Roll No.:_____   **Name:**_____

1. **Consider the following program:**   **1+1+1**

```
void main(){
        char a, b;
         int c;
        scanf("%c%c%d", &a, &b, &c);
        if (a == 'a')      {
           if (b == 'a')
                printf("%c\n", b);
           else
                printf("%c\n", a);          }
        else
           printf("%d\n", c);}
```

Write the output if the inputs are

   a) ba2   **b)** aa3   **c)** ab4

   Ans: (a)2 (b)a (c) a

2. **Rewrite the following code without using "break" statement so that the functionality of the code should not get changed:**   **4**

```
#include<stdio.h>
void main()
{
        int num, sum = 0;
        while(1)
        {
                printf("\nEnter any number. Enter 999 to stop:");
                scanf("%d", &num);
                if(num == 999)
                        break;
                sum += num;
        }
        printf("\n SUM = %d\n", sum);
}
```

Ans:
#include<stdio.h>
void main()
{
int num, sum = 0;

printf("\nEnter any number. Enter 999 to stop:");
scanf("%d", &num);
for(; num!=999)
{
 sum += num;

```
   printf("\nEnter any number. Enter 999 to stop:");
   scanf("%d", &num);
  }
  printf("\n SUM = %d\n", sum);
  }
```
No partial marks.

3. Write conditional operators to evaluate the following function   2
   $y = 2.4x + 3$, for $x <= 2$
   $y = 3x - 5$, for $x > 2$

   Ans: y = (x<=2) ? (2.4x + 3) : (3x - 5) or equivalent
   No partial marks.

4. See the following code segment: 1
   ```
   char arr[3][4]={'a','z','b','y','c','x','d','w','e','v','f','u'};
   printf("%d\n", arr[1][2]);
   ```
   What will be printed?

   Ans: 100

5. What will be the output of the following code segment: 1

```
char s[10]="Hello";
```

```
int i;
```

```
for(i=0;s[i]!='\0';i++);
```

```
        printf("%d\n", i);
```

Ans: 5

Only one value will be printed. Marks will be given only for this answer. For any other answer (even containing 5) will get 0 marks.

6. Rewrite the following code segment using while loop, so that, the same task will be performed: 3

```
do{
```

```
statement;
```

```
}while(expression);
```

Ans.

statement;

while(expression){

**   statement;   }**

7. Study the code below and answer the questions that follow: 1+1

```c
1  #include<stdio.h>
2  /* Assume input given is >999 and <9999 */
3  int main(){
4    int x, y =0;
5    scanf("%d", &x);
6    while(x>0) {
7      y+=((y*=10), x%10);
8      x/=10;
9    }
10   printf("%d\n", y);
11   return 0;
12 }
```

(a) What will be printed if the input to the program is 5634?

Ans: 4365

(b) Give a precise one line description of what the program is doing?

Ans: It reverses a 4-digit number.

8. Study the code below and give the output of the program.   4

```c
1  #include<stdio.h>
2  int main(){
3    int i=20, j, a[]={10};
4    {
5      int i=-20;
6      i+=10;
7      printf("%d %d\n", i, a[0]);
8    }
9    for(j=0; j<=2; j++){
10     i+=10;
11     a[0]+=10;
12     printf("%d %d\n", i+j, a[0]);
13   }
14   return 0;
15 }
```

Ans:
-10 10
30 20
41 30
52 40

9. a. What will be the output of the following code segment: 1+1

```c
for(i=0;i<6;i++){
    if(i%2==0)    continue;
    printf("%d", i);}
```

b. If you write "break" instead of "continue" in the above segment, then what will be the output?

Ans: a. 135   b. Nothing will be printed

10. What will be printed if you run the following code segment: 4

```
   int arr[3][4] = {
1, 4, 6, 0,
11, 1, 10, 1,
16, 68, 5, 2 } ;
int j=1;
printf("%d\t",arr[0][1]<arr[1][1]);
printf("%d\t%d\t",j,arr[0][j++]);
printf("%d\n",arr[j++][0]);
```

Ans. 0 2   4   16

Maintain the order. 1 mark for each correct answer.

11. Assume you have a string array s in your program. Write a code segment to reverse the string array, without using any extra array. 4

Ans. The NULL character should remain at the end. If the student writes a correct code without taking care of the NULL character, then cut 1 mark. Otherwise give 0.