

COMP SCI 20 (CRT) CHAPTER 4

#1.

- a) if (grade >= 90)
 {
 System.out.print("Great Job"); }
b) If (number < 20 || number > 50)
 {
 System.out.print("Error"); }
c) If (y < 100)
 {
 y += 2;
 }

#2.

```
if (num1 > num2)
{
    System.out.print("The first number is larger");
}
else if (num1 < num2)
{
    System.out.print("The first number is larger");
}
else
{
    System.out.print("The numbers are equal");
}
```

#3. a)

```
if (num % 2 == 0) {
    System.out.println("Even number");
}
else {
    System.out.println("Odd number");
}
```

b)

```
switch(num%2)
{
    case 0:
        System.out.println("Even Number");
        Break;
    Default:
        System.out.println("Odd number");
}
```

4.

- a) (int)((50-1 + 1)*Math.random() + 1);
- b) (int)((100-20+1)*Math.random() + 20);
- c) (21-10+1)*Math. random() + 10;

5. Logical error: If the user input is of age 65 or 18, there would be an error as there are no statements addressing if that happens.

```
If (age < 18) {
    System.out.println("child");
} else if (age >=18 && age<65) {
    System.out.println("adult");
} else if (age>=65) {
    System.out.println("senior");
}
```

Now the user can input an age of 65 or 18 and rather than getting an error, they get a proper response from the program.

6.

- a)TRUE
- b)False
- c)TRUE
- d)TRUE
- e)TRUE
- f)TRUE
- g)TRUE

8)

a) True

b) False, Nested if statements are if statements which are nested inside another if statement. If else on the other hand isn't nested, and is just used to check another condition.

c) False, the expression in a switch statement will evaluate to an integer.

d) True

e) False, type casting is used when we NEED to change the variable type, to generate a random integer, you can do it without type casting to a double.

f) True

g) True

h) False ! is always evaluated before &&.

i) True

j) True