

# DELHI PUBLIC SCHOOL, JAMMU

Class XI

Term I (2018-19)

Sub -Computer

## Assignment – I

Topic: Data Representation, Data Handling, Operators & Expressions

Q1 What are 'enumerations'? Explain through example

Q 2 Explain all the six fundamental data types.

Q 3 Write a program to check whether a given number is even or odd.

Q 4 What will be the value returned by the following if value assigned to integer variable k is 3 ?

- a)  $k < 2$
- b)  $k = 2$
- c)  $k \leq 3 \mid k > 4$

Q 5 What is the value of i and j in the two cases given below?

- a)  $i = 7$   
 $j = i ++$
- b)  $i = 8$   
 $j = --i$

Q 6 What will be the value assigned to integer variable x as under:-  
 $Z = a * x * x + b * x + c$  where a, b, c and x are 2, 4, 5 and 3 respectively?

Q 7

Evaluate  $x += x++ + ++x$  if, initially  $x = 15$ .

Q 8 Given the following code

```
fragment int marks=25;  
cout << ++marks << "n";  
cout << marks << "n";
```

- (i) What output does the above code fragment produce?
- (ii) What is the effect of replacing  $++marks$  with  $marks++$ ?
- (iii) What is the effect of replacing  $++marks$  with  $marks+1$ ? Q 9

What will be the output of the code segment given below:

```
int a = 200, b=7;  
cout << a/b << endl;
```

Q 10 If initially, the value of name =100, then what will be the output of the code given below:-

```
cout << name -- ;  
cout << ++ name ;
```

Q 11 What will be the result of the following expressions, if initial value of I = 20? 1)  $++I \leq 20$  2)  $I++ \leq 20$

Q 12

Construct logical expressions to represent the following conditions:

- (a) exp is a lowercase letter
- (b) Marks is in the range 400-500 or grade is 'A'
- (c) Grade is 'B' and experience is more than 5 years.

Q 13 Write a statement that uses a conditional operator to set grade ='A', if marks is more than 70 and B otherwise.

Q 14 Given the two expressions  
marks=10

marks==10

What is the difference between the two expressions?

Q 15

Suppose a and b are two type double variables that we want to add as integers and assign to an integer variable. Construct a C++ statement for doing so?

Q 16

Given the following set of declarations : char ch;

int i, j, k;

float a, b, c;

double p,q;

Which of the following are valid arithmetic expressions?

- a) ch=100
- b) i-j+k
- c) i%k
- d) a%b+c-k
- e) p+q/b>i

Q 17 What will be the resultant type of the following expression if int is an integer variable and fl is a float variable?

Q 18 Write the corresponding C++ expressions for the following mathematical expressions:

(a)  $(\cos x / \sin^{-1} x) + y$

(b)  $(x^2 + y^2 + z^2)^{1/2}$  (c) |

$e^y + y$  |

(d)  $a + b / (x + y)^7$

Q 19

Given the following set of declarations:

int x, y, z, d; float p, q, r; double a, b, c ;

Which of the following are valid arithmetic expressions and which are invalid. And state the reason why they are invalid.

- (a)  $(\text{ceil}(p) + x) z.$
- (b)  $a b * c / d.$
- (c)  $c/p + y * x / z.$
- (d)  $\log(-18) + x/ y.$
- (e)  $x^*+d$

Q 20 Which header file must be included to make use of C++'s built-in mathematical functions?

Q 21

Evaluate the following C++ expression int x, ch=5, n=10;

$x = ch * 7 / 4 + ch / 5 + 25 - ch + 7 / 2 + 3 / 11$

Q 22 What is type conversion? What is meant by implicit and explicit type conversion?

Q 23 Given the following set of identifiers:

```
char ch;  
short sh;  
int inval;  
long lg;
```

23. Convert the following-

- a.  $(97)_{10}$  to binary
- b.  $(63.25)_{10}$  to binary
- c.  $(110.01)_2$  to decimal
- d.  $(111011110101)_2$  to hexadecimal
- e.  $(5B7D)_{16}$  to binary
- f.  $(5A9)_{16}$  to decimal
- g.  $(510)_{10}$  to hexadecimal
- h.  $(11001101110)_2$  to octal
- i.  $(5371)_8$  to binary
- j.  $(5737)_8$  to decimal
- k.  $(257)_{10}$  to octal

24. Find the eight bit two's complement form of  $(-15)_{10}$

25. Write a short note on –

- a. Sign and magnitude representation of integers
- b. Binary Representation of Real Numbers
- c. Unicode

