

# BRAIN INTERNATIONAL SCHOOL

Term-II

Class-XI

2018-19

## **Sub:- Computer Science Revision Sheet**

### Computer Organisation

1. Which electronic device invention brought revolution in earlier computers?
2. Which memory is responsible for booting of system.
3. Where do you find analog computers in daily life?
4. What do you mean by term firmware?
5. What do you mean by language processors? Why we need it?
6. Give any example of hybrid computer in daily life.
7. Can we think of a computer system without operating system? Justify your answer.
8. Fifth generation of computer is a symbol of intelligence. Why?
9. Which is better for translator & why? Compiler or Interpreter. What do you mean by Defragmentation?
10. What do you mean by RISC & CISC?
11. Which port a mouse should be connected?
12. What do you mean by LPT port?
13. What is difference between USB & Firewire Port?
14. What is cache memory?
15. Answer the following:
  - (a) What is a Computer?
  - (b) Explain Input and Output Devices with examples.
  - (c) State whether the following are input/ output device. Also state the purpose of each device :

i. Key board	ii. Speaker	iii. Mouse
iv. Camera	v. Printer	vi. Scanner
vii. Plotter	viii. Joy Stick	ix. Monitor
x. MIC		
  - (d) Fill in the following Memory Units relation Ships:
    - i. 1 Byte = \_\_\_\_\_ Bits = 2<sup>---</sup> Bits
    - ii. 1 KiloByte = \_\_\_\_\_ Bytes = 2<sup>---</sup> Bytes
    - iii. 1 MegaByte = \_\_\_\_\_ KiloBytes = 2<sup>---</sup> KiloBytes
    - iv. 1 GigaByte = \_\_\_\_\_ MegaBytes = 2<sup>---</sup> MegaBytes
    - v. 1 TeraByte = \_\_\_\_\_ GigaBytes = 2<sup>---</sup> GigaBytes
    - vi. 1 TeraByte = \_\_\_\_\_ MegaBytes = 2<sup>---</sup> MegaBytes
    - vii. 1 MegaByte = \_\_\_\_\_ Bits = 2<sup>---</sup> Bits
16. Answer the following:
  - (a) What do you understand by term Primary Memory?
  - (b) Differentiate between RAM and ROM.
  - (c) Define Secondary Memory with an example.
  - (d) What are Secondary Storage Devices? Give five examples of same.

- (e) Explain the purpose of a UPS.
- (f) What are drivers? Explain with the help of examples.
- (g) Write brief note on the different types of Printers and their specific features that differentiate them from each other.

17. Answer the following:

- (a) Explain the purpose of a CPU. Describe its various parts.
- (b) Describe the booting – up process of a computer in detail.
- (c) Both RAM and ROM- BIOS are primary Memory. True/ False?
- (d) Define the following (with examples):
  - i) System Software
  - ii) Application Software
  - iii) Utility Software

18. Answer the following:

- (a) What is an Operating System? Give examples.
- (b) State the Key functions of an Operating System?
- (c) What do you understand by the term GUI? How is it different from a non- GUI operating System?
- (d) Differentiate between Microsoft Windows and DOS.
- (e) Differentiate between LINUX and UNIX

## **Data Representation**

1. Perform the following conversions :

- a)  $(123.36)_{10} = ( )_2$
- b)  $(1001001.1001)_2 = ( )_{10}$
- c)  $(456.42)_8 = ( )_{10}$
- d)  $(945.64)_{10} = ( )_8$
- e)  $(532.67)_8 = ( )_2$
- f)  $(10010101.110011)_2 = ( )_8$
- g)  $(AF10.2E9)_{16} = ( )_{10}$
- h)  $(1001.10)_{10} = ( )_{16}$
- i)  $(EA52.B71)_{16} = ( )_2$
- j)  $(101101011.110011)_2 = ( )_{16}$

2. Represent the following decimal numbers using sign and magnitude form :

17 and -17.

3. Represent the following decimal numbers using One's complement form :

22 and -22.

4. Represent the following decimal numbers using Two's complement form :

122 and -122.

5. Convert the following:

- i. 101001.0101 to decimal
- ii.  $(236)_8$  to Binary
- iii.  $(266)_{10}$  to Hexadecimal
- iv.  $(AF2)_{16}$  to Binary
- v. 0101110.1010110 to Hexadecimal

## Getting Started With C++

- Q1. What are C++ Tokens? Name them.
- Q2. What is the difference between Key Words and Identifiers. Give Examples.
- Q3. Define Variables. Give Example.
- Q4. List all the Arithmetic Operators.
- Q5. List all the Logical Operators.
- Q6. List all the Relational Operators.
- Q7. What is the difference between :
- i) = and ==
  - ii) '1' and 1
  - iii) 'A' and "A"
  - iv) << and >>
- Q8. What is the importance of main() in C++?
- Q9. Why do we need to include header files in a C ++ program?
- Q10. What is the importance of #include statement in C++?
- Q11. What do the angular <> brackets signify in include statement?
- Q12. What is Code Generation? Explain all the steps in details.
- Q13. What happen during Compiling?
- Q14. What happen during Linking?
- Q15. What is the use of the following Keys/ Key combination in C++?
- i) F2
  - ii) Alt+ F9
  - iii) Ctrl+F9
  - iv) Alt + F5
  - v) Alt + F3
  - vi) Alt +X
- Q16. Differentiate between Syntax errors and Semantic Errors.
- Q17. Differentiate between Logical errors and Run Time Errors.
- Q18. Calculate the length of the following :
- i) 'Computer'
  - ii) "Brain\n\tSchool"
- Q19. Mention in each case, whether it is a valid identifier or not. State the reason in case of invalidity.
- i) Math marks
  - ii) x1y2z3
  - iii) int
  - iv) Score
- Q20. Identify the errors in the following C++ statements :
- (i) Int a= 10;
  - (ii) char s = "String";
  - (iii) b + c = a + n;
- Q21. Rewrite the following code after correcting all the syntax errors. Underline your corrections:
- ```
/* WAP to subtract two numbers
void main();
{ int x =20; y = 35;
z = y - x;
cout>>"Difference = ">>z;
}
```

## Data Handling in C++

- Q1. Differentiate between Primitive and Non Primitive data types.
- Q2. Name four basic data types in C++. Also state their memory storage size.
- Q3. What are data type modifiers? Name them.

- Q4. What are character data types often termed as integer data types?  
 Q5. What are C++ constants? Name them, also give one example of each.  
 Q6. What would be the output of the following C++ code:

```
#include<iostream.h>
void main()
{
char ch ='A';
int x = ch;
cout<<x<< " " <<ch<< " " <<ch+2;
}
```

- Q7. Rewrite the following code after correcting all the syntax errors. Underline your corrections:

```
#include<iostream.h>
void main()
{
int x = 'A';
char a = 65;
float f =10.5;
int y = x+a;
float p = f+a;
cout<<y<< " " <<p;
}
```

## Operators and Expressions

- Q1. Differentiate between Unary and binary operators.  
 Q2. Which is the ternary Operator of C++? Explain with the help of an example.  
 Q3. What is Type Casting? Explain with the help of an example.  
 Q4. What is Implicit Type conversion? Explain with the help of an example.  
 Q5. What will be the output of the following C++ expressions :

i) `cout<< "n++ = "<< n++ - --n;` ( if n=16 initially)  
 ii) `char grade = ++a >=90 ? 'A' : 'B';` ( if a=100 initially)  
`cout<<grade;`  
 iii) `cout<<x==10;` ( if x=5 initially)  
 iv) `cout<<k++ <<"\t"<<++k<<endl;` ( if k=4 initially)  
 v) `int a=6, b=3;`  
`int y= b++ * a/b * b/a+5;`  
`cout<<y;`  
 vi) `int a=16, b = 4;`  
`int k = b/a;`  
`float h = b/a;`  
`cout<<k<< " " <<h;`

- Q6. Rewrite the following code after correcting all the syntax errors. Underline your corrections:

```
i) include<iostream.h>
void main
```

```

{ const int x;
cout<< "Enter a number : ";
cin>> x;
cout<< "The square of <<x<<is = <<x*x;
}

```

```

ii) # include<iostream.h>
void main( )
{ clrscr();
int x=2, y=0;
(x=2)? 5* 5 : 6*6
}

```

```

iii) Include<iostream.h>
void main ( )
{
float a=5.5;
char ch=a;
int x==2;
a = x * ch;
x = ch + 32;
int k = x%a;
getch(); }

```

Q7. What would be the result of following relational expressions? Show all the steps of execution :

- i)  $!(p) \&\& q$
- ii)  $(!p > q) \parallel (p + q < 25/p)$
- iii)  $(p > !q) \&\& (!p)$

When

- a)  $p=1$  and  $q=0$
- b)  $p=2$  and  $q=-5$

## **FLOW OF CONTROL**

Q1. Explain the working of for loop with the help of an example.

Q2. Differentiate between loops and selection statements.

Q3. Differentiate between :-

- i) while and do.... while loops
- ii) break and continue
- iii) if... else and swith...case

Give explanatory example for each.

Q4. State the outputs of the following program segments :

```

i) int k=10;
for(; k>=1; k- -)
{
k++;
}
cout<<k;
ii) int a=b=4;

```

```

while ( a==b)
{
if (a%2==0) ++a;
if (b/2==2) ++b;
}
cout<<a<< “:”<<b;
iii) int n = 12345, s=0,c=0;
while (n!=0)
{
x=n%10;
s+=x*pow(10,c);
n=n/10;
}
cout<<s;
iv) for( int i=10 ; i<=50 ; i++);
cout <<i;
v) char ch = ‘a’;
int x=0;
while(ch!= ‘e’ && x<10)
{
cout<<ch+x;
x++;
ch++;
}

```

Q5. Rewrite the following C++ program after removing the syntax errors, underline the corrections:

```

i) # include <iostreamh>
void main( );
{
int a,b;
cout<<Enter two numbers ;
cin<<a<<b;
for(i=0; i>-7; i- -)
{
if (a>b)
a++;
}
else
- -b;
ii) # include <iostream.h>
void main( );
{ float r;
int w=90;
while w>60
{ r = w-60;

```

```

Switch (r)
{20 : cout<< "Lower Range";
30 : cout<< "Middle Range"
40 : cout<< "High Range";
}
w/=10;
}

```

Q6. State the outputs of the following program segments :

```

i) for(int I = 1; i<=6; I++)
{
for ( int j = 5; j<=1; j++)
cout<< I*j<< "\t";
cout<<"\n";
I++; }

```

```

ii) char a='A';
int x;
while ( a! = 'E')
{ x = a;
do
{ cout<<x<<"\t";
x++;
}while(x<=70);
cout<<"\n"
a++;
}

```

```

iii) long int n = 5, x= 3, s=0,c=0;
for (int i = 0; i<=n; i++)
{
c = 1;
for(int j =1;j<=i;j++)
c *= x;
s+=c;
}
cout<<s;

```

## Arrays

- Q1. Define arrays. Give one example.
- Q2. What is the base type of an array?
- Q3. What are strings?
- Q4. Which character terminates the string?
- Q5. State the outputs of the following program segments :

```

a) char arr [ ] = "Technology";
for (int i= strlen(arr)-1; i>=0 ; i--)
    arr[i] = arr[i+1];
cout<< "The output is :." <<arr;
b) char str [] = "ComPutErS";
int arr[15];
for(int j=0; j<strlen(str);j++)
{
    if( (int)str[j]%2==0)
        arr[j]= (int )str[j];
    else
        if(islower(str[j])
            arr[j]=1;
        else
            arr[j]=0;
}
for(int j=0; j<strlen(str);j++)
{
    cout<<arr[j]<< ",";
}
c) int a [5] = {3, 10, 1, 20, 25 } ;
int i, j, k, m;
i = a[0]++;
j = a[i++];
k = ++ a[2];
m = ++a[k] + a[i]++ ;
cout<<i<<" "<<j<<" "<<k<<" "<<m;

```

Q 6. Rewrite the following program after removing all the errors. Underline the corrections:

```

a) # include<iostream.h>
void main( )
{
    int arr = { '3', '4', '6', '7', '8' };
    for(int I= 1; I<5; I++)
    {
        gets(arr[I]);
    }
}
b) # include<iostream.h>
void main( )
{
    char name [ ] ="string" ;
    for(int I= 1; I<5; I++)
    {
        If(arr[I]=="i" ) puts(arr[I]);
    }
}

```



```
}  
}
```

Q 7. Give Array declarations for the following :

- a) To store prices of 50 items.
- b) To store the scores of 25 players in 3 different matches.
- c) To store the names of 15 employees of a firm.
- d) To store the dates of admission of 5 patients in a hospital. Initialise this array with some valid data.

Q 8. Write the statements (only) to carry out each of the following operations :

- a) To count the number of positive elements in an array of 20 integers.
- b) To count the frequency of alphabet 'a' in a string.
- c) To replace all blank spaces by '!' in a string.

## **FUNCTIONS**

Q 1. What are Functions? Give Example.

Q 2. What is Function Prototype? Give Example.

Q 3. Differentiate between Call by Value and Call by Reference. Give explanatory Example.

Q 4. Give the output of the following program :

i) void display(int x, int y=5)

```
{  
  char str[20] = "WORLD"  
  for( int I=0; I< x; I++)  
  { for( int j= I; j<y; j++)  
    cout<< str[j];  
    cout<<"\n";  
  }  
}
```

void main()

```
{  
  int i=3, j =5;  
  display(j);  
  cout<< "New Display";  
  display(i ,j);  
}
```

ii) #include<iostream.h>

int a=10;

void main()

```
{  
  void demo(int&, int, int);  
  int a=20, b=5;  
  demo(::a, a, b);  
}
```

```

    cout<<::a<<a<<b<<endl;
}
void demo(int &x, int y, int z=0)
{
    a+=x;
    y*=a;
    z=a+y;
    cout<<x<<y<< z<<endl;
}
iii) void show( int &y)
{
    static int x=0;
    cout<<x++<<"\t";
    x=x-y++;
}
void main()
{
    int k=10;
    show(k);
    cout<<k<< "\n";
    show(k)
    cout<<k<< "\n";
    show(k);
}

iv) void Change( char msg [ ], int len)
{
    for( int c= 0; c<len; c++)
    {
        if(islower(msg[c]))
            msg[c] = msg[c] - 32;
        else if( isupper (msg[c]))
            msg[c] = msg[c] + 32;
        else if( isdigit (msg[c]))
            msg[c] = msg[c] + 1;
        else
            msg [c] = '*';
    }
}
void main ( )
{
    char str [] = "Pre – Boards 2018-19", t;
    Change(str, strlen(str));
    puts(str);
}

```

```

for ( int c = 0, R = strlen(str) -1; c < strlen(str)/2 ;c++, R--)
{
t = str[c] ;
str [c] = str [R];
str [R] = t ;
}
puts(str);
}

```

```

v) float calc( int &y, float x=12.5)
{
y*=x;
cout<<x<<"\t"<<y ++<<"\t"<<--y<<endl;
return x;
}
void main()
{
int k=10; float n=2.5;
n=calc(k);
cout<<k<<"\t"<<n<< "\n";
k=calc(k,n);
cout<<k<<"\t"<<n<< "\n";
}

```

Q 5. Rewrite the following codes after removing the errors. Underline your corrections.

i) # include<iosream.h>

int Z=122;

void main()

{

int x=12; y=89;

z=+x;

puts( Z);

}

int add( )

{

Z= x+y;

}

ii) # include<iostream.h>

int calculate(int s=0, y=2, z)

void main()

{

int x=1,y=3;

z=calculate(1,2,3);

z=calculate(z);

}

```

int calculate(int s=0, y=2, z)
{
return(s*y*z);
}

```

Q 6. Write only the function Prototypes for the following :

- i) To return the sum of all elements of a matrix.
- ii) To display all prime numbers which are greater than N and less than M.

## **Structures**

Q 1. Define Structures. Give one example.

Q 2. What are nested structures? Give one example.

Q 3. What is the use of typedef. Explain with the help of an example.

Q 4. What are the uses of #define pre processor directive? How is it different from #include pre processor directive. Give example to support your answer.

Q 5. What are macros? Give an example to illustrate the use of a macro.

Q 6. What is the mistake in the following structure declarations ?

```

Struct distance
{
int feet;
int inches;
}
distance d1;

```

Q 7. Identify the error in the following structure declaration :

```

Struct
{
int day;
int month;
int year;
} bdate;
bdate doj, dob;

```

Q 8. Consider the following :

```

Struct item
{
int I_no;
char I_name[20];
float price[4];
};
item Acat[3]= {
{ { 1001, "Bread", {7.50,8.00,8.00,9.25}},
{ { 1002, "Butter", {14.25,15.75,15.00,16.25}},
{ { 1003, "Cake", {21.50,21.00,28.05,119.25}},
};

```

Using the above information answer the following :

- a) Acat[1].I\_no = \_\_\_\_\_
- b) Acat[0].price[2] = \_\_\_\_\_
- c) Acat[1].I\_name[3] = \_\_\_\_\_
- d) Acat[2].I\_no = \_\_\_\_\_
- e) Acat[2]. I\_no[1] = \_\_\_\_\_

Q 9 Declare the following structure :

Name Address Phone no.  
 Fname Lname colony city state  
 Flat\_no pocket

Q 10. Find out the errors, if any, in the following program :

```

void main()
{
  struct stud
  {
    char name[25];
    int age;
    int rollno;
  }
  stud s1;
  strcpy(stud.name, "Haris");
  age=17;
  cout<<name;
  cout<<stud.age;
  b) #include<iostream.h>
  struct play
  {
    int score, bonus;
  };
  void calculate(play &p, int n = 10)
  {
    p.score ++;
    p.bonus+=n;
  }
  void main()
  {
    play pl = {10,15};
    calculate(pl,5);
    cout<<pl.score<< " " <<pl.bonus<<endl;
    calculate(pl);
    cout<<pl.score<< " " <<pl.bonus<<endl;
    calculate(pl,15);
    cout<<pl.score<< " " <<pl.bonus<<endl;
  }

```

Q 11. In the following C++ program if the value inputted by the user is 20 , what maximum and

minimum value the program could possibly print? # include<stdlib.h>

```
# include<iostream.h>
void main( )
{
int N, guessnum;
cin>>N;
randomize( );
guessmum=random(N-10)+10
cout<< guessmum ;
}
```

Q 12. In the following C++ program what is the expected value of MyMarks for the options (i) to

(iv) given below:

```
# include<stdlib.h>
# include<iostream.h>
void main( )
{
randomize( );
int marks[ ]={99,92,94,96,93,95}, MyMarks;
MyMarks = Marks[1+random(2)];
Cout<< MyMarks<endl;
}
```

(i) 99

(ii) 94

(iii) 96

(iv) None of the above