1. Neelam wants to share her code with a colleague, who may modify it. Thus, she wants to include the date of the program creation, the author and other she wants to include the date of the program creation, the author and other information with the program. What component should she use?

A. Header files

B. Iteration

C. Comments

D. Preprocessor directive

2. A data type is stored as a 6 bit signed integer. Which of the following cannot be represented by this data type?

A. -12

B. 0

C.32

D.18

E.64

3. A language has 28 different letters in total. Each word in the language is composed of maximum 7 letters. You want to create a data-type to store a word of this language. You decide to store the word as an array of letters. How many bits will you assign to the data-type to be able to store all kinds of words of the language?

a. 7

b. 35

c. 28

d. 196

4. A 10-bit unsigned integer has the following range:

a.0 to 1000

b.0 to 1024

c.1 to 1025

d.0 to 1023

5. Parul takes as input two numbers: a and b. a and b can take integer values between 0 and 255. She stores a, b and c as 1-byte data type. She writes the following code statement to process a and b and put the result in c. c = a + 2*b To her surprise her program gives the right output with some input values of a and b, while gives an erroneous answer for others. For which of the following inputs will it give a wrong answer?

a. a = 10 b = 200

b. a = 200 b = 10

c. a = 50 b = 100

d. a = 100 b = 50

6. Which is used to convert source code to target language?

a. linker

b. compiler

c. executer

d. loader

7. Tricha wants to store a list of binary data. Which of following data types should she use?

a. Integer

b. Float

c. Character

d. Boolean

8. The datatype is store as 6 bit unsigned integer. Which of the following can't be represented by the this datatype:

a. -12

b. 0

c. 32

d. 18

9. A pseudo-code is used. Assume that when two data-types are processed through an operator, the answer maintains the same data-type as the input data-types. Assume that all data-types have enough range to accommodate any number. If two different data-types are operated on, the result assumes the more expressive data-type.
What will be the output of the following pseudo-code statements:

```
integer a = 456, b, c, d =10
b = a/d
c = a - b
print c
```

a. 410

b. 410.4

c. 411.4

d. 411

10. Stuti is making a questionnaire of True-false questions. She wants to define a data-type that stores the response of the candidate for the question. What is the most-suited data type for this purpose?

a. integer

b. boolean

c. float

d. character

11. A character in new programming language is stored in 2 bytes. A string is represented as an array of characters. A word is stored as a string. Each byte in the memory has an address. The word "Mahatma Gandhi" is stored in the memory with starting address 456. The letter 'd' will be at which memory address?

a. 468

b. 480

c. 478

d. 467

12. Ankita takes as input 2 integer numbers, a and b, whose value can be between 0 and 31. He stores them as 5 bit numbers. He writes the following code to process these numbers to produce a third number c.

c = 2*(a - b)

In how many minimum bits should Ankita store c?
a. 6 bits
b. 7 bits
c. 8 bits
d. 9 bits

13. Prashant takes as input 2 integer numbers, a and b, whose value can be between 0 and 127. He stores them as 7 bit numbers. He writes the following code to process these numbers to produce a third number c.

c = a - b

In how many minimum bits should Prashant store c?
a. 6 bits
b. 7 bits
c. 8 bits
d. 9 bits

14. A new language has 15 possible letters, 8 different kinds of punctuation marks and a blank character. Rahul wants to create two data types, first one which could store the letters of the language and a second one which could store any character in the language. The number of bits required to store these two data-types will respectively be:
a. 3 and 4
b. 4 and 3
c. 4 and 5
d. 3 and 5

15. Rajni wants to create a data-type for the number of books in her book case. Her shelf can accommodate a maximum of 75 books. She allocates 7 bits to the data-type. Later another shelf is added to her book-case. She realizes that she can still use the same data-type for storing the number of books in her book-case. What is the maximum possible capacity of her new added shelf?
a. 52
b. 127
c. 53
d. 75

16. A 10-bit unsigned integer has the following range:
a. 0 to 1000
b. 0 to 1024
c. 1 to 1025
d. 0 to 1023

17. Saumya writes a code that has a function that calls itself. Which programming concept is Saumya using?
a. This is bad programming practice and should not be done.
b. Recursion
c. Decision Making
d. Overloading

18. Consider the following function:

```
function calculate ( n ) {

if (n equals 5)

return 5

else

return (n + calculate (n-5))

end
```

}

Shishir calls the function by the statement, calculate (20). What value will the function return?
a. 50
b. 200
c. 35
d. 20

19. Choose the correct answer:

```
function g(int n) {
if (n > 0)
return 1;
else
return -1;
}
function f(int a, int b) {
if (a > b)
return g(b-a);
if (a < b)
return g(a-b);
return 0;
}
```

If f(a,b) is called, what is returned?

a. Always -1

b. 1 if a > b, -1 if a < b, 0 otherwise

c. -1 if a > b, 1 if a < b, 0 otherwise

d. 0 if a equals b, -1 otherwise

20. Choose the correct answer Afzal writes a piece of code, where a set of three lines occur around 10 times in different parts of the program. What programming concept can he use to shorten his program code length?

a. Use for loops

b. Use functions

c. Use arrays

d. Use classes

21. What is the difference between a function and a method?

a. Function is a named code unlike method which is a part of an object

b. Function contained in an object is called a method

c. Function cannot change variables outside its scope unlike method

d. There is no difference between the two

22. Consider the following code:

```
function modify(a,b)
{
Integer c,d=2
c= a*d+ b
return c
}
function calculate()
{
integer a = 5, b = 20, c
integer d= 10
c = modify(a, b);
c = c+ d
print c
}
calculate()
```

a. 80
b. 40
c. 32
d. 72

23. What is the term given to the variable whose scope is beyond all the scopes i.e., it can be accessed by all the scopes?

a. Universal Variable

b. Global Variable

c. External Variable

d. Auto Variable

24. Anu wants to make a function that is not bound to any identifier. Which of the following functions should she incorporate in her program?

a. Anonymous Function

b. Friend Function

c. Null Function

d. Global Function

25. Choose the correct answer Tanuj writes the code for a function that takes as input n and calculates the sum of first n natural numbers.

```
Function sum( n ) {

if(??)

return 1

else

return (n + sum(n-1))

end

}
```

Fill in ?? in the code.

a. n equals 1

b. n equals 2

c. n >= 1

d. n > 1

26. Choose the correct answer Shrishti writes the code for a function that computes the factorial of the inputted number n.

```
function factorial (n)
{
if(n equals 1)
return 1
else
— MISSING STATEMENT —
end
}
```

Fill in the missing statement.

a.return factorial(n-1)

b.return n*factorial(n)

c.return n*(n-1)

d.return n*factorial(n-1)

27. The value of EOF is_____

a) -1

b) 0

c) 1

d) 10

28. Which of the following true about FILE *fp

a) FILE is a keyword in C for representing files and fp is a variable of FILE type.

b) FILE is a structure and fp is a pointer to the structure of FILE type

c) FILE is a stream

d) FILE is a buffered stream

29. The first and second arguments of fopen are _____

a) A character string containing the name of the file & the second argument is the mode

b) A character string containing the name of the user & the second argument is the mode

c) A character string containing file poniter & the second argument is the mode

d) None of the mentioned

30. If there is any error while opening a file, fopen will return

a) Nothing

b) EOF

c) NULL

d) Depends on compiler

31. fseek() should be preferred over rewind() mainly because

a) rewind() doesn't work for empty files

b) rewind() may fail for large files

c) In rewind, there is no way to check if the operations completed successfully

d) All of the above\

32. FILE is of type _____

a) int type

b) char * type

c) struct type

d) None of the mentioned

33. FILE reserved word is

a) A structure tag declared in stdio.h

b) One of the basic datatypes in c

c) Pointer to the structure defined in stdio.h

d) It is a type name defined in stdio.h

34. getc() returns EOF when

a) End of files is reached

b) When getc() fails to read a character

c) Both of the above —

d) None of the above

35. Which of the following functions from “stdio.h” can be used in place of printf()?

a) fputs() with FILE stream as stdout.

b) fprintf() with FILE stream as stdout.

c) fwrite() with FILE stream as stdout.

d) All of the above three – a, b and c.

e) In “stdio.h”, there’s no other equivalent function of printf()

36. fputs adds newline character

a) True

b) False

c) Depends on the standard

d) Undefined behavior

37. puts function adds newline character

a) True

b) False

c) Depends on the standard

d) Undefined behavior

38. Till the array elements are not given any specific value, they are supposed to contain all _____

a) Zero

b) Garbage value

c) One

d) Combination of zero and one.

39. If array is initialized where it is declared, then mentioning _____ of array is optional.

a) Data type

b) Dimension

c) name

d) Data type and Dimension

40. What happen if we assign a value to an array element whose subscript exceeds the size of array?

a) The program will give no error

b) No output

c) program will crash

d) none of these

41. What will be output of the following program

```
int main()
{
int b[4]={5,1,32,4};
int k,l,m;
k=++b[1];
l=b[1]++;
m=b[k++];
printf("%d, %d, %d",k,l,m);
return 0;
}
```

a) 2, 2, 4
b) 3, 2, 32
c) 3, 2, 4
d) 2, 3, 32

42. What will be output of the following program where c=65474 and int=2 bytes.

```
int main()
{
int c[3][4]={2,3,1,6,4,1,6,2,2,7,1,10};
printf("%u, %u\n", c+1, &c+1);
return 0;
}
```

a) 65482, 65498
b) 65476, 65476
c) 65476, 65498
d) No output

43. what will be output of the following program

```
int main()
{
int a[5],i=0;
while(i<5)
a[i]=++i;
for(i=0;i<5;i++)
printf("%d,",a[i]);}
```

a) garbage value,1,2,3,4
b) 1,2,3,4,5
c) Error
d) Program crash

44. What will be output of the following program

```
int main()
{
float a[]={12.4, 2.3, 4.5, 6.7};
printf("%d, %d", sizeof(a), sizeof(a[0]));
return 0;
}
```

a) 16 bytes, 4 bytes
b) 4 bytes, 4 bytes
c) 8 bytes, 4 bytes
d) None of these

45. In 2 Dimensional Array, it is necessary to mention _____ dimension.

a) second

b) first

c) both

d) none of these

46. An array can be passed to a function by _____

a) Call by reference

b) call by value

c) Call by reference by passing base address to a function

d) Both a and c

47. What will be output of the following program

```
int main()
{
int arr[4]={3,4,5,6};
int k[4];
k=arr;
printf(“%d\n”,k[1]);
}
```

a) Compile Time Error
b) 4
c) No output
d) Program crashes

48. What is the output of this C code?

```
#include <stdio.h>
void main()
{
m();
void m()
{
printf(“SimpleWay2Code”);
}
}
```

a) SimpleWay2Code
b) Compile time error
c) Nothing
d) Varies

49. What is the output of this C code?

```
#include <stdio.h>
void main()
{
static int x = 3;
x++;
if (x <= 5) {
printf(“hello”);
main();
}
}
```

a) Run time error
b) hello
c) Infinite hello
d) hello hello

50. The value obtained in the function is given back to main by using _____ keyword?

a) return

b) static

c) new

d) volatile

51. What is the problem in the following declarations?

```
int func(int);

double func(int);

int func(float);
```

a) A function with same name cannot have different signatures

b) A function with same name cannot have different return types

c) A function with same name cannot have different number of parameters

d) All of the mentioned

52. What is the return-type of the function sqrt()

a) int

b) float

c) double

d) depends on the data type of the parameter

53. What is the output of this code having void return-type function?

```
#include
void foo()
{
return 1;
}
void main()
{
int x = 0;
x = foo();
printf(“%d”, x);
}
```

a) 1
b) 0
c) Runtime error
d) Compile time error

54. The output of the code below is

```
#include <stdio.h>
void main()
{
int k = m();
printf(“%d”, k);
}
void m()
{
printf(“hello”);
}
```

a) hello 5
b) Error
c) Nothing
d) Garbage value

55. The output of the code below is

```
#include <stdio.h>
int *m()
{
int *p = 5;
return p;
}
void main()
{
int *k = m();
printf("%d", k);
}
```

a) 5
b) Junk value
c) 0
d) Error

56. What will be the output of the program?

```
#include <stdio.h>
int main()
{
int i=1;
if(!i)
printf("SimpleWay2Code,");
else
{
i=0;
printf("C-Program");
main();
}
return 0;
}
```

A. prints "SimpleWay2Code, C-Program" infinitely
B. prints "C-Program" infinetly
C. prints "C-Program, SimpleWay2Code" infinitely
D. Error: main() should not inside else statement

57. How many times the program will print "SimpleWay2Code" ?

```
#include <stdio.h>
int main()
{
printf("SimpleWay2Code");
main();
return 0;
}
```

A. Infinite times
B. 32767 times
C. 65535 times
D. Till stack overflows

58. Ashima wants to print a pattern which includes checking and changing a variables value iteratively She decides to use a loop/condition. Which of the following options should she use such that the body of the loop/condition is executed atleast once whether the variable satisfies the entering condition or not?

a.For Loop

b.While Loop

c.Do While Loop

d.Switch Case

59. The construct “if (condition) then A else B” is for which of the following purposes?

a.Decision-Making

b.Iteration

c.Recursion

d.Object Oriented Programming

60. Ravi and Rupali are asked to write a program to sum the rows of 2X2 matrices stored in the array A. Ravi writes the following code (Code A): for n = 0 to 1 sumRow1[n] = A[n][1] + A[n][2] end Rupali writes the following code (Code B): sumRow1[0] = A[0][1] + A[0][2] sumRow1[1] = A[1][1] + A[1][2] Comment upon these codes (Assume no loop- unrolling done by compiler):

a. Code A will execute faster than Code B.
b. Code B will execute faster than Code A
c. Code A is logically incorrect.
d. Code B is logically incorrect.

61. Integer a =40, b =35, c=20, d =10 Comment about the output of the following two statements •

Print a*b/c-d

Print a*b/(c-d)

Comment about the output of the following two statements

a.Differ by 80

b.Same

c.Differ by 50

d.Differ by 160

62. What is the output of the following pseudo code?

Int a =456,b,c,d=10;

b=a/d;

c=a-b;

print c;

a.411.4

b.411

c.410.4

d.410

63. Function main() {

Integer i=0.7

Static float m=0.7

If(m equals i)

Print(“We are equal”)

Else If(m>i)

Print(“I am greater”)

Else

Print(“I am lesser”)

a.We are equal

b.I am greater

c.I am lesser

d.This code will generate an error

64. What is the output of this C code?

```
#include <stdio.h>

void main()

{

static int i;

printf(“i is %d”, i);

}
```

a) 0

b) 1

c) Garbage Value

d) Run time error

65. What is the output of this C code?

```
#include <stdio.h>

int *i;

int main()

{

if (i == NULL)
```

```
printf(“true\n”);

return 0;

}
```

a) true

b) true only if NULL value is 0

c) Compile time error

d) Nothing

66. What is the output of this C code?

```
#include <stdio.h>

static int x = 5;

void main()

{

x = 9;

{

int x = 4;

}

printf(“%d”, x);
```

}

a) 9

b) 4

c) 5

d) 0

67. The scope of an automatic variable is:

a) Within the block it appears

b) Within the blocks of the block it appears

c) Until the end of program

d) Within the block it appears & Within the blocks of the block it appears

68. Automatic variables are allocated space in the form of a:

a) stack

b) queue

c) priority queue

d) random

69. Which of the following is a storage specifier?

a) enum

b) union

c) auto

d) volatile

70. Automatic variables are stored in

a) stack

b) data segment

c) register

d) heap

71. What is the output of this C code?

```
#include <stdio.h>

int main()

{

register int i = 10;

int *q = &i;

*q = 11;

printf(“%d %d\n”, i, *q);

}
```

a) Depends on whether i is actually stored in machine register

b) 10 10

c) 11 11

d) Compile time error

72. Register storage class can be specified to global variables

a) True

b) False

c) Depends on the compiler

d) Depends on the standard

73. Register variables reside in

a) stack

b) registers

c) heap

d) main memory

74. Which of the following operation is not possible in a register variable?

a) Reading the value into a register variable

b) Copy the value from a memory variable

c) Global declaration of register variable

d) All of the mentioned

75. The output of the code below is

```
#include <stdio.h>

int a;

void main()

{

if (a)

printf(“Hello”);

else

printf(“world”);

}
```

a) Hello

b) World

c) compile time error

d) none of the mentioned

76. The output of the code below is

```
#include <stdio.h>

void main()

{

int a = 5;

if (true);

printf(“hello”);

}
```

a) It will display hello

b) It will throw an error

c) No Output

d) Depends on Compiler

77. The output of the code below is

```
#include <stdio.h>

void main()

{

int a = 0;

if (a == 0)
```

printf(“hi”);

else

printf(“how are u”);

printf(“hello”);

}

a) hi

b) how are you

c) hello

d) hihello

78. The following code ‘for(;;)’ represents an infinite loop. It can be terminated by.

a) break

b) exit(0)

c) abort()

d) all of the mentioned

79. The correct syntax for running two variable for loop simultaneously is.

a) for (i = 0; i < n; i++) for (j = 0; j < n; j += 5)

b) for (i = 0, j = 0;i < n, j < n; i++, j += 5)

c) for (i = 0; i < n;i++){}

d) for (j = 0; j < n;j += 5){}

80. Which for loop has range of similar indexes of ‘i’ used in for (i = 0;i < n; i++)?

a) for (i = n; i>0; i–)

b) for (i = n; i >= 0; i–)

c) for (i = n-1; i>0; i–)

d) for (i = n-1; i>-1; i–)

81. The output of this C code is?

```
#include <stdio.h>
void main()
{
int x = 0;
for (x < 3; x++)
printf(“Hello”);
}
```

a) Compile time error

b) Hello is printed thrice

c) Nothing

d) Varies

82. The output of this C code is?

```
#include <stdio.h>

void main()

{

double x = 0;

for (x = 0.0; x < 3.0; x++)

printf(“Hello”);

}
```

a) Run time error

b) Hello is printed thrice

c) Hello is printed twice

d) Hello is printed infinitely

83. The output of this C code is?

```
#include <stdio.h>

int main()

{
```

```
do
printf(“Inside while loop “);
while (0);
printf(“Outside loop\n”);
}
```

a) Inside while loop

b) Inside while loop

Outside loop

c) Outside loop

d) Infinite loop

84. The output of this C code is?

```
#include <stdio.h>
int main()
{
int i = 0;
do {
i++;
```

```
printf(“Inside while loop\n”);

} while (i < 3);

}
```

a) Inside while loop Inside while loop Inside while loop

b) Inside while loop Inside while loop

c) Depends on the compiler

d) Compile time error

85. Which keyword can be used for coming out of recursion?

a) break

b) return

c) exit

d) Both break and return

86. The keyword ‘break’ cannot be simply used within:

a) do-while

b) if-else

c) for

d) while

87. Which keyword is used to come out of a loop only for single iteration?

a) break

b) continue

c) return

d) none of the mentioned

88. The output of this C code is?

```
#include <stdio.h>

void main()

{

int i = 0;

if (i == 0)

{

printf(“Hello”);

break;

}

}
```

a) Hello is printed infinite times

b) Hello

c) Varies

d) Compile time error

89. Which of the following is not valid variable name declaration?

a) int __v1;

b) int __1v;

c) int __V1;

d) None

90. Which of the following is not a valid variable name declaration?

a) int _v1;

b) int v_1;

c) int 1_v;

d) int _1v

91. Variable names beginning with underscore is not encouraged. Why?

a) It is not standard form

b) To avoid conflicts since assemblers and loaders use such names

c) To avoid conflicts since library routines use such names

d) To avoid conflicts with environment variables of an operating system

92. Which is not a valid C variable name?

a) int number;

b) float rate;

c) int variable_count;

d) int $main;

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

a) They can contain alphanumeric characters as well as special characters

b) It is not an error to declare a variable to be one of the keywords (like goto, static)

c) Variable names can't start with a digit

d) Variable can be of any length

94. What will be the output?

```
#include <stdio.h>
int main()
{
int main = 5;
printf("%d", main);
```

return 0;

}

a) compile-time error

b) run-time error

c) run without any error and prints 5

d) experience infinite looping

95. Which of the following cannot be a variable name in C?

a) friend

b) true

c) volatile

d) export

96. The format identifier ‘%i’ is also used for _____ data type?

a) char

b) double

c) float

d) int

97. Which of the following is a User-defined data type?

a) struct {char name[10], int age};

b) typedef enum {Mon, Tue, Wed, Thu, Fri} Workdays;

c) typedef int Boolean;

d) all of the mentioned

98. What is short int in C programming?

a) Basic datatype of C

b) Qualifier

c) short is the qualifier and int is the basic datatype

d) All of the mentioned

99. What is the size of an int data type?

a) 4 Bytes

b) 8 Bytes

c) Depends on the system/compiler

d) Cannot be determined

100. Which of the datatypes have size that is variable?

a) int

b) struct

c) float

d) double

101. What is the output of this C code?

```
#include <stdio.h>

int main()

{

float x = ‘a’;

printf(“%f”, x);

return 0;

}
```

a) 97.000000

b) run time error

c) a.0000000

d) a