



PROGRAMMING IN JAVA

Assignment -- 0

TYPE OF QUESTION: MCQ

Number of questions: 15

Total mark: $15 \times 1 = 15$

QUESTION 1:

A one dimensional array A has indices 0....54. Each element is a string and takes up four memory words. The array is stored starting at location 1000 in decimal form. The starting address of 41th element of A is

- a. 1000
- b. 1160
- c. 1040
- d. 1055

Correct Answer: b

Detailed Solution:

One element takes four memory words so memory location 1000 , 1001 , 1002, 1003 stores first element. 41 th element will be stored at location 1160 , $(1000 + (40 \times 4))$.

QUESTION 2:

What is the output of the following program in C?

```
#include <stdio.h>
int main()
{
    enum Nptel { July = 0, Aug, Dec};
    enum Nptel course = Dec;
    if( course == 0)
        printf("Course is in July");
    else if(course == 1)
        printf("Course is in Aug");
    if(course == 2)
        printf("Course is in Dec");
}
```



- a. Course is in July
- b. Course is in Aug
- c. Course is in Dec
- d. Compilation error

Correct Answer: c

Detailed Solution:

Enumeration data type consists of named integer constants as a list. It starts with 0 (zero) by default and value is incremented by 1 for the sequential identifiers in the list.

QUESTION 3:

Consider the statement

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

5 will be the value of

- a. `X[0][1]`
- b. `X[0][5]`
- c. `X[1][5]`
- d. `X[1][0]`

Correct Answer: d

Detailed Solution:

The data are placed to the 2D array in row-major order, that is, `int X[2][4] = {1,2,3,4,5,6,7,8};` will be seen as

```
X[2][4] = {  
    {1,2,3,4},  
    {5,6,7,8}  
};
```

Thus, 5 is in `X[1][0]`.



QUESTION 4:

What does the following declaration mean?

```
int (*ptr)[15];
```

- a. ptr is array of pointers to 15 integers.
- b. ptr is a pointer to an array of 15 integers.
- c. ptr is an array of 15 integers.
- d. ptr is a pointer to a two-dimensional array.

Correct Answer: b

Detailed Solution:

This is the declaration of pointer to an array of size 15.

QUESTION 5:

In C, if you pass the name of 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 the array.

Correct Answer: c

Detailed Solution:

When we pass an array as a function argument, the base address of the array will be passed.

QUESTION 6:

Which of the following statements(s) is/are not true?

- a. Assembler translates a program in high level programming language into a code in an assembly language.
- b. Compiler translates a program in high level programming language into a code in a machine language.
- c. Interpreter translates a program in high level programming language into a code in a machine language.
- d. A program in C is compiled whereas a program in C++ is interpreted.



Correct Answer: a, d

Detailed Solution:

All high level language (in general) is compiled to code in machine level language. The same strategy is followed in both C and C++ programming languages.

QUESTION 7:

Consider the function

```
myfunc( int x, int y)
{
    return (( x < y ) ? 0 : ( x - y ));
}
```

Let a, b be two non-negative integers.
The call `myfunc(a, myfunc(a, b))` can find the

- a. Maximum of a, b .
- b. Positive difference of a, b .
- c. Sum of a, b .
- d. Minimum of a, b .

Correct Answer: d

Detailed Solution:

This function `myfunc(a, myfunc(a, b))` is to find the minimum of a, b .

QUESTION 8:

What will be the value returned by the following program, when it is called with a value 10?

```
#include<stdio.h>
int recur(int);
void main()
{
    int d;
    d=recur(10);
}
```



```
printf("%d",d);  
}  
int recur(int num)  
{  
    if((num/2)!=0)  
        return(recur(num/2 ) * 10+num%2 );  
    else  
        return 1;  
}
```

- a. 1010
- b. 1011
- c. 10
- d. 0110

Select the correct option(s) in the above.

Correct Answer: a

Detailed Solution:

QUESTION 9:

Which of the following is not based on object-oriented paradigms?

- a. C
- b. C++
- c. Java
- d. Python

Correct Answer: a

Detailed Solution:

C is not based on 'object-oriented' paradigm rather than function-oriented paradigm. It has no concept of classes, objects, polymorphism, and inheritance.

QUESTION 10:

What is the output of the following code segment?



```
int i = 1;  
printf("%d + %d", i++, ++i);
```

- a. 1 + 2
- b. 2 + 3
- c. 2 + 2
- d. 1 + 1

Correct Answer: b

Detailed Solution:

It is the concept of pre-increment and post-increment. The evaluation is done from right-to-left and printf will print the value from left-to-right.

QUESTION 11:

Which of the following operators takes only integer operands in C programming language?

- a. + (plus)
- b. *(multiplication).
- c. /(division).
- d. %(modulo)

Correct Answer: d

Detailed Solution:

modulus operator ('%'), computes the remainder by performing integer division.

QUESTION 12:

Which of the following statement(s) to declare an array, say 'a' is(are) **not** valid in C programming language?

- a. `int a[m];` //m is an integer variable
- b. `int *a;`
- c. `int a[]={1,2,3,4,5};`
- d. `int a[10000];`



Correct Answer: a, b

Detailed Solution:

C language needs the size of the array at the time of compilation. Since the value of m is not known at the time of compilation, C compiler will give compilation error. Further, note that *a is a pointer to an integer variable, it can point to an array but not actually an array.

QUESTION 13:

Which of the following is not a valid keyword in C?

- a. auto
- b. void
- c. switch
- d. malloc

Correct Answer: d

Detailed Solution:

1. Keywords are those words whose meaning is already defined by Compiler
2. Cannot be used as **Variable Name**
3. There are **32 Keywords** in C
4. C Keywords are also called as **Reserved words**

The name "malloc" stands for memory allocation. It is not a keyword, rather is a library function defined in <stdlib.h> in C programming language. The malloc() function reserves a block of memory of the specified number of bytes. And, it returns a pointer of type void which can be casted into pointer of any form.

QUESTION 14:

What result the following macro will produce in a statement in C programming language?

```
#include <stdio.h>
#define square(x)  x*x
int main() {
    int  x=36/square(6);
    printf("%d",x);
    return 0;
}
```

- a. 36
- b. 1



- c. 0
- d. 6

Correct Answer: a

Detailed Solution:

The calculation is $36/6*6$. This will be equivalently $(36/6)*6$ because both / and * are of same precedence and with left-to-right associativity.

QUESTION 15:

Consider the following piece of code in the C programming language.

```
#include<stdio.h>
main()
{
    inc(); inc(); inc();
}
inc()
{
    static int x;
    printf("%d", ++x);
}
```

If you run this program, then which of the following statement(s) is (are) true?

- a. The program will print the value 123
- b. The program will print the value 111.
- c. The program will print the value 012.
- d. The program will print the value 000.

Correct Answer: a

Detailed Solution:

By default x will be initialized to 0. Since its storage class is static, it presents its exit value (and forbids reinitialization on re-entry). So, 123 will be printed.
