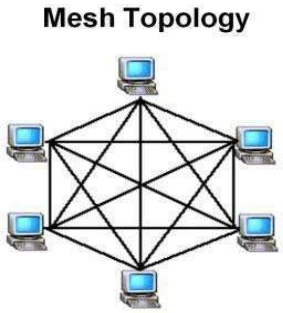
- All hosts are connected to a single point of concentration.
- Usually uses a hub[3] or switch[4] as a center node.
- Range limits are about 100 meters from the hub
- Data on a star network passes through the hub or concentrator before continuing to its destination.



Tree Topology: One "root" node connects to other nodes, which in turn connect to other nodes, forming a tree structure. Information from the root node may have to pass through other nodes to reach the end nodes.



Mesh Topology: In this topology, Each host is connected to all the other hosts.



14. Explain in detail about V – SAT.

A) A very small aperture terminal (VSAT), is a two-way satellite ground station or a stabilized maritime V-SAT antenna with a dish antenna that is smaller than 3 meters. The majority of VSAT antennas range from 75 cm to 1.2 m. Data rates typically range from 56 kbit/s up to 4 Mbit/s. VSATs access satellite(s) in geosynchronous orbit to relay data from small remote earth stations (terminals) to other terminals (in mesh topology) or master earth station "hubs" (in star topology).

VSATs are most commonly used to transmit narrowband data (point of sale transactions such as credit card, polling or RFID data; or SCADA), or broadband data (for the provision of satellite Internet access to remote locations, VoIP or video). VSATs are also used for transportable, on-the-move (utilizing phased array antennas) or mobile maritime communications.

15. Explain any three web browsers.

A) Web Browsers:

1. Internet Explorer: It was developed by Microsoft in 1994 and released in 1995 as a supportive package to Microsoft Windows line of operating systems. According to statistics, its usage share from 1999 to 2003-04 was around 95%. Microsoft occasionally releases updates for the previous versions of IE, which have some enhanced capabilities. IE has come up a preview release of Internet Explorer 11.

Features: There are regular Microsoft updates that IE supports. Favicon allows an image to be used as a bookmark. It supports Integrated Windows Authentication. It's icon is as follows.

2. Mozilla Firefox: It is owned by Mozilla Corporation and was the result of an experimentation. 'Mozilla Firefox' was officially announced in February 2004. It was earlier named Phoenix, Firebird, and eventually Firefox. It is the second-most famous browser after Internet Explorer, as there were around 100 million downloads within a year of its release. Until November 2008, 700 million downloads were recorded.
Features: As it is an open source software, it allows everyone to access the code. It supports tabbed browsing that allows the user to open multiple sites in a single window. Session storage is also an important feature of Firefox, which allows the user to regain access to the open tabs after he has closed the browser window. It's icon is as follows.

3. Google Chrome: This web browser was developed by Google. Its beta and commercial versions were released in September 2008 for Microsoft Windows.

Features: The main standout feature is the malware and phishing warning that the browser suggests when the user wants to browse a site. Also, there is a user tracking option available with Chrome. It's icon is as follows.

16. Write various advantages and disadvantages of E – Mail.

A) <u>Advantages of E-mail</u>

1. **Fast** - Messages can be sent anywhere around the world in an instant .
2. **Inexpensive** - Transmission usually costs nothing, or at the most, very little .
3. **Simple** - Easy to use, after initial setup.
4. **Efficient** - Sending to a group can be done in one step .
5. **Versatile** - Pictures, power-points or other files can be sent too.

6. **Printable** – The hand copy is easy to obtain. We can correspond and save e-mail message and also we get electronic copy of message.

Disadvantages of E-mail

1. Emails may carry viruses. These are small programs that harm your computer system. They can read out your email address book and send themselves to a number of people around the world.
2. Many people send unwanted emails to others. These are called spam mails. It takes a lot of time to filter out the unwanted emails from those that are really important.
3. Emails cannot really be used for official business documents. They may be lost and you cannot sign them.
4. Your mailbox may get flooded with emails after a certain time so you have to empty it from time to time.

17. Explain the concept of various trouble shoots in printers.

A) A **printer** is an external hardware output device that takes the electronic data stored on a computer or other device and generates a hard copy of it.

Trouble Shooting A Printer:

When a printer is unable to print, there may be a possibility that either the printer is experiencing a hardware or software problem. Before testing the software, it is always recommended that the printer is tested for hardware issues first.

Testing Hardware :

1. Check that paper is loaded and that there are no paper jams.
2. Check the cable connections. Both the power cable and data cables (e.g., USB cable) going from printer and to your computer.
3. Verify that the printer power indication light is turned.
4. Verify that the printer has no flashing lights or Red or Orange lights. Having red, orange, or any other flashing lights indicates malfunctioning of printer.
5. Run a self-test on the printer. Running a self-test should print a basic page of information indicating the printer is physically working. Your users manual should have the instructions for printing a self-test. If your printer does not print a self-test, it's a good possibility that there is a defect or misconfiguration with your printer, and you should contact the printer manufacturer.

Testing Software Windows users:

1. If possible, make sure your printer can print using the above hardware tests.

2. Install the printer software provided with your printer. If no software was provided with your printer, see the printer driver's page for a listing of printer drivers. Drivers are required for your printer to properly work with the operating system.

3. Click Start, Settings, and Printers. Within the printer's window, verify that your printer manufacturer and model is listed.

4. Print a test page by right-clicking the printer icon and then click the Properties option and click print test page. If the test page does not print, download the latest drivers from your printer manufacturer. For a list of printer drivers, see our printer driver's index.

5. If the page prints successfully, get back into the printers window, right-click the printer and ensure that there is a check next to Set as default. Newer versions of Windows also show a check next to the printer icon once it has been set as the default printer.

6. Once the printer is set as default, click Start, Run, type notepad, and press Enter. In Notepad, type a test message and click File and Print. If the printer also prints successfully

from this program, but you are still unable to print from another program, it is likely that program has an issue and not your printer.

18. Write about Internet Security.

A) Internet security is a protection to the computer and files stored in it , from any harmful and malicious spyware through internet.. There are many antivirus software available to protect computers and files.

Malicious software and antivirus

Malicious software is software that is intentionally inserted in a system for harmful purpose. There are different types of malicious programmes exist in the internet. Those are viruses, Trojan horse, worms, etc.,

Virus:A software program written to disrupt computer systems and to destroy data—viruses are the most well known Internet security threat.

Worms: Similar to viruses but much more dangerous. They spread rapidly by accessing your email address book and automatically forwarding themselves to every address it contains.

Trojan Horses: It is actually designed to cause loss or theft of computer data and to destroy computer systems. They usually arrive as email attachments or bundled with other software. Some give attackers unrestricted access to your computer anytime you're online, allowing file transfers, adding or deleting of files and programs, and taking control of your mouse and keyboard.

Phishing:A trick where Internet criminals send out false emails in the name of a legitimate organization in order to make victims into sending personal information back to be used in identity theft crimes.

Hacking: The persons making hawking are called Hackers. They are experts in computer and Internet skill levels sufficient enough to break security settings on personal computers and servers over the Internet. Some hackers do it for recreation, others for malicious intent.

Antivirus software: Antivirus software is a computer program that detects, prevents, and takes action to disarm or remove malicious software programs, such as viruses and worms.

To help prevent the most current viruses, you must update your antivirus software regularly. You can set up most types of antivirus software to update automatically.