SARDAR VALLABHBHAI NATIONAL INSTITUTE OF TECHNOLOGY

B. TECH. I (Sem. I)

Sep-2011 (Mid Sem Exam)

Fundamentals of Computer and Programming

Time: **1 Hr.** Total Marks: **30**

Q. 1 Answer the followings: [Any Four] **[10]**

1. Differentiate between 2nd and 4th generation computers.
2. Describe different types of registers with their functions used in the processing by computer.
3. Define different memory access modes.
4. Enlist steps for program development cycle.
5. Explain with diagram, how the control unit controls the other parts of computer.

Q. 2 Answer the followings with necessary steps: [Any Two] **[05]**

1. Subtract 36 from 22 using 2's complement method and convert the result into binary.
2. Add $(1A62.1F)_{16}$ and $(B7CA.24)_{16}$ and convert the result into Octal.
3. Subtract 127_8 from 750_8 and convert the result into decimal and hexadecimal.

Q. 3 Write the appropriate data type declaration statement and the input statement for the followings: [Any Four] **[04]**

1. To store 100 student's name
2. To store student Admission Code for example: U10CO283
3. To store IBM's scholarship amount Rs. 100000
4. To store value: -1.2E-1
5. To store the student choice, whether he/she should have educational tour

Q.4 Answer the followings: **[08]**

1. Find errors in following 'C' statements , if any:

   a) a*a = b+c+d;

   b) int a[][]={1,1};

   c) for (i=0, i<=5; i++)

   d) switch(1.1)

2. What will be the output of the following code:

   a)
   ```
   char c;
   c='C'+'A'-'A'+1;
   printf("%c",c);
   ```

   b)
   ```
   int x=10, y=25;
   x=(x<y) ? (y+x) : (y-x);
   printf("%d",x);
   ```

3. Change the following for statement to the while statement:

   ```
   for( ; scanf("%d", &m) != -1 ; )
     printf("%d", m);
   ```

4. Draw the flowchart to check the given number is prime number or not.

Q.5 Write the 'C' program for the following: [Any One] **[03]**

1. To generate the series: -16, -8, -4, -2, 0, 2, 4, 6, 8.
2. To find the sum of series: $\frac{1}{2} + \frac{3}{4} + \frac{5}{6} + \frac{7}{8} + \ldots + \frac{99}{100}$

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