

From,
Department of BCA,
Vivekanand College,
(An Empowered Autonomous
Institute),
Kolhapur.
Date: 09/06/2025

To,
The Principal,
Vivekanand College,
An Empowered Autonomous Institute,
Kolhapur.

Subject: Permission for **Remedial Classes**.

Respected Sir,

The department of BCA is willing to conduct **Remedial classes** are being arranged for students of BCA -I Semester- II 2024-25 from 16th June 2025 to 7th July 2025 in respective classroom.

We request you to permit us to conduct the classes.

Thanking You.

Yours faithfully,


Mr. V.B. Pujari

HEAD
DEPARTMENT OF B. C. A.
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)

Allowed
H
9/7/2025



VIVEKANAND COLLEGE, KOLHAPUR

(An Empowered Autonomous Institute)

NOTICE

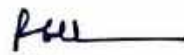
Date: 07/07/2025.

This is to notify Remedial classes are being arranged for students of BCA – I Semester- II 2024-25 from 16th June 2025 to 7th July 2025. All the students are requested to attend the classes as per the time table given below.

BCA Back Paper Timetable												
Time	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday	
	A	B	A	B	A	B	A	B	A	B	A	B
9:00 10:00	Maths	C	Maths	C	Maths	C	Maths	C	Maths	C	Maths	C
10:10 11:10	C	Maths	C	Maths	C	Maths	C	Maths	C	Maths	C	Maths
11:20 12:20	CA		CA		CA		CA		CA		CA	

Maths A: Boys B: Girls
C A: Boys B: Girls
CA A: All Students


Mr. V. B. Pujari


Dr. R.R. Kumbhar
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SUBJECT: C-programming (Repeter)

DATE:

SR.NO.	STUDENT NAME	23-6-25	24-6-25	25-6-25	3-7-25	7-7-25
1.	Vikram D. Dhotre	AB	unhappy	unhappy	unhappy	unhappy
2.	Pratik S. Barchale	AB	unhappy	AB	AB	unhappy
3.	Jivan N. Jadhav	JN.dh	JN.dh	JN.dh	JN.dh	JN.dh
4.	Ankita Balram Chibulkar	Chibulkar	Chibulkar	Chibulkar	Chibulkar	Chibulkar
5.	Ankita Laxu Gaurade	Gaurade	AB	Gaurade	Gaurade	Gaurade
6.	Gangashirwad Gaikwad	Gaikwad	AB	Gaikwad	Gaikwad	Gaikwad
7.	Sidhi bhut	Sidhi	Sidhi	AB	Sidhi	Sidhi
8.	Pratiksha Simsha Chavan	Pratiksha	Pratiksha	AB	Pratiksha	Pratiksha
9.	Prashant G. Ahire	Prashant	AB	Prashant	Prashant	Prashant
10.	Vaishnavi G. Bodekar	Vaishnavi	AB	AB	Vaishnavi	Vaishnavi
11.	Prathmesh Ekraath Lagare	Prathmesh	Prathmesh	Prathmesh	Prathmesh	Prathmesh
12.	Aman Raju Nayakwadi	Aman	Aman	Aman	Aman	Aman
13.	Anzar G. Patthar	Anzar	AB	Anzar	Anzar	AB
14.	Chaitanya Sanjay Patil	Chaitanya	Chaitanya	Chaitanya	Chaitanya	AB
15.	Sneha Ramchandra Mandarkar	Sneha	Sneha	Sneha	AB	Sneha
16.	Amit Nishant Kamble	Amit	AB	Amit	Amit	Amit
17.	Anikt Sunil Jumbhale	Anikt	A. Jumbhale	A. Jumbhale	A. Jumbhale	A. Jumbhale
18.	Shreyash Subhash Kachure	Shreyash	AB	AB	Shreyash	AB
19.	Praneeti Prashant Kamble	Praneeti	AB	Praneeti	Praneeti	AB
20.	Harsad Mambhar Jadhav	Harsad	H.M.J	Harsad	Harsad	Harsad
21.	Rashmita Ramchandra Gaurade	Rashmita	Rashmita	Rashmita	Rashmita	Rashmita
22.	Anjali Manilal Dholu	Anjali	Anjali	Anjali	AB	Anjali
23.	Akanksha Abhijit Choudhari	Akanksha	Akanksha	AB	Akanksha	Akanksha
24.	Vaibhavi Manijusha Umesh Bhurawar	Vaibhavi	Vaibhavi	Vaibhavi	Vaibhavi	Vaibhavi
25.	Samruddhi Shaghi Chavan	Samruddhi	S.S.Ch	AB	S.S.Ch	S.S.Ch
26.	Sarthak Subhas Kadam	Sarthak	Sarthak	AB	Sarthak	Sarthak
27.	Prem Khandekar	Prem	Prem	AB	Prem	Prem
30.	Sreyash Tukaram Nandyalakar	Sreyash	AB	Sreyash	Sreyash	Sreyash
31.	Om Sai Sanjay Mali	Om Sai	Om Sai	AB	Om Sai	Om Sai
32.	Dhruv Mehta	Dhruv	Dhruv	Dhruv	Dhruv	Dhruv
33.	Atharv Kartik Kagale	Atharv	AB	Atharv	Atharv	Atharv
34.	Vedant Ajit Upadhye	Vedant	Vedant	Vedant	Vedant	Vedant
35.	Harshvardhan S. Thakur	Harshvardhan	H.S.T	H.S.T	H.S.T	H.S.T
36.	Shreyash - O. Wadgaonkar	Shreyash	Shreyash	Shreyash	Shreyash	Shreyash
37.	Poornima Satpute	Poornima	Poornima	Poornima	AB	Poornima
38.	Om Laxman Ulape	Om Laxman	Om Laxman	Om Laxman	Om Laxman	Om Laxman
39.	Sahil Nivrutti Patil	Sahil	Sahil	Sahil	Sahil	Sahil
40.	Nishant Vijay Salvi	Nishant	Nishant	Nishant	Nishant	Nishant
41.	Prathmesh Kanchit Sanyalakar	Prathmesh	Prathmesh	Prathmesh	Prathmesh	Prathmesh

Q. 1 What is a C programming explain basic structure of C.

What is C

→ 1] C language is a general purpose high level & structure oriented programming language.

2] C language developed is a dennis ritchie.

3] C language was developed bell laboratories in a 1972.

4] C language feature, derive from the language called "B".
Basic compile programming language (BCPL)

5] C language was indrived was impliment Unix operating system.

6] C language platform independ language.

Basic Structure of C

Documentation
Section

// Sample program

Link Section

#include <stdio.h>
#include <conio.h>

Defination
Section

Void main ()

global declaration
Section

int a = 5 ;

Main function

void main ()
{
}

Sub program

void fun ()
{
printf ("inside value
fun() %d", a)
}

Documentation Section :-

It consist set of a is comment line name of the program and other detail.

Link Section :-

It consist is process typically starting #include! head. file.

e.g :- #include <stdio.h>
#include <conio.h> Standard input output.

definition section :-

include nature of function such as Return type, the name of function, & and list of argument.

Syntax :-

Return -type function-name (parameter).

Global declaration function :-

Global declaration function uses for Global declare variable & function, and declare value.

e.g :- int b = 10;

2
Main function :-
The Main function
execution program
o' uses
begins.

Sub program :-
Sub program use for use-
define function.

Q 2

What is Array Write a C program
'display' sum of two dimension.

→ Array :-

Array is a collection of similar data item in this same data item place. it is store contiguous memory location.

Array index → 0 1 2

2	5	3
---	---	---

→ Array element

Array

Array declaration :-

data-type Array-name [size];

Array initialization :-

data-type Array-name [size] = {element};

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types of Array

1] 1 dimensional Array

2] 2 dimensional Array

1] 1 dimensional Array :-

It contain only one dimension that is row is called as one dimension Array.

Syntax :-

data-type Array-name [size] ;

declaration :-

e.g : ~~int array [5] ;~~

initialization :-

e.g :- ~~int array [5] = { 1, 2, 3, 4, 5 }~~

2] 2 dimensional Array :-

It contain only two dimension that is rows & columns is called as two dimension array.

Syntax :-

* data-type Array-name [size of row] [size of columns];

e.g :- int array [3] [3];

// program to display sum of two dimensional ~~Arr~~ matrix.

#include <stdio.h>

#include <conio.h>

void main

{

int row = 2;

int col = 3;

int matrix1[2][3] = {{1,2,3}, {4,5,6}};

int matrix2[2][3] = {{7,8,9}, {10,11,12}};

int sum matrix [2][3];

for (i=0; i<row; i++)

{

for (j=0; j<col; j++)

{

sum matrix = matrix1[i][j] + matrix2[i][j];

}

}

printf ("sum of matrix");

Date

```

for (i=0; i < row; i++)
{
    for (j=0; j < col; j++)
    {
        printf ("%d", sum matrix[i][j]);
    }
    printf ("\n");
}
getch();

```

Q. 4 What are the data types used in.

- ① primitive data type
- ② derived data type
- ③ valid data type
- ④ enumerated data type.

primitive data type :-
primitive data type predefined data type.
which are supported language.

e.g :- int, char, float called primitive data type.

Integer type	Size
Types	16
signed int	16
Unsigned int	16
Short int	8
Unsigned short int	8 8
long int	32
Unsigned long int	32

Float point types

Type	Size
float	32
double	4
long double	80

character type	Size
char	1
Unsigned char	1

2] derived data type:-

The data type which is derived from fundamental or primitive data type. is known as derived data.

for e.g. array, structure, union, etc.

3] void data type:-

void data type means value or empty that is it take or written the empty value the void data type usually use with funⁿ to specify a type or with parameter list.

4] enumerated data type:-

enumerated data type consist of name and integer constant as a list it start with a by default and increment by 1 for the next identifier in the list.

5. Write algorithm & flowchart to find perimeter & area of circle.

→ Algorithm :-

Step by step representation of the program it is called as algorithm.

Flowchart :-

Flowchart is a step by step graphical or diagrammatic of a program is called as flowchart.

Parameter

Step 1 :- start

Step 2 :- define & parameter r, π .

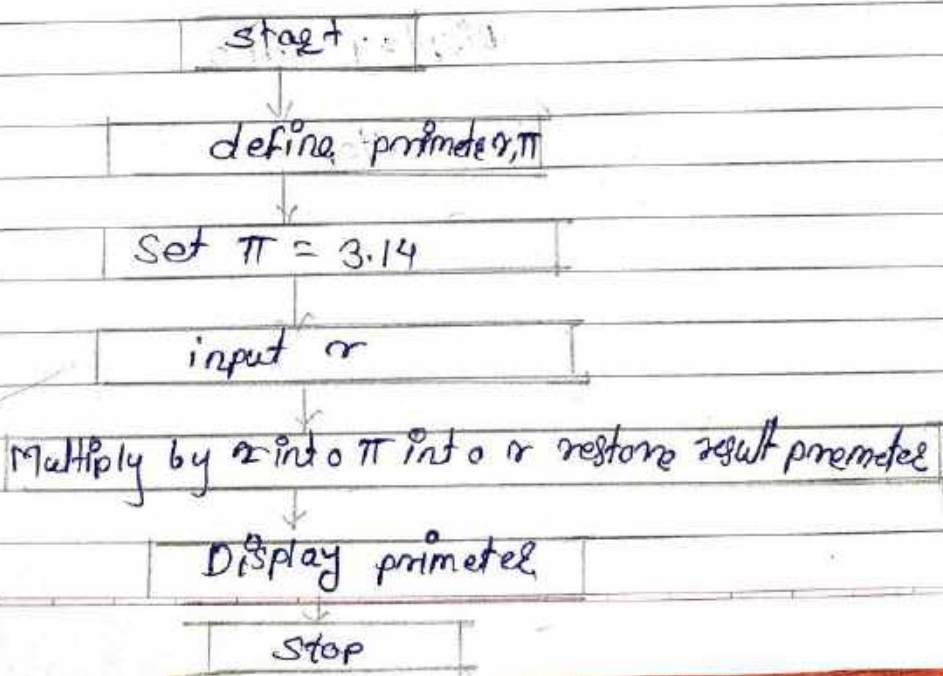
Step 3 :- Set $\pi = 3.14$

Step 4 :- input r

Step 5 :- multiply by 2 in π and r restore result perimeter

Step 6 :- Display perimeter.

Step 7 :- Stop.



Area of circle

step 1 = Start

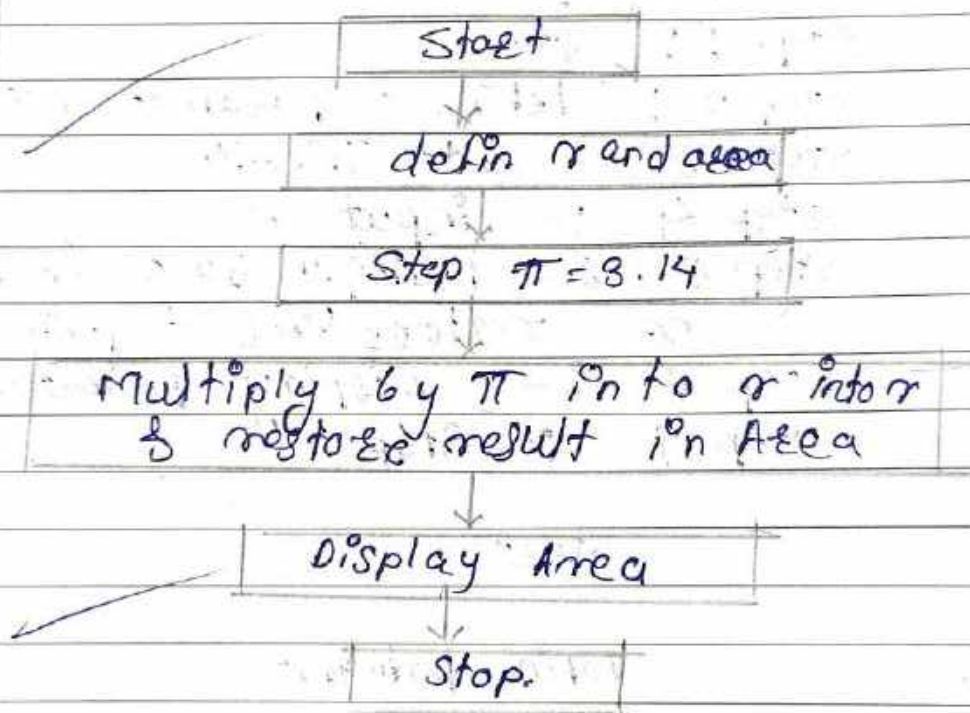
step 2 = define r & area

step 3 = Step $\pi = 3.14$

step 4 = Multiply by π into r
into r and store result
into area

step 5 = Display area

step 6 = Stop



Snehal Ramchandra Mandavkar.

Q 3

Write is c program to create user defined function that has parameter and return type.

#include <stdio.h>

#include <conio.h>

int sum (int, int)

void main()

{

int a, b, result;

printf ("Going to calculate the sum of 2 nos");

printf ("enter 2 nos");

scanf ("%d %d", &a, &b);

result = sum (a, b);

printf ("The sum %d", result);

{

int sum (int a, int b);

{

return a+b;

{

void main ()

{ int a, b;

printf ("enter two no = ");

scanf ("%d %d", &a, &b);

c = max(a, b)

{

printf ("max no = ", c);

void max (int u1, int u2)

{ if (u1 > u2)

{ printf ("max = %d", u1);

return u1;

else

Q 6

2)

Arithmetic operation :-

Arithmetic operation is used to mathematical calculation like $+$, $-$, $*$, $/$, modulus.

Arithmetic operation	operation name	
$+$	addition	$c = a + b$
$-$	Subtraction	$c = a - b$
$*$	Multiplication	$c = a * b$
$/$	division	$c = a / b$
$\%$	Modulus	$c = a \% b$

3

9) While loop :-

Syntax :-

Q1) What is C Programming Explain basic structure of c in detail.

-8

C Programming language is ~~for~~ ^{for} ~~journal~~ ^{purpose} of high level & structure oriented programming language.

② The language was developed by Dennis Ritchie.

③ C Programming features are derived from the language is called 'B' (Basic combine Programming language) BCPL.

④ The C language invented for implementing of Unix operating system.

⑤ C Programming language developed in Bell Laboratory in 1972.

∴ Basic Structure of C:-

Documentation section	→ 1 sample program
Link section	→ #include <stdio.h> #include <conio.h>
Definition section	→ void func()
Global declaration section	→ int a = 10;
Main function	→ void main()
SubProgram section	→ printf("value inside func() is %d", a);

1) Documentation section:-

The section consists of set of comment line & the name of the Program or other details.

2) Link section:-

The section preprocessor directive typically ~~the~~ start with the # (hashtag) including header file.

3)

3) Definition section:-

This section nature of function & name of the function & list of arguments.
Syntax:-

return_type, function-name (Parameter)
e.g: void fun()

4) Global declaration section:-

The .d-section is declare the variable & those variable are declare of the Program. who's start with the begins in Program.

5) Main function:-

The section have is use of enter point function is the Program, & use to main function is a Programming language.

6) SubProgram section:-

There are user defined the Program of the language. they are use to main function or other functions.

Array:-

① An array is a collection of similar data type, is stored that contiguous memory allocation.

② Array are derived data type. is such as integer, float, char, etc.

③ we to data type.

Array declaration syntax as follows.

① Array declaration:-

Syntax:-

data_type arrName[size];

eg:-

int arr[3]



0 1 2 ← Index.

② Array initialization syntax as follows.

③ Array initialization:-

Syntax:-

data_type arrName[size] = {element of array};

eg:-

int arr[5] = {1, 2, 3, 4, 5};



0 1 2 3 4 ← Index

⑤ Types of Array:-

There are two types of the array.

① one dimension Array:-

② Two dimension Array:-

① 1 D Array:-

① It is called as one dimensions Array.

② It consists of one dimension i.e. row.

eg:-

--	--	--	--

 ← row

② 1D Array declaration:-

Syntax.

data-type arrname [size];

eg:-

int arr [4];

--	--	--	--

0 1 2 3

③ 1D Array Initialization:-

Syntax:-

data-type arrname [size] = {elements of array};

eg:-

int arr [5] = {1, 2, 3, 4, 5};

1	2	3	4	5
---	---	---	---	---

 ← elements
0 1 2 3 4 ← Index.

② Two dimension Array:-

① It is called as two dimensions Array:-

② It consists of two dimensions. i.e. row & column.

③ Declaration:-

Syntax:- data type arrname [sizeof row] [sizeof col/size]

eg:- int arr [3] [3]

0			
1			
2			

Name - Prathamesh Eknath Lagare.

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07/07/2023

2) 2D Initialization:-

Syntax:-

data-type array name $\left[\begin{smallmatrix} \text{sizeof} \\ \text{row} \end{smallmatrix} \right] \left[\begin{smallmatrix} \text{sizeof} \\ \text{column} \end{smallmatrix} \right] = \{ \text{elemental array} \}$

ex:

int arr[3][3] = {1, 2, 3, 4, 5, 6, 7, 8, 9};

	0	1	2
0	1	2	3
1	4	5	6
2	7	8	9

• Two dimensional matrix program:-

```
#include <stdio.h>
```

```
#include <conio.h>
```

```
void main()
```

```
{
```

```
int rows = 2;
```

```
int cols = 3;
```

```
int matrix1[2][3] = {{1, 2, 3}, {4, 5, 6}};
```

```
int matrix2[2][3] = {{10, 11, 12}, {13, 14, 15}};
```

```
int matrix1[2][3] = {{1, 2, 3}, {4, 5, 6}};
```

```
int matrix2[2][3] = {{7, 8, 9}, {10, 11, 12}};
```

```
int sum matrix[2][3];
```

```
for (i = 0; i < row; i++)
```

```
{
```

```
for (j = 0; j < cols; j++)
```

```
{
```

```
sum matrix[i][j] = matrix1[i][j] + matrix2[j][i];
```

```
}
```

```
}
```

```
printf("sum of matrices");
```

```
for (i = 0; i < row; i++)
```

```
{
```

```
for (j = 0; j < cols; j++)
```

```

printf("%d", summatrix[i][j]);
}
printf("\n");
}
getch();
}

```

O/P:-

$$\begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \end{bmatrix} + \begin{bmatrix} 7 & 8 & 9 \\ 10 & 11 & 12 \end{bmatrix} = \begin{bmatrix} 8 & 10 & 12 \\ 14 & 16 & 18 \end{bmatrix}$$

Q5)

Algorithm:-

Algorithm is step by step representation of Program.

Flowchart:-

~~No. of~~ It is step Graphical representation of the Program is called Flowchart.

~~Perimeter~~

Algorithm of area of Perimeter ($2\pi r$):-

STEP 1:- START

STEP 2:- Define π , r , Perimeter.

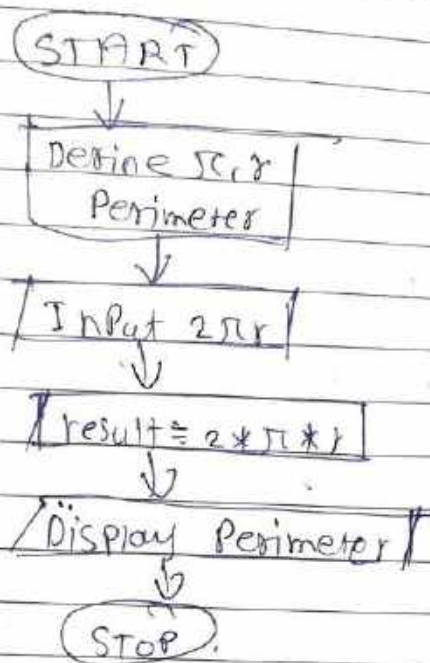
STEP 3:- Input $2\pi r$.

STEP 4:- Multiply by $2 * \pi * r$ is stored by Perimeter.

STEP 5:- Display Perimeter.

STEP 6:- STOP.

Flowchart of Perimeter ($2\pi r$).



Algorithm of area of circle (πr^2):-

STEP 1:- START

STEP 2:- Define π, r , area.

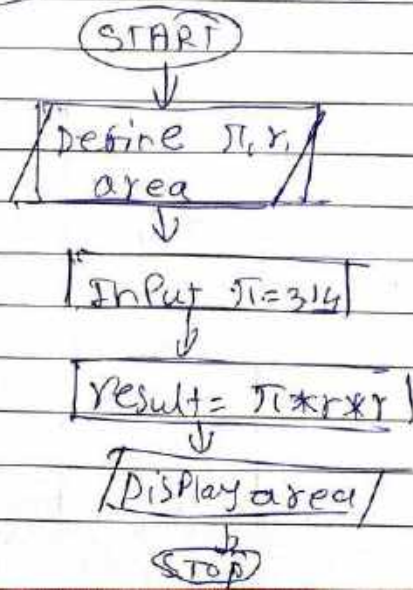
STEP 3:- Input $\pi = 3.14$

STEP 4:- Multiply by $\pi * r * r$ is result stored by area of circle.

STEP 5:- Display area.

STEP 6:- STOP.

Flowchart of area of circle (πr^2):-



Q.2)

① The Data is type of data. C language which rich set of data types.

- ① Primitive Data type.
- ② Derived Data type.
- ③ Void Data type.
- ④ Enumerated Data type.

① Primitive Data type:-

Primitive Data type is a define a data type. Which supported by programming language.

e.g:-

integer, character, float is all primitive data type.

Integer types:-

Type	Size
int or signed int	16
unsigned int	16
short int	8
unsigned short int	8
long int	32
unsigned long int	32

float Point type:-

Type	Size
float	32
double	64
long double	80

Character Point type.

Type	Size
char	8
unsigned char	8

@Derived data type:-

The data type is ~~primitive~~ which fundamental or Primitive data type. Is known as Derived data type.

e.g!:-

Structure, array, Unions. etc..

③ Void data type:-

The void data type is low or empty value. That is take or return empty value. of the list. The void data is usually use to specify the out of The Parameter list.

④ Enumerated data type:-

The data type is consists of name of the constant as a list. If start with zero by default. & if increments of the one for the sequential identities of a list.

Q6) String note:-

1) strcpy ():-

① The strcpy function ^{is} copies the ~~implements~~ one string to another string.

② The strcpy function defined by `<string.h>`

③ If strcpy function also entire including the out of the terminator.

④ It can the strcpy function is a copied. by the strings.

Syntax:-

strcpy (destination, Source).

② Arithmetic Operator:-

They are used to perform basic mathematical calculator like Addition, Subtraction, Multiplication, division, Modulus is an Expression.

Operator	Description	Example
+	Addition	$c = a + b$ gives Addition $a + b$.
-	Subtraction	$c = a - b$ gives Subtraction $a - b$.
*	Multiplication	$c = a * b$ gives Multiplication $a * b$.
/	Division	$c = a / b$ gives Divide a / b .
%	Modulus	$c = a \% b$ give Modulus $a \% b$.

③ While loop:-

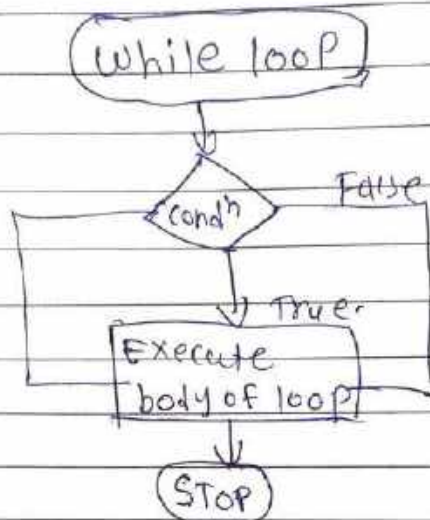
- ① Is an entry control loop.
- ② while loop was ~~derived~~ execute as long as derived by the control loop.
- ③ If expression is false, that are control ^{statements} ~~statement~~ ~~expression~~ is a out of the while loop.

Syntax:-

```

while (expr) {
    statements ;
}
    
```

flowchart of while loop:-



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Name - Radhika shivaji Durgule
Roll No. - 56

Good Luck

Page No.

Q.1) What is C programming ex. basic structure of C in detail

⇒ C programming language general purpose high level and structured oriented programming language in C. Father's of C language is Dennis M. Ritchie. C language developed at bell laboratory. C language is basic combined language. C language based on B language. C language developed at 1972. C compiler is tuxoc.

Documentatⁿ
Section

⇒ // Sample program

linked section

⇒ #include <stdio.h>
#include <conio.h>

13 Definition
Section

⇒ void fun ()

Global declaration section

⇒ int a = 5;

Main function

⇒ void main () {

Sub programming section

⇒ void fun ()
{
printf ("value of
inside fun () %d",
a);
}

① Documentation Section -
Documentation Section it consist program name and comment given the program name other details. This section program first what is program and program other details
// sample program

② Linked section -
This section it include header file in program start and ~~It~~ Input. It consist header file library i.e #include <stdio.h> and #include <conio.h> two header file linked section

③ Definition section -
Define the ^{function} variable. This is a section Define ^{function} variable for function. i.e return-type of argument
return-type (parameter list);

④ Global declaration section -
This is Global declaration section variable. This section declare variable from the program. Globally declare.
for example - int a=5;

character type -

type	Size
unsigned char	64
signed char	64

③ Drive data type

It consist c language fundamental and preemptive types of data i.e array, structure, union, float

5. Algorithm - Step by step instruction from ~~the~~ solve the program.

Flowchart - Step by step graphical representation or diagrammatic representation.

perimeter of circle -

step 1 - START

step 2 - Define perimeter π, r

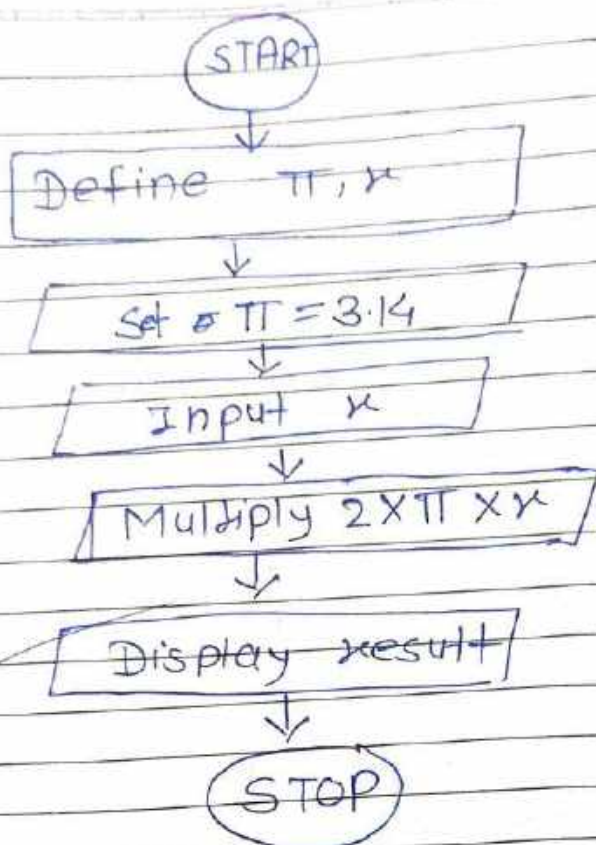
step 3 - $\text{Get } \pi = 3.14$

step 4 - Multiply by $2 \times \pi \times r$ store the result πr

step 5 - Input r

step 6 - Display the result perimeter

step 7 - STOP



* area of circle

Step 1 → START

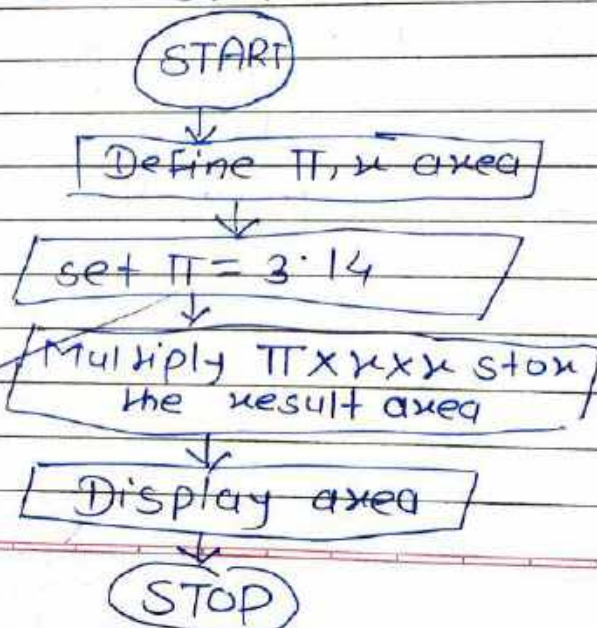
Step 2 — Define area π, r

Step 3 — Set $\pi = 3.14$

Step 4 — Multiply area $\pi \times r \times r$ store the result

Step 5 — Display the area

Step 6 — STOP



⑤ Main function

Main function it consist a one function in program include It is main function. It is - use program one main function. for example, void main () {
}

⑥ sub programming section -

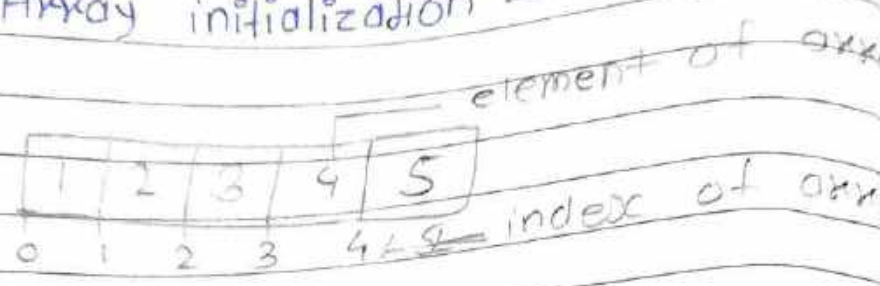
Sub programming Section It is program last part of program it is sub programming section. i.e void ^{func}main {
printf ("value inside func")
"%d", a);
}

Q.2 What is array . Write a c program to display sum of two dimension-
al matrix.

⇒ Array - Array is a collection of similar types of data items stored at contiguous memory location. Array that is a collection of diverse data types in c programming language It consist the array is a preemptive data types that is int, float, double, char. e.g - integer, float, double, character.

* array initialization from the

Array initialization -



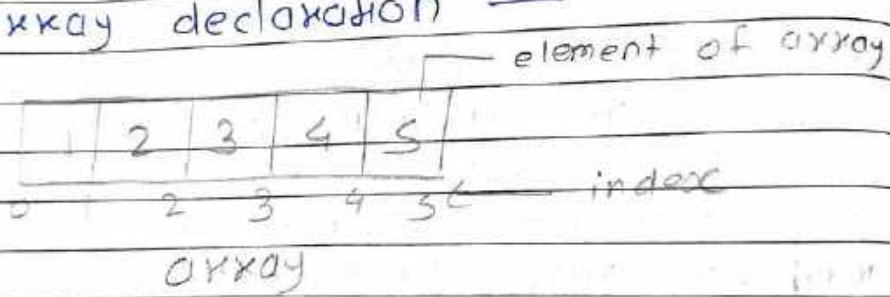
array

Data-type arr_name [size] = {element 1, element 2, ..., element n}

int arr[5] = {1, 2, 3, 4, 5};

* Array declaration from following

Array declaration -



array

data-type arr_name [size];

int arr[5];

* Types of array that following

① One Dimension array -

It consist one dimension array i.e row.

It it know as 1 D array.

One 1 D array

	2	3	4	5	
0	1	2	3	4	5

1 D array

Array declaration -

	2	3	4	5	
0	1	2	3	4	5

array index

data-type arr_name[size];
int arr[5];

Array initialization -

	1	2	3	4	5
0	1	2	3	4	5

array index

data-type arr_name[size] = {element
of array};
int arr[5] = {1, 2, 3, 4, 5};

② Two dimension array -

Two dimension array is it know as 2 D array . it consist two dimension i.e row and column.

	0	1	2	
0	1	2	3	
1	4	5	6	
2	7	8	9	

array index

* Array declaration -

0			
1			
2			

Index of array

array

data-type arr_name $\left[\begin{array}{c} \text{size} \\ \text{of} \\ \text{row} \end{array} \right] \left[\begin{array}{c} \text{size} \\ \text{of} \\ \text{column} \end{array} \right]$

int arr[3][3];

* Array initialization -

	0	1	2	3	Index of array
0	1	2	3		
1	4	5	6		→ element of
2	7	8	9		array

array

data-type arr_name $\left[\begin{array}{c} \text{size} \\ \text{of} \\ \text{row} \end{array} \right] \left[\begin{array}{c} \text{size} \\ \text{of} \\ \text{column} \end{array} \right] =$

{element array};

int arr[3][3] = {{1, 2, 3}, {4, 5, 6}, {7, 8, 9}};

C program to display sum of two dimension matrix -

```
#include <stdio.h>
#include <conio.h>
void main ()
{
    int row = 2;
    int column = 3;
    int matrix1 = { {1, 2, 3}, {4, 5, 6} };
    int matrix2 = { {1, 2, 3}, {4, 5, 6} };
    int sum matrix = matrix1 + matrix2;

    printf ("Go into calculate sum of two no.s");
    for (i = 0; i < row; i++) {
        for (j = 0; j < column; j++) {
            printf ("sum of two no.s");
        }
        sum matrix = matrix result;
        printf ("%d", result);
    }
    printf ("\n");
}
getch()
}
```

o/p = 2 4 6
 8 10 12

Q.3

Function -

In C we can divide large program into basic building block it is known as function. In other words, we say that the collection of statements that create a program is called a function.

Function declaration

return-type (parameter list)

Function syntax -

```
{  
// body function  
}
```

Function call -

Function call In C we can divide a large program into basic building block. Function call parameter list argument

Two types of function -

① User define function -

It is return zero or empty means return value is empty. It is zero empty value.

library function -

// program

```
#include <stdio.h>
#include <conio.h>
int sum sum = a, b (int, int);
void main ()
{
    int sum (a, b);
    printf ("Go into to calculate sum  
of two no.'s");
    printf ("Enter two no's");
    scanf ("%d %d", &result);
    result = sum(a, b);
}
printf ("sum %d", result);
}
return a+b;
}
```

Q.4

data type means types of data
data types is four types from
that the follows -

- ① preemptive data type -
- ② void data type -
- ③ Drive data types -
- ④ Enumexated data types -

① preemptive data type -

Data types it preemptive. data
types means types of data. pree-
mptive i.e int, float, char

Types of integer -

type	size
intox signed int	16
signed int	16
signed short int	8
unsigned short int	8

Float type -

type	size
unsigned Float	16
signed Float	16
unsinged long	32
singed long	32
unsinged long double	80
Singneged long double	80

2) Arithmetic Operator

Arithmetic operator it is mathematical operator i.e. addition, subtraction, multiplication, division, modulus

Operation	Mean
Addition	$c = a + b$
subtraction	$c = a - b$
division	$c = a / b$
multiplication	$c = a \times b$
modulo	$c = a \% b$

3) While loop

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39
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Q.1) What is C programming Explain basic structure of C in detail.

→ Documentation section → sample program.

Link section → #include <stdio.h>
#include <conio.h>

Definition section → void function

Global declaration section → int a=10;

12 Main Function → void main

sub program → void function C13
printf("value side has C")
"%d", a);

1) Documentation section =

→ The consist of set of comment line given the name of program + other details.

2) link section :- ^{use} The section is process dictated typically started by Hashtag (#) to include header file.

Syntax :- <stdio.h> standard I/p o/p.

3) definition section :-

The include nature name of function return type name of the program and list of argument

Syntax :- void function(parameters)

4) Global declaration section:-

There are some variable & some variable are declared above all function & whose scope is varied through the program.

5) main function :-

The main function was the entry point the program only function must be present is never in c. program.

c) sub program :-

This section use by the function that perform specific task and call by main function.

d) Explain data types used in C program.

→ data types has rich in C program.

① primitive data type.

② derive data type. derived

③ void data type.

④ Enumerated data type.

i) primitive data type :-

of The primitive data type are base fine data type which supported by C programming language.

① Integer types

Types	Size
int	16
using int	16
short int	8
using short int	8
long int	32
using long int	32

② Float types.

Types	Size
float	32
double	64
long double	80

③ Character types.

Types	Size
char	8
using char	8

2) derive data type :-

The data type which derive from Fundamental are derivative data type is non as derive data.

Example :- arr, Function, structure + union.

3) void data type :-

void data types means no values or empty is not take our contain the empty value empty value void data type the use void used use which Function to specify else written type our with parameter list.

4) Enumerated data type :-

Enumerate data type are consist of name integer constant as a list it start with constant by a default and enumerated by 1 for the sequential identities in the c list.

Q.3) write a algorithm and draw Flowchart to find the perimeter and area of circle.

→ Algorithm :-

set-by-step representation of a programming is called algorithm.

Flowchart :-

graphically representation of a programming is called Flowchart / chart

* Algorithm

1) perimeter of area.

step 1 :- start

step 2 :- define perimite r, π

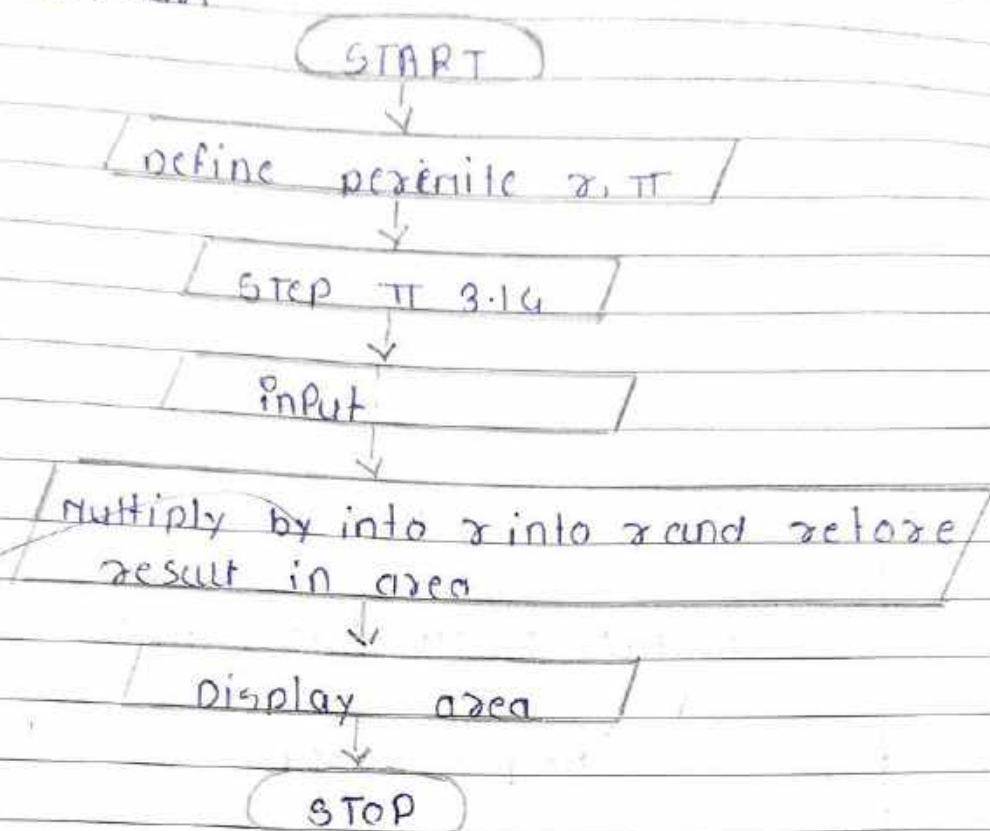
step 3 :- step $\pi \cdot 3.14$

step 4 :- Multiply by 2 into π into r and store result in area

step 5 :- Display ~~area~~ perimite

step 6 :- stop.

* Flowchart

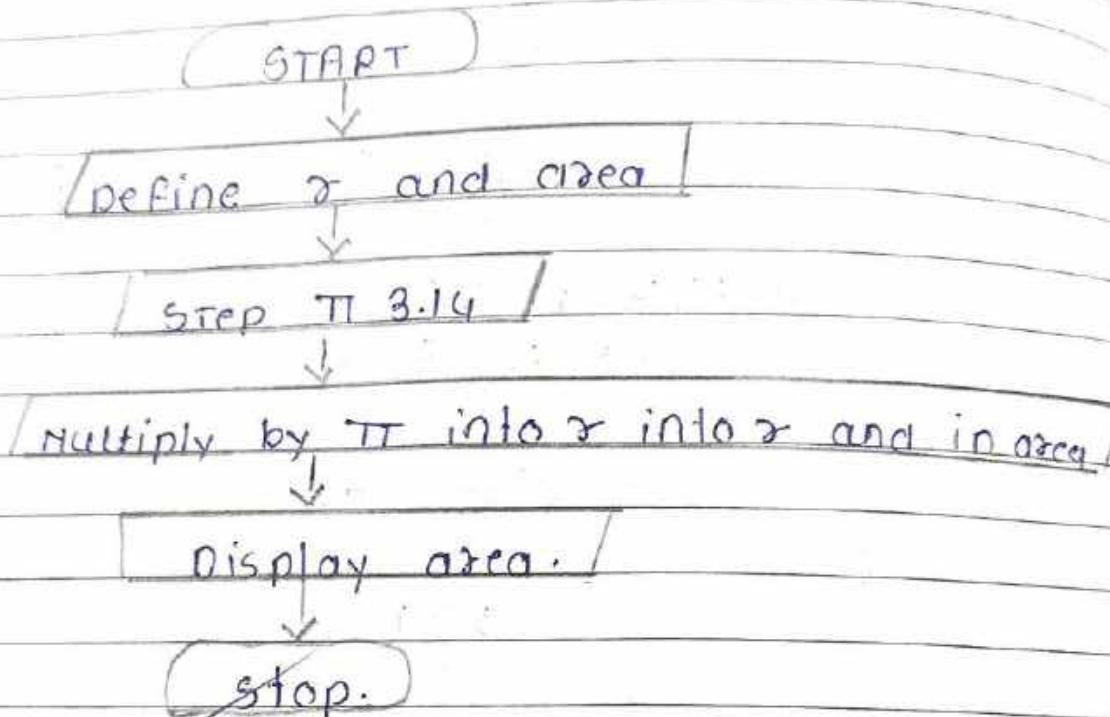


* Algorithm

2) area of circle

- Step 1 = Start
- Step 2 = define π and area
- Step 3 = Step π 3.14
- Step 4 = Multiply by π into π into π and in area
- Step 5 = Display area
- Step 6 = Stop

* Flowchart



Name _____

Price _____

Q.4) What is Array write a c program to display sum of two dimensional matrix.

elements of Array

1	2	3	4
0	1	2	3

← Index

- 1) Array :- An Array is a collection of similar type of data items store at Contiguous of data Allocation.
- 2) Array is one the in c programming Language which can store the primitive type of data such as int, character, double, float.
- 3) it also Has store the collection data such as Pointer, Structure.

elements of Array.

1	2	3	4	
0	1	2	3	

← Index

Азъ азъ.

4) Syntax of arr declaration is as follows.

① Array define :- data_type arr_name [size]
eg :- int arr[5]

② Array Initialization: data-type arr_name [size] =
elements of array;

Array eg:- int arr[5]

--	--	--	--	--

0 1 2 3 4 ← Index

* C arr are static in nature i.e there are allocated memory at Compile time

* The Syntax of array initialization is as follows.

Array Initialization = data - type arr_name [size] = {element of arr};

eg:- int arr[5] = {1, 2, 3, 4, 5};

	1	2	3	4	5	← elements
Index →	0	1	2	3	4	

Array.

* Types of array in C.

There are 2 type of arr the are as follow.

- ① 1D Array
- ② 2D Array

1) 1D Array :- One dimensional Array is also called as 1D Array.

it consist only one dimensional that is row.

Syntax :- it is represented in a row in a sequential form.

elements of arr

1	2	3	4	5
0	1	2	3	4

→ Index.

2) 2D Array :- Two dimensional Array is also called as 2D Array.

Contiguous :-

2D Array declaration = data-type arr-name

$\left[\begin{array}{c} \text{size of} \\ \text{row} \end{array} \right] \left[\begin{array}{c} \text{size of} \\ \text{columns} \end{array} \right];$

eg :- `int arr [3] [3];`

	0	1	2
0			
1			
2			

2D Array.

Initialization :- data-type arr-name

$\left[\begin{array}{c} \text{size of} \\ \text{row} \end{array} \right] \left[\begin{array}{c} \text{size of} \\ \text{columns} \end{array} \right] = \text{Elements of Array};$

eg :- `int arr [3] [3] = { {1, 2, 3}, {4, 5, 6}, {7, 8, 9} }`

	0	1	2
0	1	2	3
1	4	5	6
2	7	8	9

2D Array

// program of add 2 matrices //

#include <stdio.h>

#include <conio.h>

void main()

{

int rows = 2;

int columns = 3;

int matrix 1[2][3] = { {1, 2, 3}, {4, 5, 6} };

int matrix 2[2][3] = { {7, 8, 9}, {10, 11, 12} };

int sum matrix[2][3];

for (i=0; i<rows; i++);

{

for (j=0; j<columns; j++);

{

sum=matrix 1[i][j] + matrix 2[i][j];

}

}

printf("sum of matrices");

for (i=0; i<rows; i++)

{

printf("%d" sum matrix[i][j]);

}

printf("\n")

}

getch()

}

Q.3 Explain the data types use in C program.

Ans → Data means type of data C language has rich set of data type.

- ① primitive data type
- ② derive data type.
- ③ void data type
- ④ enumerated data type

① primitive data type. 3-
primitive data type in means predefine data type supported by programming language.
e.g. int, char, ~~float~~ float, are called primitive

Integer types.

Types	Size
int or signed int	16
unsigned int	16
short int	8
unsigned short int	8
long int	32
unsigned long int	32

Floating Types.

Types	Size.
float	32
double	64
long double	80

Character type

Types	Size
char	8
unsigned char	8

2) Derived data type &

The data type which derive from fundamental or primitive data type is known as derived data type.

eg. array, function, Structure, etc.

3) void Data type:-

void data type means no values or empty i.e. it take or return the empty value the void data type usually use with function to specify its return type or with member list.

(u) Enumerated data types:-

Enumerated data type consist of name integer constant as a list.

It start with zero by default & increment by one for the sequential identities in the list.

Q.5 Short notes

① strcpy()

ans:-> ① The strcpy() function copies the data from one stream into the another stream.

② strcpy function is define in the <string.h>

③ strcpy function also return copied stream.

④ it is copied the entire stream including the null terminator

Syntax

strcpy(destination, source).

② Arithmetic operator.

Ans:- Arithmetic operator means this are use to perform basic mathematical calculation like $+$, $-$, $*$, modulus division, operation.

operation	Description	Example.
$+$	addition	$c = a + b$ give add of $a + b$
$-$	subtraction	$c = a - b$ give sub of $a - b$
$*$	multiplication	$c = a * b$ give mul of $a * b$
$\%$	modulus	$c = a \% b$ give modu of $a \% b$
$/$	division	$c = a / b$ give div of a / b

③ while loop.

The while loop is used when the numbers of iteration is not known and the loop runs as long as the condition is true. The condition is checked before each iteration.

Syntax:

```
while (condition)
{
    // loop body
}
```



GPS Map Camera

Kolhapur, Maharashtra, India

P67q+g8r, Warna Colony, Kolhapur, Maharashtra 416003, India

Lat 16.713992° Long 74.238274°

24/06/2025 10:08 AM GMT +05:30



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[illegible]

Vivekanand College, Kolhapur (An Empowered Autonomous Institute)

Department : BCA

Subject : Mathematics

Name	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6
1. SHRI HIRKA BALWANT																					
2. SHRI KASHI DEEPAK																					
3. SHRI KASHI AND																					
4. SHRI BALINDARYA S																					
5. SHRI PRANITA DADASO																					
6. SHRI HIRKA SANTOSH																					
7. SHRI ANSHU KANHAIYA																					
8. SHRI PRIYA RAJENDRA																					
9. SHRI AND																					
10. SHRI ANKSHA Sambhaji																					
11. SHRI Prashant Kamble																					
12. SHRI PRAKSHA P.																					
13. SHRI ADAR VINOD																					
14. SHRI Anuradha Lilandar																					
15. SHRI ANKSHA SANTOSH																					
16. SHRI KASHI KRISHNA																					
17. SHRI KASHI VILAS																					
18. SHRI KASHI SHIP																					
19. SHRI KASHI K.																					
20. SHRI KASHI AND																					
21. SHRI KASHI Krushnat																					
22. SHRI KASHI Namrata Dilip																					
23. SHRI KASHI SHILP S																					
24. SHRI KASHI SAMRUDDHI M																					
25. SHRI KASHI MADHURA VAIBHAV																					
26. SHRI SANIKA SANJAY																					
27. SHRI KASHI LAXMI YAMNUR																					
28. SHRI KASHI Ramchandra																					
29. SHRI KASHI DNYANDEO																					
30. SHRI KASHI NIKHIL TUKARAM																					
31. SHRI KASHI INAVI SANJAY																					
32. SHRI KASHI ISAR SADIK																					
33. SHRI KASHI Smit																					
34. SHRI KASHI PRAJATA R																					
35. SHRI KASHI GANGA S																					
36. SHRI KASHI HIRKA SHIVAJI																					
37. SHRI KASHI LAL M																					
38. SHRI KASHI ANKHA BALIRAM																					
39. SHRI KASHI SAMRUDDHI S																					
40. SHRI KASHI HIRKA SANJAY																					
41. SHRI KASHI PRAKSHA J																					
42. SHRI KASHI KISHOR																					
43. SHRI KASHI ANARDAN																					
44. Yodav Siddhi																					

Teacher Name : Mr. K.D.Morabale

Name: Sakshi Sanjay Chavan

Q.1 a] $\frac{12!}{7!6!}$

$$= \frac{12 \times 11 \times 10 \times 9 \times 8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1}{7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1}$$

$$= \frac{12 \times 11 \times 10 \times \cancel{9} \times \cancel{8} \times \cancel{7} \times \cancel{6} \times \cancel{5} \times \cancel{4} \times \cancel{3} \times \cancel{2} \times \cancel{1}}{\cancel{7} \times \cancel{6} \times \cancel{5} \times \cancel{4} \times \cancel{3} \times \cancel{2} \times \cancel{1} \times \cancel{6} \times \cancel{5} \times \cancel{4} \times \cancel{3} \times \cancel{2} \times \cancel{1}}$$

$$= 2 \times 11 \times 2 \times 3$$

$$= 132$$

Q.1 b] nC_r

$${}^nC_r = \frac{n!}{(n-r)!r!}$$

Q.2 a] Find the value of n ${}^nP_5 = 42$ (nP_3) $\therefore$

$\rightarrow$ Given:-

$${}^nP_5 = 42 \quad ({}^nP_3) \quad \frac{(n-3)! (n-4)! (n-5)!}{(n-5)!} = 42$$

We know that,

$${}^nP_r = \frac{n!}{(n-r)!}$$

$$(n-3)(n-4) = 42$$

$${}^nP_5 = 42 \quad \frac{n!}{(n-3)!}$$

$$\frac{n!}{(n-5)!} = 42 \quad \frac{n!}{(n-3)!}$$

$$\frac{(n-3)!}{(n-5)!} = 42$$

Q.2 b] find the value of ${}^{20}C_{16} - {}^{19}C_{16}$

→ Given:-

$${}^{20}C_{16} - {}^{19}C_{16}$$

We know that,

$${}^nC_r = \frac{n!}{(n-r)!r!}$$

$${}^{20}C_{16} = \frac{20!}{(20-16)!16!} - {}^{19}C_{16} = \frac{19!}{(19-16)!16!}$$

$$\frac{20!}{4!16!} - \frac{19!}{3!16!}$$

$$\frac{20!}{4!16!} = 20$$

$$20 \times 19 \times 18 \times 17 \times 16 \times 15 \times 14 \times 13 \times 12 \times 11 \times 10 \times 9 \times 8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1$$

$$4 \times 3 \times 2 \times 1 \times 16 \times 15 \times 14 \times 13 \times 12 \times 11 \times 10 \times 9 \times 8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1$$

$$= \frac{20 \times 19 \times 18 \times 17}{4 \times 3 \times 2 \times 1}$$

$$= \frac{5 \times 19 \times 6 \times 17}{2 \times 1}$$

$$= 5 \times 19 \times 3 \times 17$$

$$= 4845$$

$$\frac{20!}{4!16!} = 4845$$

Q. 3 b] Let $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$ be universal set
 $A = \{1, 3, 5, 7, 9\}$, $B = \{2, 3, 4, 6, 8, 10\}$, $C = \{6, 7, 8, 9\}$
 Find i] $(A \cup B)'$, ii] $(A \cap C)'$, iii] $(A')'$, iv] $(B - C)'$
 v] $A \cap (B \cup C)$, vi] $A \cup (B \cap C)$

→ Given,

$$U = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$$

$$A = \{1, 3, 5, 7, 9\}$$

$$B = \{2, 3, 4, 6, 8, 10\}$$

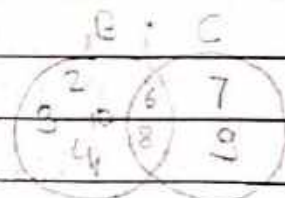
$$C = \{6, 7, 8, 9\}$$

1] $(A \cup B)' =$ ① $A \cup B = \{1, 3, 5, 7, 9, 2, 4, 6, 8, 10\}$
 ② $(A \cup B)' = \{ \}$

2] $(A \cap C)' =$ ① $A \cap C = \{7, 9\}$
 ② $(A \cap C)' = \{1, 2, 3, 4, 5, 6, 8, 10\}$

3] $(A')' =$ ① $A' = \{2, 4, 6, 8, 10\}$
 ② $(A')' = \{1, 3, 5, 7, 9\}$

④ $(B - C)' = \{2, 3, 4, 10\}$
 ① $B - C = \{2, 3, 4, 10\}$
 ② $(B - C)' = \{1, 5, 6, 7, 8, 9\}$



⑤ $A \cap (B \cup C) =$ ① $B \cup C = \{2, 3, 4, 6, 8, 10, 7, 9\}$
 ② $A \cap (B \cup C) = \{3, 7, 9\}$

⑥ $A \cup (B \cap C) =$ ① $B \cap C = \{6, 8\}$
 ② $A \cup (B \cap C) = \{1, 3, 5, 7, 9, 6, 8\}$

Q. 4 If $f(m) = m^2 - 3m + 1$ Find i] $f(0)$, ii] $f(-3)$, iii] $f(x+1)$, iv] $f(-x)$, v] $f(\frac{1}{2})$

→ Given:

$$f(m) = m^2 - 3m + 1 \text{ ——— ①}$$

1] $f(0)$

~~$f(0)$~~ Put in eqⁿ ①

$$f(0) = (0)^2 - 3(0) + 1$$

$$= 0 - 0 + 1$$

$$= 1$$

$$\therefore f(0) = 1$$

2] $f(-3)$

Put in eqⁿ ①

$$f(-3) = (-3)^2 - 3(-3) + 1$$

$$= 9 - 9 + 1$$

$$=$$

3] $f(x+1)$

Put in eqⁿ ①

$$f(x+1) = (x+1)^2 - 3(x+1) + 1$$

$$=$$

4] $f(-x)$

Put in eqⁿ ①

$$f(-x) = (-x)^2 - 3(-x) + 1$$

$$= x^2 + 3x + 1$$

$$=$$

5] $f\left(\frac{1}{2}\right)$

Put in eqⁿ ①

$$f\left(\frac{1}{2}\right) = \left(\frac{1}{2}\right)^2 - 3\left(\frac{1}{2}\right) + 1$$

$$=$$

Q.5 Define

1] even vertex: The degree of even vertex is called even vertex.

ex: 

2] odd vertex: The degree of odd vertex is called odd vertex.

3] Multi graph: A graph with parallel edges is called multi graph

Q.6 a] Find the no. of permutation of the letters of the word 'RAMSHANTA'

→ Given:-

The given word is RAMSHANTA

We know that,

$${}^n P_r = \frac{n!}{P_1! P_2! P_3!}$$

$$\therefore n = 9$$

A = occurs 3 times = $P_1 = 3$

$${}^n P_r = \frac{9!}{3!}$$

$$= \frac{9 \times 8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1}{3 \times 2 \times 1}$$

$$= 9 \times 8 \times 7 \times 6 \times 5 \times 4$$

$$= 60480$$

$$\begin{array}{r} 20 \\ 6 \\ \hline 120 \\ 7 \\ \hline 840 \\ 8 \\ \hline 6720 \\ 9 \\ \hline 60480 \end{array}$$

Q. 6 b] Describe following set in Roster form

1] $A = \{x | x \text{ is letter of the word 'MATHEMATICS'}\}$

→

$$A = \{M, A, T, H, E, I, C, S\}$$

2

2] $B = \{x | x \text{ is an integer } -\frac{3}{2} < x < \frac{9}{2}\}$

→

$$B = \{-\frac{2}{2}, -\frac{1}{2}, \frac{0}{2}, \frac{1}{2}, \frac{2}{2}, \frac{3}{2}, \frac{4}{2}, \frac{5}{2}, \frac{6}{2}, \frac{7}{2}, \frac{8}{2}\}$$

Q. 3 a] If $A = \begin{bmatrix} 2 & -3 \\ 5 & -4 \\ -6 & 1 \end{bmatrix}$ $B = \begin{bmatrix} -1 & 2 \\ 2 & 2 \\ 0 & 3 \end{bmatrix}$ $C = \begin{bmatrix} 4 & 3 \\ -1 & 4 \\ -2 & 1 \end{bmatrix}$

Show that ① $A + B = B + A$

② $A + (B + C) = (A + B) + C$

→ Given,

$$A = \begin{bmatrix} 2 & -3 \\ 5 & -4 \\ -6 & 1 \end{bmatrix} \quad B = \begin{bmatrix} -1 & 2 \\ 2 & 2 \\ 0 & 3 \end{bmatrix} \quad C = \begin{bmatrix} 4 & 3 \\ -1 & 4 \\ -2 & 1 \end{bmatrix}$$

Now we show that,

① $A + B = B + A$

$$A + B = \begin{bmatrix} 2+(-1) & -3+2 \\ 5+2 & -4+2 \\ -6+0 & 1+3 \end{bmatrix} = \begin{bmatrix} 1 & -1 \\ 7 & -2 \\ -6 & 4 \end{bmatrix}$$

$$B + A = \begin{bmatrix} -1+2 & 2+(-3) \\ 2+5 & 2+(-4) \\ 0+(-6) & 1+3 \end{bmatrix} = \begin{bmatrix} 1 & -1 \\ 7 & -2 \\ -6 & 4 \end{bmatrix}$$

$$\therefore A + B = B + A$$

$$(2) A + (B + C) = (A + B) + C$$

$$A + B + C = \begin{bmatrix} -1+4 & 2+3 \\ 2+(-1) & 2+4 \\ 0+(-2) & 3+1 \end{bmatrix} = \begin{bmatrix} 3 & 5 \\ 1 & 6 \\ -2 & 4 \end{bmatrix}$$

$$A + (B + C) = \begin{bmatrix} 2+3 & -3+5 \\ 5+1 & -4+6 \\ -6+(-2) & 1+4 \end{bmatrix} = \begin{bmatrix} 5 & 2 \\ 6 & 2 \\ 8 & 5 \end{bmatrix}$$

$$A + B = \begin{bmatrix} 2+(-1) & -3+2 \\ 5+2 & -4+2 \\ -6+0 & 1+3 \end{bmatrix} = \begin{bmatrix} 1 & -1 \\ 7 & -2 \\ -6 & 4 \end{bmatrix}$$

$$(A + B) + C = \begin{bmatrix} 1+4 & 3+(-1) \\ -1+7 & 4+(-2) \\ -2+(-6) & 1+4 \end{bmatrix} = \begin{bmatrix} 5 & 2 \\ 6 & 2 \\ 8 & 5 \end{bmatrix}$$

$$\therefore A + (B + C) = (A + B) + C$$

Q.1 i) $\frac{12!}{7!6!}$

2) ${}^nC_r = \frac{n!}{(n-r)!r!}$

Q.2 a) Given, ${}^nP_5 = 42 ({}^nP_3)$

We know that ${}^nP_r = \frac{n!}{(n-r)!}$

$$\frac{n!}{(n-5)!} = 42 \left(\frac{n!}{(n-3)!} \right)$$

Now we found,

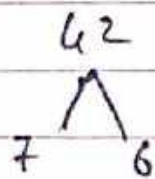
$$\frac{n!}{(n-5)!} = 42 \left(\frac{n!}{(n-3)!} \right)$$

$$\frac{(n-3)!}{(n-5)!} = 42$$

$$\frac{(n-3)! (n-4)! (n-5)!}{(n-5)!} = 42$$

$$(n-3)! (n-4)! = 42$$

Q.2 a) Now we find value divisible to 42



$$\therefore n = (-3) = 7 \quad \text{or} \quad \therefore n = (-4) = 6$$

$$\therefore n = 7 + 3 \quad \text{or} \quad \therefore n = 6 + 4$$

$$\therefore n = 10 \quad \text{or} \quad \therefore n = 10$$

$\therefore n = 10$

Q.2 b) Given,

$${}^{20}C_{16} - {}^{19}C_{16} = 9$$

we know that ${}^nC_r = \frac{n!}{(n-r)!r!}$

$$= \frac{20!}{(20-16)!16!} - \frac{19!}{(19-16)!16!}$$

$$= \frac{20!}{4!16!} - \frac{19!}{3!16!}$$

Now we find,

$$\frac{20!}{4!16!} = \frac{20 \times 19 \times 18 \times 17 \times 16!}{4!16!}$$

$$\begin{aligned}
 \text{Q.2 b) } \frac{20!}{4!16!} &= \frac{\overset{5}{\cancel{20}} \times 19 \times \overset{3}{\cancel{18}} \times \cancel{17!}}{\cancel{4} \times \cancel{3} \times \cancel{2} \times \cancel{1}} \\
 &= 5 \times 19 \times 3 \times 17 \\
 &= 4845
 \end{aligned}$$

$$\frac{19!}{3!16!} = \frac{19 \times 18 \times 17 \times \cancel{16!}}{3! \cancel{16!}}$$

$$= \frac{\overset{3}{\cancel{19}} \times 18 \times 17}{\cancel{3} \times \cancel{2} \times \cancel{1}}$$

$$= 19 \times 3 \times 17$$

$$= 969$$

$$\therefore \frac{20!}{4!16!} - \frac{19!}{3!16!}$$

$$= 4845 - 969$$

$$= 3876$$

$$A + (B + C) = \begin{bmatrix} 2 & -3 \\ 5 & -4 \\ -6 & 1 \end{bmatrix} + \begin{bmatrix} 3 & 5 \\ 1 & 6 \\ -2 & 4 \end{bmatrix}$$

$$= \begin{bmatrix} 2+3 & -3+5 \\ 5+1 & -4+6 \\ -6+(-2) & 1+4 \end{bmatrix}$$

$$= \begin{bmatrix} 5 & -2 \\ 6 & -2 \\ -8 & 5 \end{bmatrix}$$

... ①

$$RHS = (A + B) + C$$

$$A + B = \begin{bmatrix} 2 & -3 \\ 5 & -4 \\ -6 & 1 \end{bmatrix} + \begin{bmatrix} -1 & 2 \\ 2 & 2 \\ 0 & 3 \end{bmatrix}$$

$$A + B = \begin{bmatrix} 2+(-1) & -3+2 \\ 5+2 & -4+2 \\ -6+0 & 1+3 \end{bmatrix}$$

$$A + B = \begin{bmatrix} 1 & -1 \\ 7 & -2 \\ -6 & 4 \end{bmatrix}$$

$$(A + B) + C = \begin{bmatrix} 1 & -1 \\ 7 & -2 \\ -6 & 4 \end{bmatrix} + \begin{bmatrix} 4 & 3 \\ -1 & 4 \\ -2 & 1 \end{bmatrix}$$

$$= \begin{bmatrix} 1+4 & -1+3 \\ -7+(-1) & -2+4 \\ -6+(-2) & 4+1 \end{bmatrix}$$

$$= \begin{bmatrix} 5 & -2 \\ 6 & -2 \\ -8 & 5 \end{bmatrix}$$

... ②

Krushona R. Bhosale

Div : A

Roll : 16

Good Luck Page No.

Date

Q. 1)

$$a) \frac{12!}{7!6!}$$

$$= \frac{12 \times 11 \times 10 \times 9 \times 8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1}{7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1}$$

$$= \frac{2^2 \times 11 \times 2^2 \times 3 \times 2^1}{2^6 \times 3 \times 2^1 \times 1}$$

$$= 2 \times 11 \times 2 \times 3 \times 1$$

$$= \underline{\underline{132}}$$

$$b) \frac{n!}{(n-r)! r!}$$

ST. NO	Name	Sign	Remark
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3)	Ankita Baliram Chibulkar	<u>Chibulkar</u>	
4)	Sumit Sagar Ruikar	<u>Ruikar</u>	
5)	Saundarya Sukharam Sawant	<u>Sawant</u>	
6)	Govind Chandrakant Shinde	<u>G</u>	
7)	Siddhi Viraj yadav	<u>yadav</u>	
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15)	Aanya Amit Shinde	<u>A. Shinde</u>	
16)	Prathamesh Krunal Sagarvkar	<u>Pr.</u>	
17)	Praneeti Prashant Kamble	<u>Kamble</u>	
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19)	Sakshi Sanjay Chavan	<u>S. Chavan</u>	
20)	Aarman Sameer Sonekhan	<u>Sonekhan</u>	
21)	Rajakta Rajendra Gongane	<u>Rajakta</u>	
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33)	Prathamesh M. Sutar	<u>Pr</u>	
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37	Ra7 R. Shelke.	<u>R</u>	
38	Ansh. k. Sathani	<u>Ansh.k.</u>	
39.	Abhishek Dewane,	<u>Abhishek</u>	
40	Shreyas Wankar	<u>Shreyas</u>	
41	Shreyash Mali	<u>Shreyash</u>	
42	Utkarsh Karlam	<u>Utkarsh</u>	

A

Mathematics

23 June 2025

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5	Ayush Ishwar Patil	<u>Ayush</u>	
6	Farek Umarfaruk bagwan	<u>Farek</u>	
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8	Samarudhi Talandar Patil	<u>Patil</u>	
9	Sanket Rajaram Jadhav	<u>Sanket</u>	
10	Pranita Dadasa Sathe	<u>Pranita</u>	
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12	Sanika Sanjay kudale	<u>Sanika</u>	
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16	Aarati Anil Raut.	<u>Aarati</u>	
17	Prachi Dnyandeo Karpe	<u>Prachi</u>	
18	Aditya Uddhav Bunc	<u>Aditya</u>	
19	Vaishnavi Sanjay Kadam	<u>Vaishnavi</u>	
20	Arun Ramtirth Patil	<u>Arun</u>	
21	Swayam Shrawan Sutar	<u>Swayam</u>	
22	Saithak Sahas Kadam	<u>SK</u>	
23	Kedar Sanjay Vange	<u>K. Vange</u>	
24	Kautilika Ramchandra Koli	<u>Kautilika</u>	
25	Pruthviraj Vilas Suryawanshi	<u>Pruthviraj</u>	
26	Mehak Santosh Saini	<u>Mehak</u>	
27	Jadhav Harshad Manohar	<u>Jadhav</u>	
28	Ganga Shivanand Gaikwad	<u>Ganga</u>	
29	Prasad Laxman Patil	<u>Prasad</u>	
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5.	Sakshi Sanjay Chavan	Sachan
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7.	Siddharth Anil Haladkar	SH
8.	Arun Ramtirth Patil	Patil
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11.	Yash Vikasrao Tongji	Yash
12.	Sanket Rajaram Jadhav	Sanket
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17.	Sumit . S. Ruikar	Ruikar
18.	Aniruddha . B. Patil	A.B.Patil
19.	Shrikant B. Kumbhar	Shrikant
20.	Prachi Dnyandeo Karpe	Prachi
21.	Sardhak Sahas Kadam	SK
22.	Aarman Sameer Sonekhon	Aarman
23.	Yash. Satish. Gogare	Y. Gogare
24.	Bopusaheb Sharad patil	B.patil
25.	meen Said Baryi	M.S.B.
26.	Tushar shanHlal Patel	Tushar
27.	Jatiraj Arun Shinde.	Jatiraj
28.	Aditya Anil Kamble	Aditya
29.	Tanmay . Kiran Tarlekar	Tanmay
30.	Aditya Arun Patil	Aditya
31.	Nitees S Sharma	Nitees
32.	Ombai . S. Mali	Ombai
33.	Pruthviraj . V. Suryawanshi	Pruthviraj
34.	Pratiksha . J. Chavan	Pratiksha
35.	Prasanna Balasa Patil	Prasanna
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25.	moin Saif Dargi	M.S.D	
26.	Tushar shantilal Patel	Tatp	
27.	Jotiraj Arun Shinde.	Jot	
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29.	Tanmay Kiron Tarlekar	Tg	
30.	Aditga Arun Patil	Aditga	
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34.	Pratiksha J. Chavan	Pratiksha	
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5.	Prashant Gorakhnath Athare	<u>Pra</u>	
6.	Aaditi Pradip Patil	<u>Patil</u>	
7.	Tejas Tanaji Patil	<u>T.P.</u>	
8.	Rukhsar Sadik Kachhi	<u>Rukhsar</u>	
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12.	Anya Vinod Patole	<u>A. Patole</u>	
13.	Anmol Vitthal Chougale	<u>A.C.</u>	
14.	Vaishnavi Sanjay Kadam	<u>V.K.</u>	
15.	Raj Bhimrao Salvi	<u>R.B.</u>	
16.	Praneeti Prashant Kamble	<u>P. Kamble</u>	
17.	Akash Prakash Sangam	<u>A. Sangam</u>	
18.	Sanika Sanjay Kudale	<u>S. Kudale</u>	
19.	Atharv Rajendra Ingale	<u>A.P. Ingale</u>	
20.	Krutika Ramchandra Koli	<u>K. Koli</u>	
21.	Rohit Bhosale	<u>R.A. Bhosale</u>	
22.]	Namrata Majgaonkar	<u>N. Majgaonkar</u>	
23.	Ragan Sagar Singh	<u>R. Singh</u>	
24.	Priya Rajendra Sahale	<u>P. Sahale</u>	
25.]	Prathmesh Eknath Lagare	<u>P.L.</u>	
26.]	Sameuddhi Mahadev Kumbhar	<u>S. Kumbhar</u>	
27.]	Maharaj Raju Rathod	<u>M. Rathod</u>	
28.]	Pranav Kamble	<u>P. Kamble</u>	
29.]	Vedant Sakhare	<u>V.M.S.</u>	
30.]	Shradha Krishnat Mulik	<u>S.H.M.</u>	
31.]	Yogesh Sailani Madhukar	<u>Y.S.</u>	
32.]	Vikram Dilip Dhotre	<u>V. Dhotre</u>	
33.]	Abhishek Shrishail Halluri	<u>A.H.</u>	
34.]	Samrudhi Jalandar Patil	<u>S.P.</u>	
35.]	Raj Raghunath Shelke	<u>R.</u>	
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06/07/25

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2.	Anshu K. Sahani	<u>Anshu</u>	
3.	Pallavi Y. Kshatri	<u>Pallavi</u>	
4.	Grishal M. Navasi	<u>Grishal</u>	
5.	Vinay Vikas Tadhav.	<u>Vinay</u>	
6.	Abhinandan A. Patil	<u>Abhinandan</u>	
7.	Vishwadev Beldar magdum	<u>Vishwadev</u>	
8.	Vedant Ajit Upadhye	<u>Vedant</u>	
9.	Aman Raju Nayakwadi	<u>Aman</u>	

SUBJECT: CA Repeter lec

SR.NO.	STUDENT NAME	DATE:				
		19/06/25	24/06/25	1/07/25	02/07/25	08/07/25
1)	Krushna Bhorale	AB	AB	AB	AB	AB
2)	Sanket patil	AB	AB	AB	AB	AB
3)	pruthviraj ingwale	AB	AB	AB	AB	AB
4)	Aditya Gaikwad	AB	AB	AB	AB	AB
5)	Prashant Atigre	AB	AB	AB	AB	AB
6)	moh. sargir	AB	AB	AB	AB	AB
7)	Faheer. Bujwan	AB	AB	AB	AB	AB
8)	Prathmesh. K. Desai	AB	AB	AB	AB	AB
9)	Siddhi Kishor bhut	AB	AB	AB	AB	AB
10)	Pratiksha Jiratha Chavan	AB	AB	AB	AB	AB
11)	Chaitanya Anjay Patil	AB	AB	AB	AB	AB
12)	Aniket Sunil Jumbhale	AB	AB	AB	AB	AB
13)	Amit Nishant Kamble	AB	AB	AB	AB	AB
14)	Shreyash Subhash Kachare	AB	AB	AB	AB	AB
15)	Harshad Manohar Jadhav	AB	AB	AB	AB	AB
16)	Anjali Manil Phale	AB	AB	AB	AB	AB
17)	Rashmita Ramchandra Gawade	AB	AB	AB	AB	AB
18)	Akanksha Abhijit Choudhary	AB	AB	AB	AB	AB
19)	Sarthak Subas Kadam	AB	AB	AB	AB	AB
20)	Sreyash Tukaram Nandyalaker	AB	AB	AB	AB	AB
21)	Vaithavi Manojkumar Umesh Bhuraxar	AB	AB	AB	AB	AB
22)	Sameerddhi Shashil Chavan	AB	AB	AB	AB	AB
23)	Sakshi Sanjay Chavan	AB	AB	AB	AB	AB
24)	Tejas S Kamble	AB	AB	AB	AB	AB
25)	Shreyas Wankar	AB	AB	AB	AB	AB
26)	Govind. Shinde	AB	AB	AB	AB	AB
27)	Ombai Sanjay Mali	AB	AB	AB	AB	AB
28)	Vedant Asif Upadhye	AB	AB	AB	AB	AB
29)	Prem Manoj Shripur	AB	AB	AB	AB	AB
30)	Harshvardhan Sachin Thube	AB	AB	AB	AB	AB
31)	Om Laxman Ulape	AB	AB	AB	AB	AB
32)	Vikrant Ganaji Yachar	AB	AB	AB	AB	AB
33)	Atharv Kartik Kogale	AB	AB	AB	AB	AB
34)	Swayam Shrawan Sutar	AB	AB	AB	AB	AB
35)	Prathmesh Krushnat Sagivakar	AB	AB	AB	AB	AB
36)	Nishant Vijay Salvi	AB	AB	AB	AB	AB



NAME:- Siddhi Kishor Bhat

Div:- A Roll No:- 12 Sub:- CA

Test No :- 3

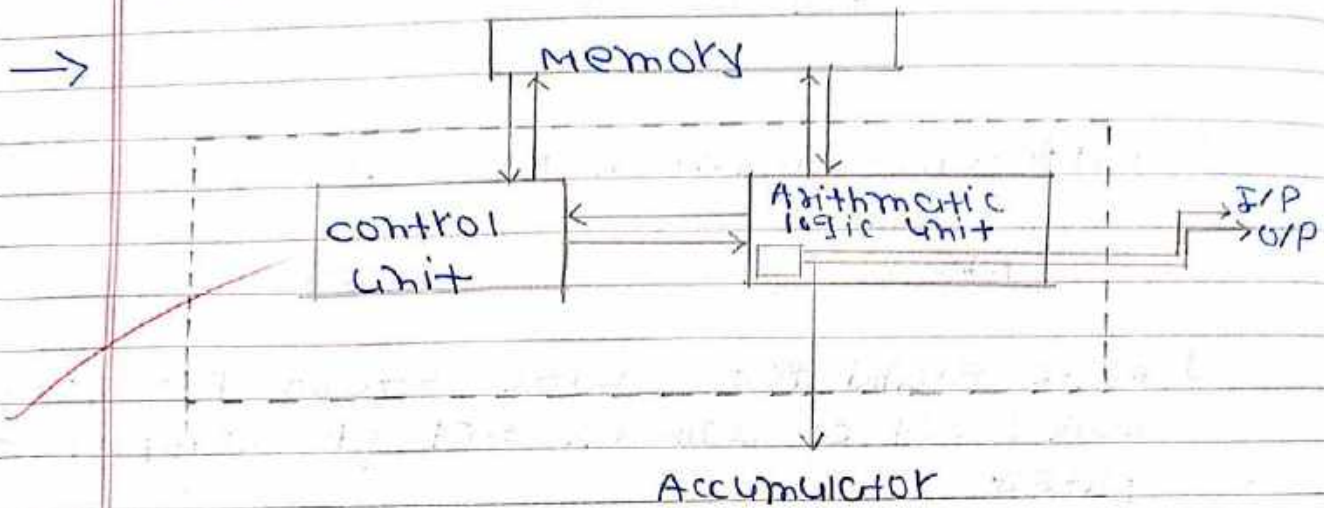
Q. 1] Difference between RISC vs CISC

→	RISC	CISC
1]	RISC stand for Reduce set of computer.	CISC stand for complex set of computer.
2]	fixed length of instruction.	variable length of instruction.
3]	less number instruction.	large number instruction.
4]	it is supported featur is addressing code	it is supported large is addressing code.
5]	it is single cycle instruction	it is several cycle instruction.
6]	it is store only register memory.	it is manipulating directly register memory.
7]	hardware control unit	microprogramming control unit.

06

Q.2] explain von neumann architecture with diagram.

Q.3]



Q.3] explain number system and its type.

→ Number system is way of writing number using specific symbol and digits.

there are ~~three~~^{four} types of number system.

- 1) Decimal number system.
- 2) Binary number system.
- 3) Octal number system.
- 4) Hexadecimal number system.

1) Decimal number system:-

Decimal number system in which is base use of base 10. there are use in day to day life.

2) Binary number system:-

Binary number system in which is base of two. there are use of 0 to 1.

3) Octal number system:-

Octal number system in is base of 8. there are use 0 to 7 digits.

4) Hexadecimal number system:-

Hexadecimal number system we use 0 to 9 digits and A to F Alphabets.

$$A = 10$$

$$B = 11$$

$$C = 12$$

$$D = 13$$

05

$$E = 14$$

$$F = 15$$

Q.9] explain full adder and half adder.

→ half Adder

* Binary Architecture

addition	carry	A	B	sum	C
0 + 0 = 0	0	0	0	0	0
0 + 1 = 1	0	0	1	1	0
1 + 0 = 1	0	1	0	1	0
1 + 1 = 0	1	1	1	0	1

* half representation

$\bar{B}$	A	B'
A	0	1
B	1	0

$\bar{B}$	A	B'
A	1	0
B	0	1

$$= \bar{A}B + A\bar{B}$$

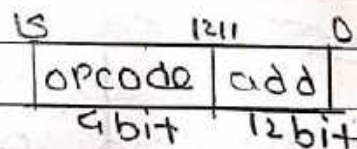
Q.5] explain instruction cycle and instruction code

→ instruction cycle

- 1] fetch instruction
- 2] Decode instruction
- 3] Read Address
- 4] execute

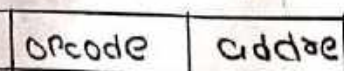
* instruction code

- instruction code divide by two parts
first in opcode.
second in address.
- instruction code content is 16 bit.
- 12 to 16 bit the instruction 4 bit used in opcode.

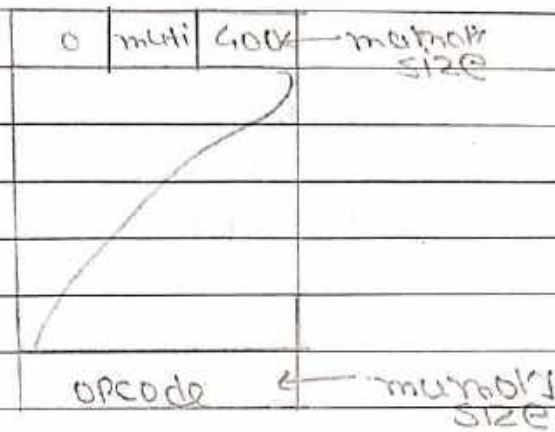


* there are types instruction code

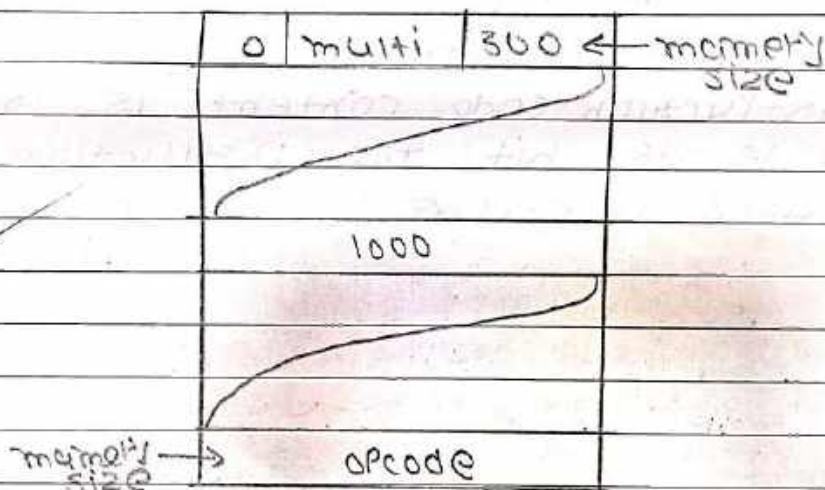
1] immediate opcode



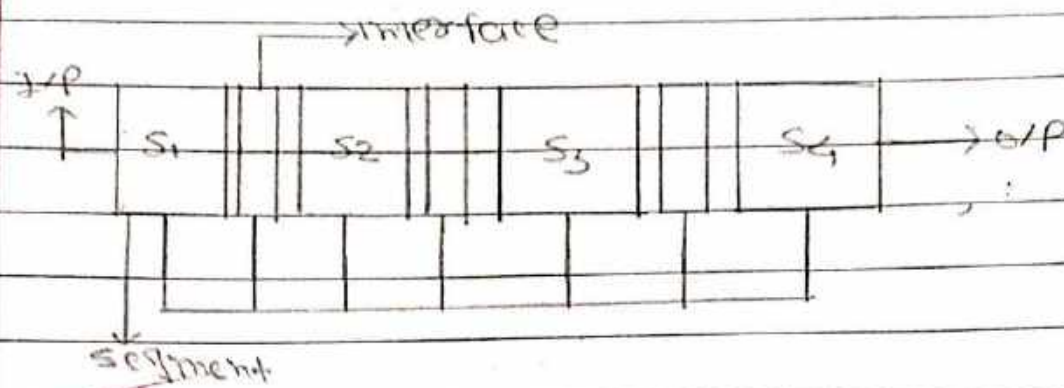
2] directed opcode



3] indirected opcode



What is pipeline and explain its types.



RISC pipeline:-

- RISC stand for Reduce set of computer.
- fixed length of instruction.
- less number instruction.
- it is supported, fewer is addressing code
- it is single cycle instruction.
- it is store memory only register memory.
- hardware control unit.

1] fetch pipeline

2] decode pipeline

3] execute pipeline

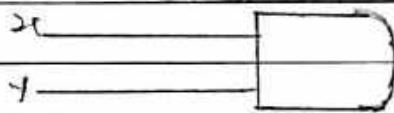
instruction pipeline

Q.7] Short Note

1] Excess -3 code

2] Logic Gates

→ 1] And Gate



$$z = A \cdot y$$

fig:- AND Gate

* Truth table

x	y	$z = A \cdot y$
0	0	0
0	1	0
1	0	0
1	1	1

2] OR Gate



fig:- OR Gate

* truth table

x	y	$x = A + y$
0	0	0
0	1	1
1	0	1
1	1	1

3] NOT Gate

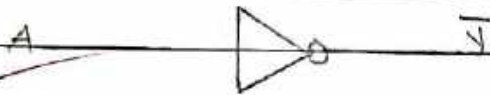


fig:- NOT Gate

* truth table

A	y
0	1
1	0

3

23
25

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21) Difference between RISC RISC vs CISC

RISC	CISC
1] RISC stands for Reduce instruction set set of computer	1] CISC stands for complex instruction set computer
2] Fix length - length of instructions	2] variable length of instructions
3] low cost	3] it has high cost
4] it has single instruction cycle	4] it has more than one instruction cycle
5] it has fixed address of instruction	5] it has more address of instruction modes
6] it has low power full	6] it is more powerful
7] It is ^{carry} only same instructions	7] it is carry more instructions

06

23

• The number system to represent the digits using numbers and symbols.

• The type of number system is defined in these bases. The bases of number show which type of number system.

The number system is classified into many types. Here are the main types of number system.

- 1] decimal number system
- 2] binary number system
- 3] octal number system
- 4] hexadecimal number system

1] decimal number system :-

The decimal number system is used to in our basic and daily life. In decimal number system we use 0 to 9 digits and also its base is 10.

ex:- $1450 = ?$

$$1 \times 10^3 + 4 \times 10^2 + 5 \times 10^1 + 0 \times 10^0$$

$$1000 + 400 + 50 + 0$$

$$= (1450)_{10}$$

2] The binary number system:-

In binary number system it has the base of 2 it is used in computer to understand the machine language it has only zeros and ones we make a binary to a combination of 0 and 1.

ex $(14)_2$

$$\begin{array}{r|l} 2 & 14 \\ \hline & 7 \\ 2 & 3 \\ \hline & 1 \end{array}$$

$$(14)_2 = (1110)_8$$

3] octal number system:-

In the octal number system we use only 8 digits and there is 0 to 7 and the base is 8 and the octal number system we can use 3 bits for convert any octal number to the binary number.

ex = $(135)_8$

$$\begin{array}{r|l} 8 & 135 \\ \hline & 16 \\ 8 & 2 \\ \hline & 0 \end{array}$$

$$\Rightarrow (207)_8$$

4] Hexadecimal number system:-

In the hexadecimal system it has base of 16 and they used to represent the number you can use 0 to 9 and also for 10 to 15 we show them in (A to F) For

making the hexadecimal number system

ex:- $(863)_{16}$

$$\begin{array}{r|l} 16 & 863 \\ \hline & 53 \\ 16 & 3 \\ \hline & 3 \end{array}$$

$$= (35F)_{16}$$

Q5 i) instruction cycle:-

The program works in side the CPU which make is easy technique to the improve the process it has making the inst. (link) to the memory and in ~~off~~ instruction cycle works and it is refer to ~~man~~ many instruction in the single process

- Fetch :- instruction to the memory
 - decode :- do the operations
 - memory :- execute the memory needed
 - write back :-
- execution :- execution the all instructions

ii) instruction code:-

The program in in instruction code is ~~add~~ added. The the code binary to make understand the system what to do

opcode :- To specify the operations

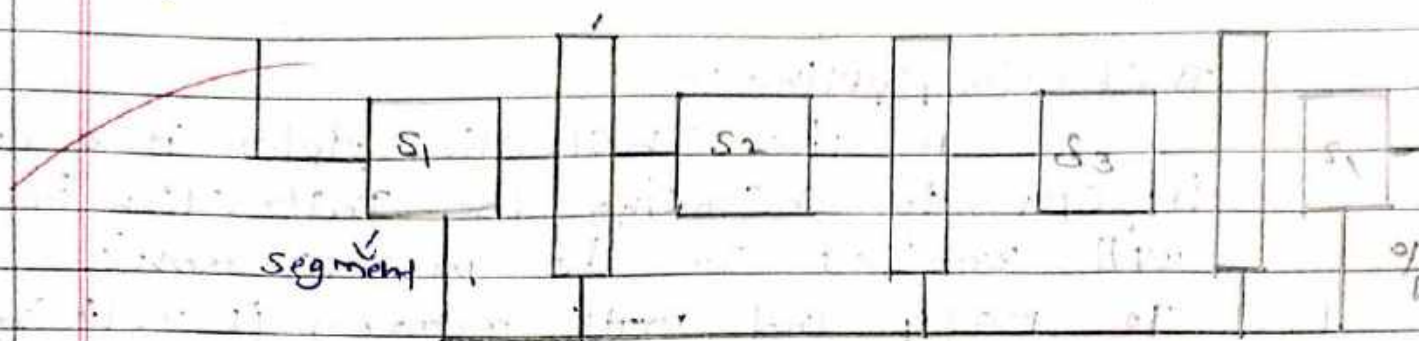
operand :- make the operation in works and do the tasks

Q6 pipeline is set of instruction which divided into segments and stages

(2) it is connected in clock and interface

(3) it is simultaneously executed the instructions inside the pipeline process.

Diagram Interface



The Types of pipeline

1] Arithmetic pipeline

2] Instruction pipeline

3] RISC

1] Arithmetic pipeline

• First compare the exponents

$$x = 0.75 \times 10^2$$

$$y = 0.75 \times 10^3$$

after comparing 3 is greater

• Align the numbers

$$x = 0.75 \times 10^3$$

$$x = 0.75 \times 10^3$$

do addition or subtraction

$$x = 0.752 \times 10^3$$

$$y = 0.752 \times 10^3$$

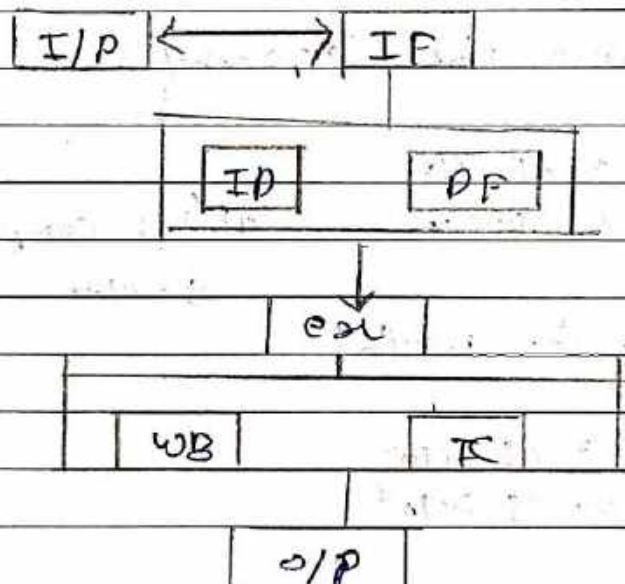
$$z = 1.5 \times 10^3$$

recognize the result :- 0.752×10^4

Instruction pipeline :-

in the instruction pipeline it works in CPU to encoding the instruction it will work to the process unit to carry out math memory is realizing in process.

- Fetch:- instruction to the memory
- decode:- do the operation
- execution:- execute the operation
- memory:- execute the memory if needed
- write back:- write back the process to the register



3] RISC it stands for Reduce instruction set of computer.

② it has fixed length of instruction

③ it has low cost

④ it has single instruction cycle

⑤ it has fixed address of instruction

⑥ it has low power

⑦ it is carry same instruction

Short notes

→ excess-3 code

excess-3 code is also known as 2's-3 code

code it is a light weight code and it

will make to adding the decimal

0001 add 3 bit to make the 2's-3 code

decimal	BCD	XS-3 code
0	0000	0011
1	0001	0100
2	0010	0101
3	0011	0110
4	0100	0111
5	0101	1000
6	0110	1001
7	0111	1010
8	1000	1011
9	1001	1100

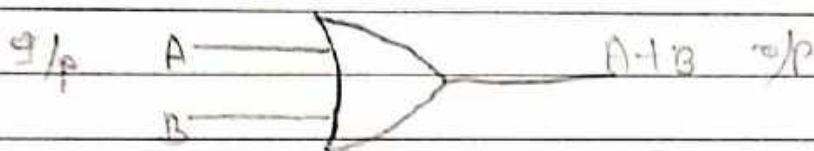
2] demorganes law

1] $\overline{A+B} = \overline{A} \cdot \overline{B}$ 1 law

2] $\overline{A \cdot B} = \overline{A} + \overline{B}$ 2 law

9) logic gates

or gate



Truth Table

A	B	A+B
0	1	1
0	0	0
1	1	1
1	0	1

and gate



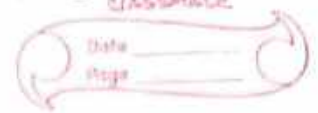
A	B	A.B
0	1	0
0	0	0
1	1	1
1	0	0

Test.

Dt. 05/07/2025

classmate

Subject :- CA (Repeater)



Sr.no	Name of the student	sign
1.	Shreyas Uttam Worekar	Gul
2]	Abhishek .S. Halluxi	Ash
3]	Amit Nishant Kamble.	Nishant
4]	Vishwadev Balasa Magdum	Vishwadev
5]	Prayakta Rajendra GONGANE	Prayakta
6]	Niteesh .S. Sharma	Niteesh
7]	Siddhi Kishor bhut	Siddhi
8]	Mein Seid Baxgir	m.3B1
9]	Yash .Rambhirao Sotar	Yash
10	Govind .C. Shinde	G
11]	Anmol .Vithal .Chougale	CM
12]	Aniket Sunil Jambhale	Aniket
13]	Sumit Sagar Ruikar	Ruikar
14]	Aditya Namdev Gaikwad.	Aditya
15]	Yash .Satish .Gongane	Y. Gongane
16]	Vedant Milind Gakhare	V.M.G.
17]	Siddhant .Gautam Pradhnyasurya	Siddhant



