C PROGRAM QUESTIONS

1) Which of the following special symbol allowed in a variable name?

   a) * (asterisk)
   b) | (pipeline)
   c) - (hyphen)
   d) _ (underscore)

   Answer: d
   Explanation : Variable names in C are made up of letters (upper and lower case) and digits. The underscore character ("_") is also permitted. Names must not begin with a digit.

2) Is the following statement a declaration or definition?
   extern int i;
   a) Declaration
   b) Definition
   c) Function
   d)Error

   Answer : a
   Explanation : Declaring is the way a programmer tells the compiler to expect a particular type, be it a variable, class/ struct /union type, a function type (prototype) or a particular object instance. (ie. extern int i) Declaration never reserves any space for the variable or instance in the program's memory; it simply a "hint" to the compiler that a use of the variable or instance is expected in the program. This hinting is technically called "forward reference".

3) In the following program where is the variable a getting defined and where it is getting declared?

```
#include<stdio.h>
int main()
```

```
{
   extern int a;
   printf("%d\n", a);
   return 0;
}int a=20;
```

a) extern int a is declaration, int a = 20 is the definition
b) int a = 20 is declaration, extern int a is the definition
c) int a = 20 is definition, a is not defined
d) a is declared, a is not defined

Answer : a
Explanation: - During declaration we tell the datatype of the Variable
- During definition the value is initialized.

5) When we mention the prototype of a function?

a) Defining
b) Declaring
c) Prototyping
d) Calling

Answer : b
Explanation : A function prototype in C or C++ is a declaration of a function that omits the function body but does specify the function's name, argument types and return type.While a function definition specifies what a function does, a function prototype can be thought oas specifying its interface

6) In which order do the following gets evaluated

1. Relational
2. Arithmetic
3. Logical
4. Assignment

a) 2134
b) 1234
c) 4321
d) 3214

Answer: a
Explanation:
2. Arithmetic operators: *, /, %, +, -
1. Relational operators: >, <, >=, <=, ==, !=
3. Logical operators : !, &&, ||
4. Assignment operators: =

7) The keyword used to transfer control from a function back to the calling function is

a) switch
b) goto
c) go back
d) return

Answer: Option D
Explanation: The keyword return is used to transfer control from a function back to the calling function.

8) How many times the program will print "HELLO" ?

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

a) Infinite times
b) 32767 times
c) 65535 times

d) Till stack overflows

Answer: Option D
Explanation:
A call stack or function stack is used for several related purposes, but the main reason for having one is to keep track of the point to which each active subroutine should return control when it finishes executing.
A stack overflow occurs when too much memory is used on the call stack.
Here function main() is called repeatedly and its return address is stored in the stack. After stack memory is full. It shows stack overflow error.

9) Point out the error in the program

```
f(int a, int b)
{
   int a;
   a = 20;
   return a;
}
```

a) Missing parenthesis in return statement
b) The function should be defined as int f(int a, int b)
c) Redeclaration of a
d) None of above

Answer: c
Explanation: f(int a, int b) The variable a is declared in the function argument statement.
int a; Here again we are declaring the variable a. Hence it shows the error "Redeclaration of a".

10) A function cannot be defined inside another function

a) True
b) False

Answer : a
Explanation : A function cannot be defined inside the another function, but a function can be called inside a another function.

11) Functions cannot return more than one value at a time

a) True
b) False

Answer : a
Explanation: True, A function cannot return more than one value at a time. because after returning a value the control is given back to calling function.

12) Functions cannot return a floating point number

a) Yes
b) No

Answer : B
Explanation: A function can return floating point value.

13) Every function must return a value

a) Yes
b) No

Answer : b
Explanation: No, If a function return type is declared as void it cannot return any value.

14) Maximum number of arguments that a function can take is 12

a) Yes
b) No

Answer : b
Explanation: No, C can accept upto 127 maximum number of arguments in a function.

15) In a function two return statements should never occur.

a) Yes
b) No

Answer: b
Explanation: No, In a function two return statements can occur but not successively.

16) How will you print \n on the screen?

a) printf("\n");
b) echo "\\n";
c) printf('\n');
d) printf("\\n");

Answer: d
Explanation: The statement printf("\\n"); prints '\n' on the screen.

17) Which of the following function is more appropriate for reading in a multi-word string?

a) printf();
b) scanf();
c) gets();
d) puts();

Answer: c
Explanation: gets(); collects a string of characters terminated by a new line from the standard input stream stdin

18) 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
Explanation: To print a float value, %f is used as format specifier.To print a double value, %lf is used as format specifier.Therefore, the answer is printf("%f %lf", a, b);

19) To scan a and b given below, which of the following **scanf()** statement will you use?

```
#include<stdio.h>

float a;
double b;
```

a) scanf("%f %f", &a, &b);
b) scanf("%Lf %Lf", &a, &b);
c) scanf("%f %Lf", &a, &b);
d) scanf("%f %lf", &a, &b);

Answer: d
Explanation: To scan a float value, %f is used as format specifier.
To scan a double value, %lf is used as format specifier.
Therefore, the answer is scanf("%f %lf", &a, &b);

20) In a call to printf() function the format specifier %b can be used to print binary equivalent of an integer.

a) True
b) False

Answer: b
Explanation: There is no format specifier named %b in c.

21) In which numbering system can the binary number 1011011111000101 be easily converted to?

a) Decimal system
b) Hexadecimal system
c) Octal system
d) No need to convert

Answer: b
Explanation: Hexadecimal system is better, because each 4-digit binary represents one Hexadecimal digit.

22) Which standard library function will you use to find the last occurance of a character in a string in C?

a) strnchar()
b) strchar()
c) strrchar()
d) strrchr()

Answer: d
Explanation: strrchr() returns a pointer to the last occurrence of character in a string.

23) Which of the following is not logical operator?

a) &
b) &&
c) ||
d) !

Answer: a
Explanation: **Bitwise operators:**
& is a Bitwise AND operator.
Logical operators:
&& is a Logical AND operator.
|| is a Logical OR operator.
! is a NOT operator.
So, '&' is not a Logical operator.

24) In mathematics and computer programming, which is the correct order of mathematical operators ?

a) Addition, Subtraction, Multiplication, Division
b) Division, Multiplication, Addition, Subtraction
c) Multiplication, Addition, Division, Subtraction
d) Addition, Division, Modulus, Subtraction

Answer : b
Explanation : Simply called as BODMAS (Brackets, Order, Division, Multiplication, Addition and Subtraction).
Mnemonics are often used to help students remember the rules, but the rules taught by the use of acronyms can be misleading. In the United States the acronym PEMDAS is common. It stands for Parentheses, Exponents, Multiplication, Division, Addition, Subtraction. In other English speaking countries, Parentheses may be called Brackets, or symbols of inclusion and Exponentiation may be called either Indices, Powers or Orders, and since multiplication and division are of equal precedence, M and D are often interchanged, leading to such acronyms as BEDMAS, BIDMAS, BODMAS, BERDMAS, PERDMAS, and BPODMAS.

25) Which of the following cannot be checked in a switch-case statement?

a) Character
b) Integer
c) Float
d) enum

Answer: c
Explanation: The switch/case statement in the c language is defined by the language specification to use an int value, so you can not use a float value.

26) The way the break is used to take control out of switch and continue to take control of the beginning of the switch?

a) Yes
b) No

Answer: b
Explanation: continue can work only with loops and not with switch

27) Can we use a switch statement to switch on strings?

a) Yes
b) No

Answer: b
Explanation: The cases in a switch must either have integer constants or constant expressions.

28) We want to test whether a value lies in the range 2 to 4 or 5 to 7. Can we do this using a switch?

c) Yes
d) No

Answer : a
Explanation: We can do this in following switch statement

```
switch(a)
{
   case 2:
   case 3:
   case 4:
     /* some statements */
     break;
   case 5:
   case 6:
   case 7:
     /* some statements */
     break;
}
```

29) A short integer is at least 16 bits wide and a long integer is at least 32 bits wide.

a) True
b) False

Answer: a
Explanation: The basic C compiler is 16 bit compiler, below are the size of it's data types
The size of short int is 2 bytes wide(16 bits).
The size of long int is 4 bytes wide(32 bits).

30) A char variable can store either an ASCII character or a Unicode character.

a) True
b) False

Answer: a
Explanation: Yes, we can store either an ASCII character or a Unicode character in a char variable.

31) 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
Explanation: The statement 'C' is correct. When we pass an array as a funtion argument, the base address of the array will be passed.

32) What is the similarity between a structure, union and enumeration?

e) All of them let you define new values
f) All of them let you define new data types
g) All of them let you define new pointers
h) All of them let you define new structures

Answer: b