SOLUTIONS

QUESTION 1 (X marks)

Answer: (3m)

```
#include <iostream>
using namespace std;

int main()
{
    int x;
    cout << "Enter a single digit integer: ";
    cin >> x (0.5m);
    if (x == 2||x == 3||x == 5||x == 7) each 0.5m
                                        (operator 0.5m)
        cout << "The digit is prime" << endl;
    else
        cout << "The digit is not prime" << endl;

    return 0;
}
```

QUESTION 2 (8 marks) (1m x 8)

Answer:

```
x1 is 0
x2 is 2
i is 2
j is 5
k is 12
y is 6
z is 7
f is 0.0 @ f is 0
```

QUESTION 3 (5 marks)

Answer:

```
int main()
{
  // Enter the first point with two double values

  cout << "Enter x1 and y1: ";
  double x1, y1;
  cin >> x1 >> y1;   (1m)

  // Enter the second point with two double values

  cout << "Enter x2 and y2: ";
  double x2, y2;
  cin >> x2 >> y2;    (1m)

  // Compute the distance
  //using pow
  double distance1 = pow((x1-x2)*(x1-x2) + (y1-y2)*(y1-
y2),0.5);    (2.5m)
  cout << "The distance of the two points is " <<
distance1;   (0.5m)

  //using sqrt (alternative)
  double distance2 = sqrt((x1-x2)*(x1-x2) + (y1-y2) *y1-
y2));
  cout << "\nThe distance of the two points is " <<
distance2;
  return 0;
}
```

QUESTION 4

Answer:

(4marks)

	Description	**C++ Statement**
i	Determine if count is not greater than 20	if !(count > 20) **(1m)**
ii	Determine if count is within the range of 0 through 100.	if (count >= 0 && count <= 100) **(1.5m)**
iii	Determine if count is outside the range of 0 through 100.	if (count < 0 || count > 100) **(1.5m)**

QUESTION 5

Answer:

(4.5 marks)

	Description	Conditional Statement
i	Assign 0 to z if a is less than 10, otherwise it should assign 7 to z .	z = (a < 10) ? 0: 7; **(1.5m)**
ii	Assign base *10 to population if temp is greater than or equal to 45 otherwise it should be assigned with base *2	population = (temp > =45)? :base * 10 : base * 2; **(1.5m)**
iii	Assign max with n1 if n1 is greater than n2. Otherwise max will be assigned with n2.	max = (n1>n2)? n1:n2 **(1.5m)**

QUESTION 6

Answer:

(4.5 marks. 0.5m each line)

i.

n	Output
-1	`World`
1	`Hello World`
11	`Hi World`

ii.

n	Output
0	`Computer Programming`
1	`<NO OUTPUT>`
3	`Welcome To The World Of`

iii.

n	Output
1	`11`
2	`20`
3	`13`

QUESTION 7

Answer:

(9.5 marks)

i	`int m = n%7;` `if (m==0) p = 1;` **(1.5m)** `else if ( (m==1) || (m==2)) p = 2;` **(2m)** `else p=3;` **(0.5m)**	4 marks

ii	`switch (n%7){` **(1m)**
	`case 0 : p = 1;`
	`break;` **(1.5m)**
	`case 1:` **(0.5m)**
	`case 2: p=2;`
	`break;` **(1.5m)**
	`default: p = 3;` **(1m)**
	`}`
		5.5 marks

QUESTION 8

Answer:

(6 marks)

0.5m each line

i	110 130 140 160 170 The last value of n is 170	3 marks
ii	i= 1 j=1 i= 2 j=2 i= 2 j=1 i= 3 j=3 i= 3 j=2 i= 3 j=1	3 marks

QUESTION 9

Answer:
(2 marks)

```
int n;
cout << "Enter a non-negative integer: ";
cin >> n; (0.5m)
while (n < 0)  (0.5m)
{
 cout << "The integer you entered is negative." <<
endl;
 cout << "Enter a non-negative integer: ";
 cin >> n; (0.5m)
}
```

Overall logic(0.5m)

QUESTION 10

Answer:

(3.5 marks)

```
#include<iostream>
#include<fstream>

using namespace std;

int main()
{
     int n;
     int total;
     ofstream fout;

     fout.open("output.txt");

     // (i). Initialize the variable total    (0.5m)
     total = 0;

     do{
          //  (ii). Read a number from the keyboard
(0.5m)
          cout <<"Enter a number => ";
          cin >> n;

          //(iii).Consider only positive numbers for writing
into
          //      the output file and the calculation
```

```
            //      of the total.   (1.5m)


            if (n>0){
                  fout << n << endl;
                  total = total + n;
            }

      }while(n!=-999);     //(iv).Terminate when the number is -999  (0.5m)

      // (v). Write the total into the output file.   (0.5m)
      fout << "Total = " << total << endl;

      fout.close();
}
```