CS101
tutorial sheet - Operators and control statements

Try to tell the output of the given samples codes .

Q 1. If-Else Question:

```
#include <stdio.h>

int main() {
   int x = 5;

   if (x > 5)
      printf("A");
   else if (x > 3)
      printf("B");
   else if (x > 2)
      printf("C");
   else
      printf("D");

   return 0;
}
```

Q 2. Switch Case Question:

```
#include <stdio.h>

int main() {
   int num = 2;

   switch (num) {
      case 1:
         printf("One ");
      case 2:
         printf("Two ");
      case 3:
         printf("Three ");
      default:
         printf("Default ");
   }

   return 0;
}
```

Q 3. Nested If-Else Question:

```
#include <stdio.h>

int main() {
   int x = 5, y = 10;
```

```
    if (x > 3) {
        if (y > 5)
            printf("A");
        else
            printf("B");
    } else {
        printf("C");
    }

    return 0;
}
```

Q4. Ternary Operator Question with Nested Ternary Operators:

```
#include <stdio.h>

int main() {
    int x = 5, y = 10, z = 15;
    int result = (x > y) ? ((x > z) ? x : z) : ((y > z) ? y : z);

    printf("%d", result);

    return 0;
}
```

Q5. Ternary Operator Question with Character Comparison:

```
#include <stdio.h>

int main() {
    char grade = 'B';
    char result = (grade == 'A') ? 'P' : ((grade == 'B') ? 'Q' : 'R');

    printf("%c", result);

    return 0;
}
```

Q 6. Ternary Operator Question with Mixed Data Types:

```
#include <stdio.h>

int main() {
    int x = 5;
    char result = (x > 0) ? 'A' : 65;

    printf("%c", result);

    return 0;
}
```

Q 7. Switch Case with Ranges

```
#include <stdio.h>

int main() {
   int score = 85;

   switch (score / 10) {
      case 9:
         printf("A");
         break;
      case 8:
         printf("B");
         break;
      case 7:
         printf("C");
         break;
      case 6:
         printf("D");
         break;
      default:
         printf("F");
   }

   return 0;
}
```

Q 8. Switch Case with Ranges

```
#include <stdio.h>

int main() {
   char letter = 'J';

   switch (letter) {
      case 'A' ... 'D':
         printf("Pass");
         break;
      case 'E' ... 'H':
         printf("Average");
         break;
      default:
         printf("Fail");
   }

   return 0;
}
```

Q 9 Same range type but using If-else

```
#include <stdio.h>

int main() {
```

```
    char letter = 'J';

    if (letter >= 'A' && letter <= 'D') {
        printf("Pass");
    } else if (letter >= 'E' && letter <= 'H') {
        printf("Average");
    } else {
        printf("Fail");
    }

    return 0;
}
```

Q 10. Operator Precedence:

What is the result of the following expression?

int result = 5 + 10 * 2 / 2 - 3;

Q 12. Combining Logical Operators:

What is the value of `result` in the following code?

```
int x = 5, y = 10, result;
result = (x > 3) && (y < 15);
```

Q 13. If-Else Statement:

What will be the output of the following code?

```
int x = 10;
if (x > 5)
    printf("A");
else if (x > 7)
    printf("B");
else
    printf("C");
```

Q 14. Switch Case:

What will be the output of the following code?

```
char grade = 'B';
switch (grade) {
    case 'A':
        printf("Excellent");
        break;
    case 'B':
        printf("Good");
        break;
    case 'C':
        printf("Average");
```

```
        break;
    default:
        printf("Invalid grade");
}
```