



DELHI PUBLIC SCHOOL, DURGAPUR
QUESTION BANK OF COMPUTER SCIENCE
FOR BLOCK TEST-I EXAMINATION (2018-19)
CLASS-XI

Chapter 1. Computer Overview

1. What is data? What is information?
2. Name the subunits of CPU and give the function of each unit.
3. What is function of memory? What are its measuring units?
4. What are difference between hardware, software and firmware?
5. Which of the following are software and hardware?
i) Transistor ii) Fortran iii) Compiler iv) Integrated Circuit
6. Name the super computers developed in India.

Chapter 2. Software Concepts

1. What is Booting? Explain its steps.
2. What are different types of booting? How they are different from each other?
3. How interpreter is different from compiler?
4. Define following terms:-
 - a. Disk Cleanup tool
 - b. Disk Fragementer
 - c. Backup Utility
5. Mention functions of OS. Explain each of them.
6. Define the following terms:-
 - a. Throughput
 - b. CPU Utilization
 - c. Turnaround Time
 - d. Waiting Time
 - e. Response Time
 - f. FCFS
 - g. SJN
 - h. Deadline Scheduling
 - i. Robin Round Scheduling
 - j. Response Ratio Scheduling

Chapter 3. Data Representation

1. Convert decimal to binary:-
 - i. $(41.75)_{10}$
 - ii. $(165.25)_{10}$
 - iii. $(478.75)_{10}$
 - iv. $(53.875)_{10}$
2. Convert binary to decimal:-
 - i. $(110101)_2$
 - ii. $(1011100)_2$
 - iii. $(110011.1011)_2$
 - iv. $(1010.001)_2$
3. Convert decimal to octal:-
 - i. $(4507)_{10}$
 - ii. $(7757)_{10}$
 - iii. $(451.125)_{10}$
 - iv. $(245.75)_{10}$

4. Convert octal to decimal:-

- i. $(5100)_8$ ii. $(7070)_8$ iii. $(A452)_{16}$ iv. $(ABC)_{16}$

5. Convert the following to their Hexadecimal equivalents:-

- i. $(110011101111)_2$ ii. $(100101101110)_2$
iii. $(9894)_{10}$ iv. $(7642)_8$

6. Suppose a number system has been designed with radix 8 with symbols (ordered from small to large) I,K,M,N,O,R,S,T. Convert the following hybrid number to equivalent binary number.

Chapter 4. Microprocessor Basics and Memory concepts

1. Difference between RAM and ROM.
2. What do you mean by bus? Explain its type.
3. Define i)Registers ii)Cache
4. Write short notes on classification of Microprocessors based on instruction sets.
5. Explain the two basic types of RAM.
6. Explain various types of ROM.
7. Explain types of ports.

C++ Questions

1. WAP of temperature conversion that gives the user the option of converting Fahrenheit to Celsius or Celsius to Fahrenheit and depending upon user's choice carries out the conversion.

Hint:- $f=(temp*1.8)+32$; $c=(temp-32)/1.8$

2. Give three numbers A, B and C, write a program to write their values in an ascending order. For example, if $A=12, B=10$ and $C=15$, your program should print out:

Smallest Number =10

Next higher number=12

Highest number=15

3. WAP to create the equivalent of a four-function calculator. The program requires the user to enter two numbers and an operator. It then carries out the specified arithmetical operation: addition, subtraction, multiplication or division of two numbers. Finally, it displays the result.
4. WAP to input a character and to print whether a given character is an alphabet, digit or any other character.
5. Program to calculate commission for the salesmen. The commission is calculated according to following rates:-

Sales	Commission Rate
30001 onwards	15%
22001-30000	10%
12001-22000	7%
5001-12000	3%
0-5000	0%

6. Program to print whether a given character is an uppercase or a lowercase character or a digit or any other character. Use ASCII codes for it. The ASCII codes are as given below:-

Characters	ASCII range
'0'-'9'	48-57
'A'-'Z'	65-90
'a'-'z'	97-122
Other characters	0-255 excluding the above mentioned codes.

7. Program to calculate and print roots of a quadratic equation $ax^2+bx+c=0$ ($a \neq 0$).
8. WAP to accept any two numbers from user and display larger number using ternary operator.
9. Program to calculate area of a circle, a rectangle or a triangle depending upon user's choice using *switch-case*.
10. Write any four differences between *switch-case* and *if-else*.
11. Replace the following code using *switch-case*:-

```
if(c=='a')
    cout<<"Vowel";
else if(c=='e')
    cout<<"Vowel";
else if(c=='i')
    cout<<"Vowel";
else if(c=='o')
    cout<<"Vowel";
else if(c=='u')
    cout<<"Vowel";
else
    cout<<"Not a vowel";
```

12. Write syntax for the following:-
- if-else
 - switch-case
 - while loop
 - for loop
 - do-while loop
13. Program to find factorial of a number.
14. State true or false:-
- for(; ;) is a endless loop.
 - In a for loop, all three, i.e., initialization, condition checking and re-initialization are optional.
 - for(t=0; t<300; ++t); is an empty loop.
 - long wait=0; while(++wait<10000); is an empty while loop.
 - The braces{ } are necessary even when the loop-body contains a single statement.
 - The *do-while* loop will never execute until and unless given condition is evaluates to true.
15. Explain jump statements with an example.

16. Write a C++ program to print Fibonacci series i.e., 0 1 1 2 3 5 8..... upto 10 terms.

17. Program to print half pyramid using:-

```
*
*   *
*   *   *
*   *   *   *
```

18. Program to print half pyramid a using numbers:-

```
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
```

19. Program to print half pyramid using alphabets:-

```
A
B B
C C C
D D D D
```

20. Programs to print inverted half pyramid using * and numbers:-

```
*   *   *   *
*   *   *
*   *
*
```

21. Inverted half pyramid using numbers:-

```
1 2 3 4 5
1 2 3 4
1 2 3
1 2
1
```

22. Programs to display pyramid and inverted pyramid using * and digits:-

```
          *
        * * *
      * * * * *
    * * * * * *
```

23. Program to print pyramid using numbers:-

```
          1
        2 3 2
      3 4 5 4 3
    4 5 6 7 6 5 4
```

24. Inverted full pyramid using *:-

```
* * * * *
  * * * *
    * * *
      * *
        *
```

25. Print Floyd's Triangle.

1

2	3		
4	5	6	
7	8	9	10

26. WAP to accept any number and check whether it is Palindrome number or not.
27. WAP to accept any number and check whether it is Armstrong number or not.
28. WAP to accept any number and check whether it is Disarium number or not.
29. WAP to accept any number and check whether it is perfect number or not.
30. WAP to accept any number and check whether it is prime number or not.
31. WAP to find the sum of the following series:-

a. $x - x^2/2! + x^3/3! - x^4/4! + x^5/5! - x^6/6!$

b. $x + x^2/2 + x^3/3 + \dots + x^n/n$

c. $1 + x + x^2 + \dots + x^n$

d. $1 + 1/1! + 1/2! + 1/3! + \dots + 1/n!$

32. WAP to find LCM and GCD of two numbers.

33. Difference between the actual and formal parameter. Also, give a suitable C++ code to illustrate both.

34. Difference between the local and global variable. Also, give a suitable C++ code to illustrate both.

35. Write the output of the following program:

```
#include<iostream.h>
int Calc(int U)
{
    if(U%2==0)
        return U+10;
    else
        return U*2;
}
void Pattern(char M, int B=2)
{
    for(int CNT=0;CNT<B;CNT++)
        cout<<Calc(CNT)<<M;

    cout<<endl;
}
void main()
{
    Pattern('*');
    Pattern('#',4);
    Pattern('@',3);
}
```

36. Give the output of the following program:-

```
#include<iostream.h>
int g=20;
void func(int &x,int y)
{
```

```

        x=x-y;
        y=x*10;
        cout<<x<<' '<<y<<'\\n';
    }
    void main()
    {
        int g=7;
        func(g,::g);
        count<<g<<' '<<::g<<'\\n';
        func(::g,g);
        count<<g<<' '<<::g<<'\\n';
    }

```

37. The following program is written to set larger of the two given integers to -1. But it is not behaving in the desired manner. Can you tell why?

```

void setlarge(int a,int b);
int main()
{
    int a,b;
    cin>>a>>b;
    setlarge(a,b);
}
void setlarge(int a,int b)
{
    if(a>b)
        a=-1;
    else
        b=-1;
}

```

40. Write a program using function which accept two integers as an argument and return its sum. Call this function from main() and print the results in main().
41. Write a function to calculate the factorial value of any integer as an argument. Call this function from main() and print the results in main().
42. Write a function that receives two numbers as an argument and display all prime numbers between these two numbers. Call this function from main().
43. Raising a number to a power p is the same as multiplying n by itself p times. Write a function called power that takes two arguments, a double value for n and an int value for p, and return the result as double value. Use default argument of 2 for p, so that if this argument is omitted the number will be squared. Write the main function that gets value from the user to test power function.
44. Write a function called zero_small() that has two integer arguments being passed by reference and sets the smaller of the two numbers to 0. Write the main program to access the function.
45. Write the output of the following program :

```
#include <iostream.h>
```

```

void X(int &A, int &B)
{
    A = A + B;
    B = A - B;
    A=A-B;
}
void main()
{
    int a = 4, b =18;
    X(a,b);
    cout<<a<<","<<b;
}

```

46. Write the output of the following program:

```

#include <iostream.h>
void X(int A, int &B)
{
    A = A+B;
    B = A-B;
    A = A-B;
}
void main()
{
    int a=4, b=18;
    X(a,b);
    cout<< a <<","<<b;
}

```

47. Write the output of the following program:

```

# include <iostream.h>
void Execute(int &B, int C=100)
{
    int TEMP = B + C;
    B += TEMP;
    if (C == 100)
        cout<<TEMP<<" "<<B<<" "<<C<<endl;
}
void main()
{
    int M= 90, N = 10;
    Execute(M);
    cout << M << " "<< N << endl;
    Execute(M,N);
    cout << M<<" "<<N<< endl;
}

```

48. Give the output of the following program

```

# include <iostream.h>
int global = 10;

```

```

void func(int &x, int y)
{
    x = x - y;
    y = x * 10;
    cout << x << << y << '\n';
}
void main()
{
    int global = 7;
    func (::global, global);
    cout << global << ", " << ::global << '\n';
    func(global, :: global);
    cout << global << ", " << ::global << '\n';
}

```

49. Write the output of the following program :

```

#include <iostream.h>
static int i=100;
void abc()
{
    static int i=8;
    cout<< "first=" <<i++;
}
main()
{
    static int i = 2;
    abc();
    cout << "second =" << i << endl;
    abc();
}

```

50. Write the output of the following program:

```

#include <iostream.h>
int func(int &x, int y = 10)
{
    if (x%y == 0)
        return ++x;
    else
        return y--;
}
void main()
{
    int p=20, q=23;
    q=func (p,q);
    cout << p << " " << " " << q << endl;
    p=func (q);
    cout<< p << " " << " " << q << endl;
    q=func (p);
}

```



```

    cout << p << " " << " " << q << endl;
}

```

51. Write a program that lets the user perform arithmetic operations on two numbers. Your program must be menu driven, allowing the user to select the operation (+, -, *, or /) and input the numbers. Furthermore, your program must consist of following functions:
 1. Function showChoice: This function shows the options to the user and explains how to enter data.
 2. Function add: This function accepts two number as arguments and returns sum.
 3. Function subtract: This function accepts two number as arguments and returns their difference.
 4. Function multiply: This function accepts two number as arguments and returns product.
 5. Function divide: This function accepts two number as arguments and returns quotient.
52. Write a C++ program to find the sum and average of one dimensional integer array.
53. Write a C++ program to swap first and last element of an integer 1-d array.
54. Write a C++ program to find the largest and smallest element of an array.
55. P is one-dimensional array of integers. Write a C++ function to efficiently search for a data VAL from P. If VAL is present in the array then the function should return value 1 and 0 otherwise.
56. Write a function in C++ which accepts an integer array and its size as arguments and replaces elements having odd values with twice its value and elements having even values with half its value.
For example,
If the array contains 3,4,5,16,9
Then the function should be arranged as 6,2,10,8,18
57. Write the prototype(only) of function named CHECKIT() that receive an array of integers, its size and character 'A' or 'D'. By default, the character should be 'A'. For the character 'A', the function sorts the array in ascending order, otherwise in descending order. Test the function in main().
58. Write a program to find the length of string.
59. Write a program to display string from backward.
60. Write a program to count number of words in string.
61. Write a program to concatenate one string contents to another.
62. Write a program to compare two strings they are exact equal or not.
63. Write a program to check a string is palindrome or not.
64. Write a program to find a substring within a string. If found display its starting position.
65. Write a program to reverse a string.
66. Write a program to convert a string in lowercase.
67. Write a program to convert a string in uppercase.
68. Write the output of the following program


```

#include <iostream.h>
#include <ctype.h>

```

```

void Encrypt(char T[])
{
    for (int i=0;T[i]!='\0';i+=2)
        if (T[i]=='A' || T[i]=='E')
            T[i]='#';
        else if (islower(T[i]))
            T[i]=toupper(T[i]);
        else
            T[i]='@';
}
void main()
{
    char Text[]="SaVE EArth";
    Encrypt(Text);
    cout<<Text<<endl;
}

```

69. Write a C++ program that checks whether the given character is alphabet or a digit. Add appropriate header file.
70. Write a function that reads two strings and append the first string to the second if the length of first string is smaller than the second string or vice versa. Finally displays the concatenated string. For example:-
 example-1: first string : Good second string: Morning; final string :GoodMorning
 example-2: first string : sensibly second string: Think; final string :Thinksensibly
71. Consider the following function that is intended to swap the values of two integers:

```

void false_swap(inta,int b)
{
    int t;
    t=a;
    a=b;
    b=t;
}
int main()
{
    int x=3;
    int y=4;
    false_swap(x,y);
    cout<<x<<" "<<y<<endl;
    return 0;
}

```

Why doesn't the function swap the contents of x and y? How can you rewrite the function to work correctly?

72. Write description and header file of the following in-built functions:-
- | | | | | |
|---------------|----------------|----------------|---------------|-------------|
| i.abs() | ii. ceil() | iii.floor() | iv.pow() | v.tolower() |
| vi. toupper() | vii. tolower() | viii.isupper() | ix. islower() | x.isalnum() |

xi.isalpha() xii.isdigit() xiii.strcat() xiv. strcmp() xv.strcpy()
 xvi.strlen() xvii.exit()

HTML Questions

- Expand the following tags used in HTML.
 i) ii)<VLINK> iii)<HR> iv)<P>
- Write the HTML command to display the following in your web page $X^2 + Y^2$.
- Write HTML code to generate following table:-

A	B		
C	D	E	H
C	H		

- Create CustomerSurvey.html to collect Customer feedback. After user has submitted the web page, he/she should be redirected to Thanks.html showing message “**Thanks for you feedback.**”

Customer First Name:	<input type="text"/>
Customer Last Name:	<input type="text"/>
Customer Email Address:	<input type="text"/>
Customer Phone Number:	<input type="text"/>
Customer Street Address:	<input type="text"/>
Customer City:	<input type="text"/>
Customer State:	<input type="text" value="AL"/>
Age	<input type="text" value=""/>
DOB:	<input type="text" value="Month/Day/Year"/>
What Type of Crust Do You Prefer?	<input type="radio"/> Thin Crust <input checked="" type="radio"/> Thick Crust <input type="radio"/> Deep Dish <input checked="" type="checkbox"/> Pepperoni <input checked="" type="checkbox"/> Mushroom <input type="checkbox"/> Sausage <input type="checkbox"/> Hamburg <input type="checkbox"/> Peppers <input checked="" type="checkbox"/> Anchovies
Pizza Toppings You Like	

5. Create StudentRegistration.html web page, after users submits required details, he/she should be redirected to Thanks.html showing message “**Thanks for you registration.**”

Student Registration Form	
Name	<input type="text"/>
Father Name	<input type="text"/>
Postal Address	<input type="text"/>
Personal Address	<input type="text"/>
Sex	<input type="radio"/> Male <input type="radio"/> Female
City	<input type="text" value="select.."/>
Course	<input type="text" value="select.."/>
District	<input type="text" value="select.."/>
State	<input type="text" value="select.."/>
PinCode	<input type="text"/>
EmailId	<input type="text"/>
DOB	<input type="text"/>
MobileNo	<input type="text"/>
<input type="button" value="Reset"/>	<input type="button" value="Submit Form"/>

6. Create following user form:-

Enter Name	<input type="text"/>
Select Gender	<input type="radio"/> Male <input type="radio"/> Female
Address	<input type="text"/>
Hobbies	<input type="checkbox"/> Dancing <input type="checkbox"/> Reading <input type="checkbox"/> Singing <input type="checkbox"/> Watching TV
<input type="button" value="Save"/>	<input type="button" value="Clear"/>

