

IMAYAM ARTS AND SCIENCE COLLEGE
KANNANUR, THURAIYUR.

DEPARTMENT OF COMPUTER SCIENCE AND
APPLICATIONS

SUB NAME : MICROPROCESSORS WITH C PROGRAMMING

CLASS : III BSc. PHY

SUB CODE : 16SMBEPH2

SUB HANDLER : S.PAVITHRA(COMPUTER SCIENCE)

One marks:

UNIT-1

1.Computer tools such as Word, Excel and Power Point are products owned by which of these companies?

- A. Intel
- B. Apple
- C. Microsoft
- D. Google

Answer: C Microsoft

2.A/ An is a computer program that spreads by inserting copies of itself into other executable code or documents.

- A. Operating System
- B. Computer Virus
- C. Firewall
- D. Anti-virus

Answer: B Computer Virus

3. Which of the following is an Application Software ?

- A. Compiler
- B. Operating System

- C. MS-Office
- D. None of the above

Answer: C MS-Office

4. Which of the following is an input device?
- A. Plotter
 - B. Printer
 - C. Monitor
 - D. Scanner

Answer: D Scanner

5. Which of the following is not an output device?
- A. Plotter
 - B. Printer
 - C. Monitor
 - D. Scanner

Answer: D Scanner

6. Ethernet is an example of -
- A. MAN
 - B. LAN
 - C. WAN
 - D. Wi-Fi

Answer: B LAN

7. Which of the following is an extremely fast, small memory between CPU and main memory?
- A. Main RAM and ROM
 - B. Cache memory
 - C. Secondary memory
 - D. None of the above

Answer: B Cache Memory

8. Consider the following statements :

A digital signature is

1. an electronic record that identifies the certifying authority issuing it.
2. used to serve as a proof of identity of an individual to access information or

server on Internet.

3. an electronic method of signing an electronic document and ensuring that the original content is unchanged

Which of the statements given above is/ are correct?

- A. 1 only
- B. 2 and 3 only
- C. 3 only
- D. 1, 2 and 3

Answer: C 3 only

9. is the smallest and the fastest memory in computer.

- A. RAM
- B. ROM
- C. Cache
- D. Hard drive

Answer: C Cache

10. CPU of smallest single user computer is -

- A. Micro-processor
- B. Mini-processor
- C. Nano-processor
- D. Personal processor

Answer: A Micro processor

11. The two major types of computer chips are

- A. External memory chip
- B. Primary memory chip
- C. Microprocessor chip
- D. Both 2 and 3

Answer: D Both 2 & 3

12. Microprocessors as switching devices are for which generation computers

- A. First Generation
- B. Second Generation
- C. Third Generation
- D. Fourth Generation

Answer: D Fourth Generation

13. What is the main difference between a mainframe and a super computer?
- A. Super computer is much larger than mainframe computers
 - B. Super computers are much smaller than mainframe computers
 - C. Supercomputers are focused to execute few programs as fast as possible while mainframe uses its power to execute as many programs concurrently
 - D. Supercomputers are focused to execute as many programs as possible while mainframe uses its power to execute few programs as fast as possible.

Answer: C Supercomputers are focused to execute few programs as fast as possible while mainframe uses its power to execute as many programs concurrently

14. The brain of any computer system is
- A. ALU
 - B. Memory
 - C. CPU
 - D. Control unit

Answer: C CPU

15. Storage capacity of magnetic disk depends on
- A. tracks per inch of surface
 - B. bits per inch of tracks
 - C. disk pack in disk surface
 - D. All of above

Answer: D All of the above

UNIT-2

1. How many types of groups in Instruction set -

- A. 5
- B. 6
- C. 4
- D. 3

Answer: A 5

2. The intel 8086 microprocessor is a processor

- A. 8bit

B.16bit

C.32bit

D.4 bit

Answer: B 16 bit

3.The CF is known as

A. carry flag

B. condition flag

C. common flag

D. single flag.

Answer: A Carry flag

3. The SF is called as

A. service flag

B. sign flag

C. single flag

D. condition flag

Answer: B Sign flag

4. The OF is called as

A. overflow flag

B. overdue flag

C. one flag

D. over flag

Answer: A Overflow flag

5.The SP is indicated by

A. single pointer

B. stack pointer

- C. source pointer
- D. destination pointer

Answer: B Stack Pointer

6. The BP is indicated by

- A. base pointer
- B. binary pointer
- C. bit pointer
- D. digital pointer

Answer: A Base Pointer

7. The SS is called as

- A. single stack
- B. stack segment
- C. sequence stack.
- D. random stack

Answer: B Stack Segment

8. The JS is called as

- A. jump the signed bit
- B. jump single bit
- C. jump simple bit
- D. jump signal it

Answer: A Jump the signed bit

9. CS connect the output of

- A. encoder
- B. decoder
- C. slave program

D. buffer

Answer: B Decoder

10. The First Microprocessor was.

A. Intel 4004

B. 8080

C. 8085

D. 4008

Answer: A Intel 4004

11. Consider the following registers:

A. Accumulator and flag register

B. B and C register

C. D and E register

D. H and L register

Which of these 8-bit registers of 8085 microprocessor can be paired together to make a 16 bit register?

A. 1,3 & 4

B. 2,3 & 4

C. 1,2 & 4

D. 1,2 & 4

Answer: B 2,3 & 4

12. The cycle required to fetch and execute an instruction in a 8085 microprocessor is which one of the following?

A. Clock cycle

B. Memory cycle

C. Machine cycle

D. Instruction cycle

Answer: D Instruction cycle

13. In an Intel 8085A, which is the first machine cycle of an instruction?

A. An op-code fetch cycle

B. A memory read cycle

C. A memory write cycle

D. An I/O read cycle

Answer: An op-code fetch cycle

14. The number of output pins in 8085 microprocessors are

A. 40

B. 27

C. 21

D. 19

Answer: A 40

15. In 8085 name of the 16 bit registers is

A. stack pointer

B. program counter

C. both 1 and 2

D. none of these

Answer: C both 1 & 2

UNIT-3

1.The register of 8086 are_____ bits in size.

- A. 8
- B. 12
- C. 16
- D. 20

Answer: C 16

2. Which of the following is a 16-bit register?

- A.AL
- B.AX
- C.AH
- D. All of the mentioned

Answer: B AX

3.If the size of the segment is 64 kb, what will be the starting and ending off set addresses of it

- A.0000H to 7FFFH
- B.0000H to FFFFH
- C.8000H to FFFFH
- D.00000H to FFFFFH

Answer: B 0000H to FFFFH

4.What is the opcode of STAX B -----

- A.03
- B.02
- C.08
- D.09

Answer: B 02

5. What is the opcode of LDAX B -----

- A.09

B.07

C.0A

D.0C

Answer: C 0A

6.What is the opcode of SHLD -----

A.20

B.21

C.26

D.22

Answer: D 22

7.What is the opcode of MOV H, L -----

A.64

B.65

C.6A

D.6C

Answer: B 65

8.What is the opcode of MOV M, A-----

A.74

B.77

C.76

D.73

Answer: B 77

9.What is the opcode of ADD M-----

A.8D

B.8C

C.8E

D.8F

Answer: C 8E

10. What is the opcode of SBB A -----

A. 9C

B. 9E

C. 9F

D. 9D

Answer: C 9F

11. Which stack is used in 8085?

A. FIFO

B. LIFO

C. FILO

D. LILO

Answer: B LIFO

12. Why 8085 processor is called an 8-bit processor

A. because 8085 processor has 8 bit ALU

B. because 8085 processor has 8 bit data bus

C. because 8085 processor has 16 bit data bus

D. because 8085 processor has 16 bit address bus

Answer: A because 8085 processor has 8 bit ALU

13. Which is SIM in context of microprocessor?

A. Select Interrupt Mask

B. Sorting Interrupt Mask

C. Set Interrupt Mask

D. Set Integer Mask

Answer: C Set Interrupt Mask

14.8085 Micro processor was introduced in

A.1971

B.1976

C.1972

D.1978

Answer: B 1976

15.The register AX is formed by grouping

A.AH & AL

B.BH & BL

C.CH & CL

D.DH & DL

Answer: A AH & AL

UNIT-4

1. The library function strchr () finds the first occurrence of a substring in another string.

A. Yes

B. Strstr ()

C. Strchr ()

D. Strnset ()

Answer: B Strstr ()

2. The words if, else, auto, float etc. has/ve predefined meaning and users cannot use them as variables. These words are called

- A. constant
- B. identifier
- C. data types
- D. Keywords

Answer: D Keywords

3. What is/are the type/types of numeric constant/constants used in c programming language?

- A. Integer constant
- B. Real constant
- C. Both [A] & [B]
- D. None of the above

Answer: C Both [A] & [B]

4. E-num types are processed by?

- A. Compiler
- B. Preprocessor
- C. Linker
- D. Assembler

Answer: A Compiler

5. How many keywords are there in c ?

- A. 31
- B. 32
- C. 64
- D. 63

Answer: B 32

6.. What is size of int in C ?

- A. bytes
- B. 4 bytes
- C. 8 bytes
- D. Depends on the system/compiler

Answer: D Depends on the system/compiler

7. Which of the following data type will throw an error on modulus operation(%)?

- A. Int
- B. Char
- C. Float
- D. long

Answer: C float

8. Which of the following is true for variable names in C?

- A. Variable names cannot start with a digit
- B. Variable can be of any length
- C. They can contain alphanumeric characters as well as special character
- D. Reserved Word can be used as variable name

Answer: A Variable names cannot start with a digit

9. What is the output of this program?

```
void main ()  
  
{  
  
int x = 10;  
  
float x = 10;  
  
printf ("%d", x)  
  
}
```

- A. Compilations Error
- B. 10
- C. 10.0000
- D. 10.10

Answer: A Compilations Error

10. When double is converted to float, the value is?

- A. Rounded
- B. Truncated
- C. Depends on the standard
- D. Depends on the compiler

Answer: D Depends on the compiler

11. To print out a and b given below, which of the following printf() statement will you use?

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

```
float a=3.14;
```

```
double b=3.14;
```

- A. printf("%f %lf", a, b);
- B. printf("%Lf %f", a, b);
- C. printf("%Lf %Lf", a, b);
- D. printf("%f %Lf", a, b);

Answer: A printf("%f %lf", a, b)

12. Which of the following s branching statement of c language?

- A. if statement
- B. if..else statement
- C. Switch statement
- D. All of these

Answer: D All of these

13. _____ is the built in multiway decision statement in c?

- A. Switch
- B. If
- C. While
- D. For

Answer: A Switch

14.. Which of the following is allowed in a C Arithmetic instruction

- A. []
- B. {}
- C. ()
- D. None of the above

Answer : C ()

15.Which of the following shows the correct hierarchy of arithmetic operations in C

- A. / + * -
- B. * - / +
- C. + - / *
- D. * / + -

Answer : D * / + -

UNIT-5

1. What is the output of this program?

```
int main()
{
extern int i;
i = 20;
printf("%d", sizeof(i));
return 0;
}
```

- A.20
- B. 0
- C. Undefined reference to i
- D. Linking Error

Answer: C Undefined reference to i

2. What is the output of this program?


```
int main()
{
    int x = 10;
    {
        int x = 0;
        printf("%d",x);
    }
    return 0;
}
```

A.10

B. Compilation Error

C. 0

D. Undefined

Answer: C 0

3. What is the output of this program?

```
int main()
{
    int a = 5;
    int b = 10;
    int c = a+b;
    printf("%i",c);
}
```

A.0

B. 15

C. Undefined i

D. Any other Compiler Error

Answer: B 15

4. Which of the following is the correct order of evaluation for the below expression?

$z = x + y * z / 4 \% 2 - 1$

A. $* / \% + - =$

B. $= * / \% + -$

C. $/ * \% - + =$

D. $* \% / - + =$

Answer: A $* / \% + - =$

5. Which of the following are unary operators in C?

a. !

b. Size of

c. ~

d. &&

A. a, b

B. a, c

C. b, d

D. a, b, c

Answer: D a, b, c

6. Which of the following is a logical operator?

A. !

B. &&

C. ||

D. All of the above

Answer: D All of the above

7. Relational operators cannot be used on:

A. String

- B. Float
- C. Long
- D. structure

Answer: D Structure

8. How would you round off a value from 6.66 to 7.0?

- A. Ceil (6.66)
- B. Floor (6.66)
- C. Roundup (6.66)
- D. Round to (6.66)

Answer: A ceil (6.66)

9. What is the output of this program?

```
void main ()
```

```
{
```

```
    int c = - -14;
```

```
    printf("%d", c);
```

```
}
```

A.13

B.14

C.-1

D. Compilation Error

Answer: B 14

10. Which of the following is not an arithmetic operation?

A. $a *= 20$

B. $a /= 30$

C. $a \% = 40$

D. $a! = 50$

Answer: D $a! = 50$

11. What is the right way to initialize an array?

A. `int num[6] = { 2, 4, 12, 5, 45, 5 } ;`

B. `int n{ } = { 2, 4, 12, 5, 45, 5 } ;`

C. `int n{6} = { 2, 4, 12 } ;`

D. `int n(6) = { 2, 4, 12, 5, 45, 5 } ;`

Answer: A `int num[6] = { 2, 4, 12, 5, 45, 5 } ;`

12. What are C Tokens?

A. The smallest individual units of a C program

B. The basic element recognized by the compiler

C. The largest individual units of a program

D. 1 & 2 Both

Answer: D 1 & 2 Both

13. Which is the right way to declare a constant in C?

A. `int constant var = 10;`

B. `int const var = 10;`

C. `const int var = 10;`

D. 2 & 3 Both

Answer: D 2 & 3 Both

14. What is an array?

A. An array is a collection of variables that are of the dissimilar data type.

B. An array is a collection of variables that are of the same data type.

C. An array is not a collection of variables that are of the same data type.

D. None of the above.

Answer: B An array is a collection of variables that are of the same data type

15. In C, if you pass an array as an argument to a function, what actually gets passed?

A. Value of elements in array

B. First element of the array

C. Base address of the array

D. Address of the last element of array

Answer: C Base address of the array

2marks:

UNIT-1

1.What is bus?

A bus is a set of wires that connect the above components.

Buses are responsible for movement of data from input devices, to output devices and from/to CPU and memory.

2.What is hardware?

Hardware is any physical electronic device, computers, adapter cards and ethernet cables are examples.

3.What is software?

Software is a broad term for the programs running on hardware.

Familiar kinds of software are operating systems, which provide overall control for computer hardware, and applications, which are optional programs used for a particular job.

4.What is firmware?

Firmware is a very specific, low-level program for the hardware that allows it to accomplish some specific task.

Firmware programs are permanent, i.e., difficult or impossible to change.

5.What is memory?

A memory is a semiconductor or magnetic device used for storage of digital data.

A memory location is a group of storage devices that will hold one data word.

6.List out the types of memory

1. Registers – Fastest
- 2.Primary memory – RAM & ROM
- 3.Secondary memory – Serial Access & Semi-random Access

7.Define RAM & ROM

RAM- Random Access Memory

- Both read and write operation
- Temporary programs are used
- Volatile

ROM- Read Only Memory

- Only read
- Permanent programs are stored
- Non-volatile

8.What is cache memory?

Cache memory is a small-sized type of volatile computer memory that provides high-speed data access to a processor and stores frequently used computer programs, applications and data.

9.What are the types of CCD?

Electron multiplying CCD, Intensified CCD, Frame-transfer CCD and Buried-channel CCD.

10.What is CCD?

Charge coupled devices can be defined in different ways according to the application for which they are used or based on the design of the device.

UNIT-2

1.What is status flags?

There is a set of five flip-flops which indicates status arising after the execution of arithmetic and logic instructions.

2.Symbols and Abbreviations

Symbols	Meaning
Addr	16-bit address of the memory location
A	Accumulator
PSW	Program Status Word
data 16	16-bit data
Data	8-bit data
M	Memory whose address in H-L Pair

3.Explain MVI M, data.

Move Immediate data to memory

[{H-L}] ←data. States: 10. Flags: none. Addressing immediate/reg: indirect.
Machine cycle: 3

The data is moved to memory location whose address is in H-L pair.

EX:

LXI H, 2400H Load H-L pair with 2400H.

MVI M, 08 Move 08 to the memory location, 2400 H

HLT Halt

4.Define Addressing modes.

Each instruction requires certain data on which it has to operate.

It has already been explained that there are various techniques to specify data for instructions.

These instructions are called addressing modes.

5.What are the types of addressing modes.

1.Direct addressing

2.Register addressing

3.Register indirect addressing

4.Immediate addressing

6.What is Direct addressing?

The address of the operand is given in the instruction itself.

Ex:

STA 2400 H	store the content of the accumulator in the memory location 2400H
32, 00, 24	The above instruction in the code form

In this instruction 2400H is the memory address where data is to be stored. It is given in the instruction itself. The 2nd and 3rd bytes of the instruction specify the address of the memory location. Here it is understood that the source of the data is accumulator.

7. What is implicit addressing?

There are certain instructions which operate on the content of the accumulator. Such instruction not require the address of the operand.

Ex: CMA, RAL, RAR etc.,

8. List out some instructions in Arithmetic group.

ADD r, ADD M, ADC r, ADC M, ADI data, ACI data, DAD rp, SUB r, etc.,

9. List some instructions in Logical group.

ANA r, ANA M, ANI data, ORA r, ORA M, ORI data, XRA r, etc.,

10. List some instructions in Data Transfer group.

Move data – MOV r, M, MOV M, r, MVI r, data, MVI M, data, LXI rp, data 16, LDA addr, STA addr, etc.,

UNIT-3

1. Write a program to transfer 07H in register L.

Memory Address	Machine Code	Mnemonics	Operands	Comments
2000H	2E, 07	MVI	L, 07	Move immediate 07 in register L
2002 H	76	HLT		stop

The instruction MVI L, 07 will move the data 07 to the register L. The instruction will stop the program. The machine code for the instruction MVI L, 07 is 2E, 07. The 1st byte of the machine code is 2E which is the Hex code for the instruction MVI L. The second byte is the data 07. The machine code for HLT is 76. The machine codes are fetch in the memory locations, starting from the

memory locations 2000 H. Memory location 2000 H contains 2E, 2001 H contains 07 and memory location 2002 H contain 76, After the execution of a program, the contents of Register L can be examined which are 07.

2. Write a program to load register A with 08 h and then move it to register c.

Memory Address	Machine Code	Mnemonics	Operands	Comments
2000H	3E, 08	MVI	A,08	Get 08 in register A
2002 H	4F	MOV	C, A	Move the contents of register A to register C
2003 H	76	HLT		Stop

In this program the instruction MVI A, 08 H will place the given data 08 1H in the register A. The Hex code for MVI A, 08 H is 3E, 08 IH where 3E is the Hex code for MVI A. The instruction MOV C, A will move the contents of register A to the register C. Its machine code is 4F. With this instruction the data of register A is copied into the register C. It means the given data, is 08 H which was previously placed in register A is now copied into the register C.

The instruction HLT whose machine code is 76 stops the program. The memory locations required for this program are 2000 H to 2003 H. Any other memory locations can be selected. After the execution of a program, the contents of register C can be examined.

3. Write a program to load the contents of memory location 2050 H into accumulator and then move this data into register B

Memory Address	Machine Code	Mnemonics	Operands	Comments
2000H	3A, 50, 20	LDA	2050 H	Load the contents of memory 20250 H into the accumulator
2002 H	4F	MOV	B, A	Move the contents of register B
2004 H	76	HLT		Stop

The instruction LDA 2050 H will load the contents of memory location 2050 H into the accumulator. The machine code for the instruction LDA is 3A. The instruction MOV B, A (Machine code 47) will move the contents of Accumulator to the register B. First of all data 07 is fetch in the memory location 2050. Then memory locations 2000 H contain 3A, 2001 H contain 50 H, 2002 H contains 20 H, 2003 H contains 47 H and 2004 H contains 76 H. After execution of a program, the contents of register B can be examined.

4.The contents of memory location 20250 H are FF H. Move these contents to Register C.

Data: Suppose memory location 20250 H contains FF H

Memory Address	Machine Code	Mnemonics	Operands	Comments
2000H	3E, 08	MVI	A, 08 H	Move immediate data of 08 H in the Accumulator
2002 H	3C	INR	A	Increment the contents of accumulator by 1
2003 H	32, 50, 20	STA	2050 H	Store the contents of accumulator in memory location 2050 H
2004 H	76	HLT		Stop

In this program, data is fetch in memory location 2050 H. This data is to fetch register C. The first instruction LXI H, 2050 H will load to the memory address 2050 H in the register pair H-L. The machine code for the instruction LXI H is 21. It should be fetch in the memory address 2000 H. For the memory address 2050 H, the second byte 50 H (lower address) is fetch in memory location 2001 H and the first byte of address 20 H (higher address) is fetch in memory location 2002 H. The instruction MOV C, M will move the contents of memory location whose address is in the H-L pair registers to the register C. It means the data FF H is copied in the register C from the memory address 2050 H. The register C can be examined which will contain data FF H.

5. Transfer the contents of memory location 2050 H to the register B and the contents of 2051 H to register C. The contents of memory location 2050 H are 10 and 2051 are 11.

Data: Suppose memory location 2050 H contains 10 and 2051H contains 11

Memory Address	Machine Code	Mnemonics	Operands	Comments
2000H	21, 01, 24	LXI	H, 2401 H	Place address of the 1 st number in H-L register pair
2003 H	7E	MOV	A, M	Move contents of memory addressed by H-L pair of the accumulator
2004 H	23	INX	H	Increase the contents of H-L pair by 1
2005 H	86	ADD	M	Add the 2 nd number in the first number, and the results is in accumulator.
2006 H	32, 03, 24	STA		Store the result in the memory location 2403 H
2009 H	76	HTL		Stop

The instruction LXI H, 2050 H will place the memory address 2050 H in the register pair H-L. The machine code for the instruction LXI H, 2050 H is 21, 50, 20. Then the instruction MOV B, M will copy the contents of memory location 2050 H whose address is in the H-L register pair to the register B. The machine code for the instruction MOV B, M is 46. The instruction INX H will increase the contents of register pair H-L by 1ie, after the instruction INX, the H-L register pair will contain the address 2051 H. The machine code for the instruction INX. H is 23.

The instruction MOV C, M will move the contents of memory location whose address is in the H-L register pair i.e., (contents of memory address 2051 H) to the register C. The machine code for the instruction MOV C, M is 4E. After the execution of a program, the contents of register B and of register C can be examined, which will contain 10 H and 11 H respectively.

6. Write an 8085 program to mask the lower nibble of an 8-bit number.

Address	Mnemonics	Operand	Op code	Comments
2000	LDA	3000H	3A, 00,30	Load H-L pair with data from 3000H.
2003	ANI	F0H	E6	AND Immediate F0H with register A
2004			F0	Immediate value F0H.
2005	STA	300H	32, 01,30	Store the result at memory location 3001H
2008	HLT		76	Halt

Out put:

Before Execution

3000H:45H

After Execution:

3001H:40H

7. Write an 8085 program to shift left 8-bit .

Address	Mnemonics	Operand	Op code	Comment
2000	LDA	3000H	3A, 00,30	Load H-L pair with data from 3000H.
2003	RAL		17	Shift left accumulator
2005	STA	3001H	32, 01, 30	Store the result at memory location 300H.
2008	HLT		76	Halt.

Out put:

Before Execution:

3000H:05H

After Execution:

3001H:0AH

8. Write an 8085 program to shift right 8-bit

Address	Mnemonics	Operand	Op code	Commitment
2000	LDA	3000H	3A, 00, 30	Load H-L pair with data from 3000H.
2003	RAR		1F	Shift right accumulator.
2004	STA	3001H	32, 01, 30	Store the result at memory location 3001H.
2007a	HLT		76	Halt

Output:

Before Execution:

3000H:04H

After Execution:

3001H:02H

9. Write an 8085 program to shift 8-bit by 2bit (sum 16 bits)

Address	Mnemonics	Operand	Op code	Comment
2000	LDA	3000H	3A, 00, 30	Load a with data from 3000H
2003	RAL		17	Shift Left Accumulator
2004	RAL		17	Shift Left Accumulator
2005	STA	3001H	32, 01, 30	Store the result at location 3001H
2008	HLT		76	Halt

Output:

Before Execution:

3000H:05H

After Execution:

3001H:14H

UNIT-4

1. What is constant in C?

C-constants and literals.

Advertisements constants refer to fixed values that the program may not alter during its execution. These fixed values are also called literals.

Constants can be of any of the basic data types like an integer constants, a floating constants, a characters constants or a string literal.

2. What are Keywords. example?

C keywords are predefined, reserved words used in programming that have special meanings to the compiler. Keywords are part of the syntax and they cannot be used as an identifier, for example here, int is a keyword that indicates money is a variable of type int (integer).

example:- int money;

3. What is identifier and its types?

An identifier is a string of alphanumeric characters that begins with an alphabetic-character or an underscore character that are used to represent various programming elements such as variables, functions, array, structures, unions and so on.

Actually an identifier is a user-defined word.

Types:

1. Internal identifier
2. external identifier

4. What is variable and example?

A variable is nothing but a name given to a storage area that our programs can manipulate. Each variable in c has a specific type, which determines the size and layout of the variables memory; the range of values that can be stored within that memory; and the set of operations that can be applied to the variable.

Example: char, int, float, double, void

5.What is operators?

C language supports a rich set of built-in operators. An operator is a symbol that tells the compiler to perform a certain mathematical or logical manipulation. Operators are used in programs to manipulate data and variables. C operators can be classified .

6.Types of operators?

- 1.Arithmetic operators
- 2.Relational operators
- 3.Logical operators
- 4.Bitwise operators
- 5.Assignment operators
- 6.Conditional operators
- 7.Special operators

7.Mathematical operations?

C mathematical operations are a group of functions in the standard library of the c programming language implementing basic mathematical functions. All function use floating-point numbers in one manner or another.[1][2] all functions use floating-point numbers in one manner or another.

8.What is conditional operators?

Conditional operator in c, also called a ternary-operators, is one of the operators, which used in the decision-making process. The c programming conditional operator returns the statements depends upon the given expression result.

Example: Text_expression? statement1: statement2

9. Arithmetic operators?

The arithmetic operators are some of the c programming operator, which are used to perform arithmetic operations includes operators like addition, subtraction, multiplication, division and modules.

All these arithmetic operators in c are binary operators which means they operate on two operands.

Example:

+ addition $10+2=12$

- Subtraction $10-2=8$

/ division $10/2 =5$

% modulus $10\%2=0$

10. What is Bitwise Operator and Special Operator?

Bitwise operator work on bits and perform bit-by-bit operation. The truth table for &, |, and ^ is as follows:-

P	Q	P&Q	P q	P^q
0	0	0	0	0
0	1	0	1	1
1	1	1	1	0
1	0	0	1	1

Assume a=60 and b=13 in binary format, they will be as follows-

A=00111100

B=00001101

A&B=00001100

A|B=00111101

A^B=00110001

-A=11000011

UNIT-5

1. What is Decision making and branching?

C - Decision Making Decision making structures require that the programmer specifies one or more conditions to be evaluated or tested by the program, along with a statement or statements to be executed if the condition is determined to be true, and optionally, other statements to be executed if the condition is determined to be false.

2. Input function?

Scanf() function is used to give data to the variables using keyboard.

SYNTAX

```
Scanf ("control string",&variable1&varaibale2,&variable n);
```

Ex: Scanf ("%d,%d" &a &b);

3. What is output function?

Print f() is used to output the result of the program to the user.

SYNTAX:

```
print f("control string",list);
```

Ex: print f("%d",c);

4. Types of decision making?

Simple if statement

If...else statement

Else if ladder

Nested if else

Switch statement

5. Simple if statement explain?

Simple if statement if used to execute one statement or group of statement for a particular condition.

SYNTAX:

```
if(test condition)
{
Statement 1;
} Next statement;
```

6. If... else statement?

If ..else statement is used to execute one group of statement .If the test condition is true or other group if the test condition is false.

SYNTAX:

```
if(test condition)
```

```

{
    Statement 1 ;
}
Else
{
    Statement 2;
} Next statement;

```

7.else if statement explain?

Else if ladder statement is used to take multiway decision. This statement s formed by joining if else statement .

In which each else contain another if else.

SYNTAX:

```

if (test condition );
{
    Statement 1 ;
}
Else(test condition 2)
{
    Statement 2;
}
Else(test condition 3)
{
    Statement 3;
}
Else(test condition 4)
{
    Statement ;
} next statement

```

8.Looping statement define and types?

Loops structure are used to execute a group of statement repeatedly until same condition is satisfied.

Types: while, do while, for.

9. Define While loop?

This is the simple looping statement

SYNTAX:

```
while (expression)
{
    Body of the loop;
} Next statement;
```

10. Define do... while loop?

This is also a simple looping statement.

SYNTAX:

```
do
{
    Body of the loop;
}
While (test condition);
Next statement;
```

11. For loop definition and syntax?

For statement is used to execute a statement or a group of statements repeatedly.

SYNTAX:

```
for(control variable; test condition increment or decrement)
{
    Body of the loop;
} Next statement;
```

12. What is an array and its types?

An array is defined as a group of related data items stored by means of a single variable name.

One-dimensional array.

Two-dimensional array

Multi-dimensional array

13. One-dimensional array and its initialization?

An array name with only one subscript is known as one dimensional array.

SYNTAX:

array name[subscript]

Initialization: The process of assigning initial value to one dimensional array during declaration is called array initialization.

14. Two-dimensional array and its initialization?

An array with two subscripts is known array.

SYNTAX: data type array name [subscript 1][subscript 2]

Initialization: The process of assigning initial value to one dimensional array during declaration is called array initialization.

15. Multi-dimensional array exp?

C language provides the facility for multi-dimensional array. Multi dimensional array are contain

One array name with more than three-more subscript.

SYNTAX: array name [s1],[s2],.....[sn]

5marks:

UNIT-1

1. What are the basic components of digital computer?

2. Write short notes on memory?

3. Explain i) hardware ii) software iii) firm ware

4. Explain the types of memory.

5. Difference between RAM and ROM

6. what is buses?

UNIT-2

1. What is status flags and explain some symbols and meanings? *

2. What is addressing modes and its types? **

3.Explain some instructions in Data transfer group.

4.Explain some instructions in Arithmetic group.**

5. Explain some instructions in Logical group.**

6. What is the interrupts and order of priority?

UNIT-3

1.Write the decimal addition 2 8-bit numbers -Add 84D & 75D **

2. Write the decimal addition 2 8-bit numbers -Add 98H & 9A H *

3. Write the decimal addition 2 8-bit numbers -Add 49 H & 56 H*

4.Write the program in masking.

5.Write a program in shifting program.

UNIT-4

1.Describe constant and its types.

2. Explain variables detailly.

3.What are the data types explain it. **

4.What is an operator and its types **

5.Explain arithmetic operators

6.Explain logical operators

7.Explain relational operators

8.Explain increment and decrement operator **

9. Explain bitwise and special operators

10. Explain arithmetic expression and mathematical function. **

UNIT-5

1.Explain if, if else with examples. **

2.Explain else if and ladder with examples **

3.Explain switch statement with examples

4.Explain break and continue with examples **

5.Explain while and for loop with examples

6. What is an array and its types. ***

7.Explain multi-dimensional array. **

8.Explain the initialization of array.

10marks:

UNIT-1

1.Importance of micro-processor.

2.Explain memory and its types **

3.Explain the generation of computers.

4.Explain i) flash memory ii) CD memory iii) cache memory *

5.Explain CCD and its types. **

UNIT-2

1.Explain Addressing modes and its types with example.

2.Explain Data transfer group detailed***

3.Explain Arithmetic Group detailed***

4.Explain Logical group detailed ***

5.Explain Status flags detailed

UNIT-3

1.Write addition of 2 8-bit number, sum- 16-bits or NOR- 5B98H, 8E4CH***

2.Write the complements programs ***

3.Write the Multibyte decimal addition

4.Write the Multibyte subtraction

UNIT-4

1.Explain C-tokens detailed

2.Explain constant and its types detailly***

3.Explain Variables detailly****

4.Explain operators and its types***

5.Explain Arithmetic expressions and mathematical functions

UNIT-5

1.Explain the switch data functions.***

2.Explain decision making and branching -detailly***

3. Explain decision making and looping -detailly***

4.Explain array and its types.****