Answer ALL questions | (The total marks: 105)

Calculators are NOT allowed

1ˢᵗ Question. Fill in the spaces　　　　　　marks:10

1. A CPU's word size is important because it determines which _____

2. 1 Gigabyte = _____ Kilobytes.

3. The four-step process of fetch, decode, execute, and store is called a(n): _____

4. _____ is the first operation of the information-processing cycle, and enables the computer to accept data.

5. _____ create archives by storing files in a special format.

6. RAM stands for

7. _____ is a replacement of people by machines and computers.

8. _____ is the unit responsible for performing Arithmetic and Logic operations.

9. _____ entered into the computer for processing through the use of input devices such as a keyboard or mouse.

10. _____ is set of tests to confirm that both the computer and its peripheral devices are working properly.

2ⁿᵈ Question. True/False　　　　　　marks:15

1. RAM is a small unit of fast memory built into the processor to improve performance.

2. The front panel includes power switch, drive activity light and power-on light.

3. A connector is a physical receptacle where the user can plug a peripheral device into the computer.

4. The information-processing cycle consists of three basic operations: input, processing, and output.

5. Data transfer rates for communication devices (modems) are measured in bits per second.

6. Data storage is measured in bytes.

7. The CPU is made up of the control unit and the ALU.

8. The control unit performs calculations and logical operations.

9. A key matrix is a chart that tells the processor what key has been pressed.

10. A virtual keyboard appears on a touch-sensitive screen and accepts input with a stylus or finger.

11. Virtual memory uses a portion of RAM to extend the hard disk.

12. The user interface allows the user to application programs.

13. Backup software creates a mirror image of the entire hard drive.

14. Disk cleanup utilities find and resolve disk file storage problems.

15. Application software is made up of two main parts: the operating system and system utilities.

3rd Question.   **marks:20**

1. Convert $(50)_{10}$ to binary.   (marks: 2)

2. Convert $(10001)_2$ to a representation using a base-3 number   (marks: 2)

3. Convert $(11101001001001)_2$ to hexadecimal.   (marks: 2)

4. What is the result of multiplying $(AC)_{16}$ by 2 in binary   (marks: 2)

5. Convert unsigned $(11001)_2$ into decimal.   (marks: 2)

6. Convert signed $(11001)_2$ using the 2's complement notation into decimal.   (marks: 2)

7. Add the two hexadecimal numbers $(3A45)_{16}$ and $(2E71)_{16}$.   (marks: 2)

8. How many bits are needed to store an address to a memory with 4K locations? (marks: 3)

9. How many different values can be represented in 8 bits in each of the following cases: unsigned, sign magnitude, and two's complement representations? Mention the allowed range of values in each case   (marks: 3)

4th Question   **marks: 20**

1. Draw a flowchart for a program that reads numbers and outputs the square of each input number until the user enters zero.   (marks: 10)

2. Differentiate between: (marks: 10)
   a. Second and third generation languages.
   b. Compiler and interpreter.
   c. Static and dynamic testing.
   d. Logic and syntax errors.
   e. Source and object program.

5th Question   **marks: 20**

1. Re-write following program using C++ switch-case statement   (marks: 10)

```cpp
int nStars;
cin >> nStars;
if ( nStars >= 5  &&  nStars <= 7 )
   cout << "Excellent hotel";
else if ( nStars >= 3)
   cout << "Good hotel";
else
   cout << "Not recommended";
```

2. Correct the following program which displays the first N Fibonacci sequence values: 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, ...   (marks: 10)

```
int N, first, second;
for (i = 1;  i <  N;  N++)
   next = first + second;
   cin << next  ,  '\t';
   second =  next;
   first  =  second;
```

6th Question. Display the output   marks: 20

A.
```
int n1 =8, n2 =4, x =1;
while ((x*n1) % n2 !=  0)
     x++;
cout << n1 * x;
```

B.
```
int x = 2, sum = 0;
while (x <= 18)
      sum += x * 3;
cout << sum;
```

C.
```
bool x = 43 % 2 >= 0;
if (x)
      cout << "AB";
else
      cout << "XY";
```

D.
```
int n =3, m =4, result =0;
for(int i =1; i <= m; i++)
         result  +=  n;
         cout << result;
```

E.
```
int i = 1, j = 2, k = 3;
if (i >= j)
if (i > k)
      cout << 'X';
else
      cout << 'Y';
```

F.
```
int s = 2, n = 5;
s *= n - 3;
(s >= 4) ?
cout << 'A' :
cout << 'B';
```

G.
```
int i, j;
for (i = 4; i >= 1; i--)
{
  for (j = 1; j <= i; j++)
      cout << '*';
      cout << endl;
}
```

H.
```
int i, n = 3;
for (i= 1; i <= n*n; i++)
{
      cout << i;
      if ( i % n  ==  0)
      cout << endl;
}
```

I.
```
char k = 'B';
int  i = 5;
do {
      cout << ++k;
   } while ( --i >=  3 );
```

J.
```
int x = 4;
if (x = 12)
cout << 'A';
cout << 'B';
```

With Our Best Wishes.

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