

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 l = 20? 1) $++l \leq 20$ 2) $l++ \leq 20$

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

