Department of Computer Science

Class : F. Y. B.Sc.(Comp. Sci.)   Sem. – I

Paper : Basic Programming using C (CSCO- 1101)

Objective Questions

1. The diamond shaped symbol is used in flowcharts to show the
A. decision box
B. statement box
C. error box
D. if-statement box

2. The link with another part of the program or connectors in flowchart are shown in
A. rhombus
B. parallelogram
C. circle
D. trapezoid

3. The part of algorithm which is repeated for the fixed number of times is classified as
A. iteration
B. selection
C. sequence
D. reverse action

4. What is a list of instructions in a proper order to solve a problem called?
A. Sequence
B. Flowchart
C. Algorithm
D. None of these

5. Every C program consists of _____ function(s).
A. Only one
B. Only two
C. One or two
D. One or many

6. Which of the following is a not a keyword in C language?
A. void

B. sizeof
C. Getchar
D. short

7. Which of the following is not a correct variable type?
A. float
B. real
C. int
D. double
E. char

8. What is the only function all C programs must contain?
A. start()
B. system()
C. main()
D. program()
E. None of the above.

9. ALU stands for
A. Arithmetic Logic Unit
B. Application Logic Unit
C. Array Logic Unit
D. None of above

10. The brain of any computer system is
A. ALU
B. CPU
C. None of above
D. Memory
E. Control Unit

11. The list of coded instructions is called
A. Computer Program
B. Algorithm
C. Flowchart
D. Utility Program
E. None of the above

12. Which of the following is not input device
A. Touch Pad

B. Mouse
C. Printer
D. Joystick

13. Which the following is application software?
A. Compiler
B. Power Point
C. Debugger
D. None of the above

14. Which of the following is system software?
A. Linux
B. Word
C. Excel
D. Tally

15. Which of the following is invalid type of memory
A. RAM (Random Access Memory)
B. PRAM (Programmable Read Access Only Memory)
C. ROM (Read Only Memory)
D. EPROM (Erasable Programmable Read Only

16. Which of the following is the Valid Measurement unit of memory
A. GB
B. MB
C. KB
D. All

17. Flowcharts and Algorithms are used for
A. Better Programming
B. Easy testing and Debugging
C. Efficient Coding
D. All

18. An Algorithm represented in the form of programming languages is _____
A. Flowchart
B. Pseudo code
C. Program
D. None

19. Which of the following is a pictorial representation of an algorithm?
A. Pseudo code
B. Program
C. Flowchart
D. Algorithm

20. Which of the following symbol in a flowchart are used to indicate all arithmetic processes of adding, subtracting, multiplying and dividing ?
A. Input/output
B. terminal
C. Processing
D. Decision

21. which of the following file conations the programmer?s original program code?
A. Application file
B. Executing
C. Object file
D. Source file

22. Algorithm is
A. step by step execution of program
B. Object file
C. Executable file
D. Source file

23. Which of the following is not a characteristic of good algorithm?
A. Precise
B. Ambiguous
C. Finite number of steps
D. Logical flow of control

24. Diagrammatic representation of an algorithm is
A. Flowchart
B. Data flow Diagram
C. Algorithm design
D. Pseudo code

25. What symbol is used to represent output in a flowchart?
A. Square
B. Circle

C. Parallelogram

D. Triangle

26. Which of the following is not a type of computer programming language?

A. Natural language

B. Machine Language

C. High-level language

D. Binary languages

27. The tool used to convert a C program to machine language is called as

A. Linker

B. Language translator

C. Compiler

D. Preprocessor

28. The programmer original program code is called as

A. Object file

B. Source file

C. Executable file

29. C- language is

A. Assembly level Language

B. High level Language

C. Low level Language

D. All of above

30. What is a program

A. A set of instruction

B. A set of algorithm

C. A set of pseudo code

31. Who developed the C language

A. Dennis Ritchie

B. Ken Thompson

C. Matrin Richards

D. Patric Naughton

32. Which year was C developed in?

A. 1975

B. 1980

C. 1972
D. 1971

33. The C language has been developed at
A. AT & T Bell Labs
B. IBM
C. Borland International
D. Sun Microsystems

34. The C programs are stored with _____ extension
A. obj
B. bak
C. c
D. cpp

35. Every statement in C program is to be terminated by a_____
A. dot(.)
B. semi-colon(;)
C. colon(:)
D. Question mark(?)

36. The real numbers (numbers with decimal fractional value) in C can be expressed which of the following forms?
A. Fractional from only
B. Exponent form only
C. ASCII
D. Both fractional and Exponetial

37. A character variable can store how many characters at a time?
A. 1 character
B. 8 characters
C. 255 character
D. None

38. What will be stored in the variable ch? if we write the statement char ch='Z'?
A. ASCII value of Z
B. Z along with the single inverted commas
C. The character Z
D. None of above

39. What is the maximum value that an signed integer constant can have?

A. 32768

B. 32767

C. 1.7014e+38

D. 256

40. An identifier in C cannot start with?

A. A number

B. An Alphabet

C. A special symbol other than underscore

D. An capital character

41. Which of the following special symbol allowed in an identifier?

A. * (asteric)

B. _ (underscore)

C. -(hyphen)

D. |(pipeline)

42. Which of the following variable declaration is correct?

A. int length

B. char int

C. int long

D. All

43. Which of the following cannot be used in identifiers?

A. Letters

B. Spaces

C. Underscore

D. Digits

44. Which of the following is not a keyword

A. void

B. int

C. main

D. for

45. Which of the following identifier is incorrect

A. Int

B. INT

C. INt

D. int

46. Which of the following identifier is correct
A. Simple_Int
B. void
C. #3_friends
D. 3 friends

47. The memory space taken for a char type data is
A. 2 bytes
B. 4 bytes
C. 8 bytes
D. 1 bytes

48. The memory space taken for a int type data is
A. 2 bytes
B. 4 bytes
C. 8 bytes
D. 10bytes

49. The memory space taken for a float type data is
A. 2 bytes
B. 4 bytes
C. 8 bytes
D. 10bytes

50. The memory space taken for a long double type data is
A. 2 bytes
B. 4 bytes
C. 8 bytes
D. 10bytes

51. Which of the following function calculate the square of x in c?
A. sqr(x)
B. pow(2,x)
C. pow(x,2)
D. power(x,2)

52. Library function pow() belongs to which header file?
A. stdio.h

B. string.h
C. conio.h
D. math.h

53. What is the final value of x when the code int x; for(x=0; x<10; x++) {} is run?
A. 10
B. 9
C. 0
D. 1

54. How many times is a do while loop guaranteed to loop?
A. 0
B. Infinity
C. 1
D. variable

55. Which is the following invalid header file in C?
A. math.h
B. mathio.h
C. string.h
D. ctype.h

56. The keyword break cannot be simply used within
A. do-while
B. if-else
C. for
D. while

57. The format identifier %i is also used for _____ data type?
A. char
B. int
C. float
D. double

58. The keyword used to transfer control from a function back to the calling function is
A. switch
B. goto
C. go back
D. return

59. Who is known as the father of C Language ?
A. James A. Sosling
B. Vjarne Stroustrup
C. Dennis Ritchie
D. Dr. E. F. Codd

60. Name the loop that executes at least once
A. For
B. If
C. do-while
D. while

61. Which bitwise operator is suitable for turning off a particular bit in a number?
A. && operator
B. & operator
C. || operator
D. ! operator

62. %f access specifier is used for?
A. Integer type
B. Character type
C. Floating type
D. data type

63. Which one is not a reserve keyword in C Language?
A. auto
B. main
C. case
D. register

64. A C variable name can start with a _____
A. Number
B. Plus Sign (+)
C. Underscore
D. Asterisk (*)

65. Prototype of a function means _____
A. Name of Function
B. Output of Function
C. Declaration of Function

D. Input of a Function

66. Which of the following shows the correct hierarchy of arithmetic operations in C
A. / + * -
B. * - / +
C. + - / *
D. * / + -

67. A C variable cannot start with
A. An alphabet
B. A number
C. A special symbol other than underscore
D. both (b) and (c)

68. Which of the following is allowed in a C Arithmetic instruction
A. []
B. {}
C. ()
D. None of the above

69. A declaration float a, b; occupies ___ of memory
A. 1 byte
B. 4 bytes
C. 8 bytes
D. 16 bytes

70. The printf() function retunes which value when an error occurs?
A. Positive value
B. Zero
C. Negative value
D. None of these

71. Which among the following is a unconditional control structure
A. do-while
B. if-else
C. goto
D. for

72. continue statement is used
A. to go to the next iteration in a loop

B. come out of a loop

C. exit and return to the main function

D. restarts iterations from beginning of loop

73. Which of the following is an example of compounded assignment statement?

A. a = 5

B. a += 5

C. a = b = c

D. a = b

74. In the expression - x + y + 3z =20

A. x + y is a keyword

B. 3 and 20 are constants

C. 3z is a constant

D. y is a variable and z is a constant

75. Which options shows the correct hierarchy of arithmetic operators

A. **, * or /, + or -

B. **, *, /, +, -

C. **< /< *< +<-

D. / or *, - or +

76. Compiler generates ___ file.

A. Executable code

B. Object code

C. Assembly code

D. None of the above.

77. Standard ANSI C recognizes _____ number of keywords

A. 30

B. 32

C. 24

D. 36

78. Which is the only function all C programs must contain?

A. start()

B. system()

C. main()

D. printf()

79. Which of the following is not a correct variable type?
A. float
B. real
C. int
D. char

80. Which Committee standardize C Programming Language ?
A. W3C
B. ISO
C. TRAI
D. ANSI

81. What is meaning of void sum (int, int); ?
A. sum is function which takes int arguments
B. sum is a function which takes two int arguments and returns void
C. it will produce compilation error
D. Can't comment

82. How many loops are there in C
A. 2
B. 3
C. 4
D. 1

83. Which programming language is more faster among these?
A. Java
B. Php
C. C
D. Visual Basix

84. Is it possible to run program without main() function?
A. Yes
B. No

85. Is it possible to return two values by any function?
A. Yes
B. No

Answer in One Sentence

1. What is a compiler?
2. Explain ones complement operator with example.
3. Define flowchart.
4. Give any two limitations of an array.
5. Which standard input-output library functions are used for string input and output respectively?
6. What is the scope of a variable?
7. What is the newline character?
8. 'C' is middle level language. Comment.
9. State different data types.
10. Who developed 'C' language?
11. Explain nested loops.
12. Write any two string functions.
13. State the use of putc() function.
14. Which function is used to calculate X^n in 'C' from math.h library? Give syntax.
15. What is the use of comment operator?
16. List the different backslash character constants.
17. Which function is used to calculate square root of A in 'C' from math.h library? Give syntax.
18. What do you mean by keywords?
19. What is the use of getchar() and putchar() function?
20. What do you mean by base address of an Array?
21. What is the use of << and >> operators?
22. What is source code?
23. What is token?
24. Explain conditional operator?
25. What is string?
26. What is assembly language? Give example.
27. What are library functions in C?
28. What is escape sequence for Null character?
29. Give syntax and use of Typecast operator.
30. 'Functions can return multiple values'. Comment.
31. What is machine language?
32. Define operator.
33. What is formal parameter?
34. While passing array to a function, address of first element of array is passed. State true or false.
35. State True/False: 'C' performs bound checking for an array.
36. What do you mean by exit control loop?

37. State properties of Algorithm.
38. –XYZ is a valid 'C' identifier: Comment.
39. Explain nested loop.
40. State the use of putc() function.
41. State one advantage of assembly language.
42. Define array.
43. 'A function can return multiple values.' Comment.
44. Give any two limitations of an array.
45. Every C program starts with function main(). State True/False.
46. Library function can be defined by the user. State True/False.
47. Function not returning any value is known as void. State True/False.
48. Define storage class.
49. What is the use of return statement?
50. What is recursion?

Short Answer Question

1. Find the output of the following program and justify :
   ```
   main( )
   { int x = 100;
   printf ("\n x = %d", 10 + x++);
   printf ("\n x = %d", 10 + ++x);
   }
   ```
2. Find and justify the output of the following program :
   ```
   main( )
   { int i;
   for (i = 0; i < 5; i++)
   func1( );
   }
   func1( )
   {
   static int count = 0;
   count = count +l;
   printf ("%d \t", count);
   }
   ```
3. What will be the output of the following code? Justify :
   ```
   main()
   {
           int  a=10, b=20;
           {
   ```

```
                int c=30;
                printf("%d %d %d",a,b,c);
        }
        printf("%d %d %d",a,b,c);
}
```

4. What will be the output of the following code? Justify :

```
main()
{
        auto int i=10;
                {
                auto int i=20;
                printf("%d\n",i);
                }
                printf("%d\n",i);
}
```

5. What will be the output of the following code? Justify :

```
#include<stdio.h>
void func(int x, int y, int z)
{
printf("%d %d %d",x,y,z);
}

void main()
{
        int  var=15;
        func(var,var++,++var);
}
```

6. Find and justify output of the following program:

```
main()
{
int  i;
for(i=0;i<5;i++)
f1();
}
f1()
{
int count=0;
count=count+1
printf("%d \t",count);
```

}

7. What will be the output of the following code? Justify.

```
#include<stdio.h>
main()
{
int  i=3;
switch(i)
{
case 0          : printf("I am here");
                        break;
case 1 + 0      : printf("I am in second case");
                        break
case 4/2              : printf("I am in third case");
                        break
case 8% 5      : printf("good bye");
                        break
}
}
```

8. What is the output of this C code? Justify.

```
#include<stdio.h)
main()
{
int a=1,b=1,c;
c=a++ + b;
printf("%d, %d",a,b);
}
```

9. Find and justify output of the following program:

```
main()
{
        abc(100,200);
}
abc(int n)
{
        Printf("%d",n);
}
```

10. What will be the output of the following code? Justify :

```
main()
{
int a=2;
```

```
printf("%d   %d",a,a++);
}
```

11. What will be the output of the following code? Justify :
```
main()
{
int i;
i=0x10 + 010 + 10;
printf("%d",i);
}
```

12. What will be the output of the following code? Justify :
```
main()
{
char ch='A';
printf("%d   %d",sizeof(ch),sizeof('A'));
}
```

13. What will be the output of the following code? Justify :
```
main()
{
int x=100;
printf("\n x=%d",10 +  x++);
printf("\n x=%d",10 +  ++x);
}
```


Write short notes on the following

1. Call by value
2. Call by reference
3. Global variable
4. Local variable
5. Relational operator
6. Logical operator
7. Bitwise operator
8. Increment operator
9. User defined Data types
10. Recursion
11. Loops
12. Row major and column major array representation
13. jump statement
14. Storage Classes

Long Answer Question

1. Explain two methods of passing arguments to function with example.
2. What is an identifier? Give the rules of identifier.
3. Differentiate between if-else and switch statement.
4. Write an algorithm and draw a flowchart to find the maximum of 3 no's.
5. Write a 'C' program to accept a number and check whether it is an Armstrong number.
6. Write a 'C' program to accept a m×m matrix and display the sum of diagonal elements of the matrix.
7. Write a 'C' program to accept 'n' numbers and print the even numbers.
8. Write a 'C' program to display the following pattern :
   A
   B C
   D E F
   G H I J
9. Explain for loop with example.
10. Explain any four string handling functions with usage
11. Write algorithm and draw flowchart for calculating maximum of two numbers.
12. Differentiate between while loop and do-while loop.
13. Explain the concept of recursion. Write a 'C' program to calculate factorial of a given number using recursion.
14. Write a 'C' program to accept two matrices, add them and display the output.
15. Write a 'C' program to accept 'n' numbers and calculate sum of factorial such as:
    for n=3; 1! + 2! + 3! =9
16. Write a 'C' program to count no. of digits, no. of spaces, no. of lower case letters and no. of upper case letters from a given input string.
17. Explain actual parameters and formal parameters.
18. Explain break and continue statement with example.
19. Explain switch-case statement with suitable example.
20. What is function? Explain its definition and declaration with suitable example.
21. Explain array with its types. Give example.
22. Explain the following function with example
    i. Isupper()   ii. islower()   iii. isalpha()   iv. isdigit()
23. Write algorithm and draw flowchart for swapping of two numbers.
24. Write a program to reverse all elements of a matrix.
25. Write a program to check the given number is positive or negative using function.
26. Write a menu driven program using string library functions for :
    i. Copy of string
    ii. Concatenation of two strings.
27. Explain goto and break statement.

28. Write an algorithm to calculate roots of quadratic equation.
29. Write a function which prints first n terms of Fibonacci series.
30. Write a program which prints given matrix with its row sums and columns sums.

i/p			o/p			
1	2	3	1	2	3	6
4	5	6	4	5	6	15
7	8	9	7	8	9	24
			12	15	18	0

31. Write a program to calculate $y=x^n$ using recursion function.
32. Differentiate algorithm and flowchart.
33. Write a function to calculate the length of a string. (Don't use std. library function)
34. Write a 'C' program to accept n numbers and sort them in descending order.
35. Write a 'C' program to reverse the digits of a number.
36. Explain the difference between bitwise AND and logical AND operators with the help of examples.
37. Write an algorithm and draw a flowchart to find the maximum of n no's.
38. Write a program to check whether given number is Armstrong number or not.
39. Write a program to find transpose of a matrix.
40. Explain the types of constants in 'C'.
41. Explain any five functions from library ctype.h.
42. Explain the following function with example
    i. strlen()   ii. strcat() iii. strcmp() iv. strcpy() v. strrev()
43. Write a 'C' program to accept mxn matrix and print sum of all elements of a matrix.
44. Explain 'C' program development life cycle.
45. Write algorithm and draw a flowchart for sum of digit until one digit.
46. Explain the following with example:
    a. Assignment operator
    b. Conditional operator
    c. Comma operator
    d. Type cast operator
    e. Sizeof operator
47. Write a 'C' program to insert number of characters of substring at given position in string.
48. Write a 'C' program to accept 'n' numbers and print the even numbers.
49. Write a 'C' program to count no. of digits, no. of spaces, no. of lower case letters and no. of upper case letters from a given input string.
50. Write an algorithm and draw a flowchart to check if a number is prime.
51. What is an identifier? Give the rules of identifier.
52. Differentiate between if-else and switch statement.

53. Write a 'C' program to accept mxn matrix and print sum of diagonal elements of a matrix.
54. Write a 'C' program to accept n names and display them and search for a particular name.
55. Explain any two storage classes with proper example.

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