

CSE 101 Midterm 1

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1. What is the correct syntax for a java class?

- a) public static class Sample { }
- b) public Sample class { }
- c) public static void class { }
- d) public class Sample { }
- e) public class main Sample{ }

2. Which of the following can be a variable name?

- a) double
- b) int
- c) for
- d) lsum
- e) count

3. What is the value of integer variable x after the execution of the following line?

```
int x = 5 / 2 + 3 + 1 / 2;
```

- a) 1
- b) 5
- c) 5.5
- d) 0
- e) 6

4. What is the value of the following Java expression?

```
15 % 6 + 9
```

- a) 1
- b) 0
- c) 12
- d) 11.5
- e) 9.9

5. Which of the following is the java counterpart for the following math expression?

$$\frac{x^2 + 2}{3y - 5}$$

- a) $(x * x + 2)/(3 * y - 5)$
- b) $x^2 + 2/(3 * y - 5)$
- c) $(x * x + 2)/3y - 5$
- d) $x * x + 2/3 * y - 5$
- e) $(x * x + 2)/(3y - 5)$

6. Which one is a valid declaration of a boolean variable?

- a) boolean b1 = 1;
- b) boolean b2 = "false"
- c) boolean b3 = false;
- d) boolean b4 = 'true'
- e) BOOLEAN b5 = true;

7. If you add an int and a double, the result will be

- a) int or double
- b) double
- c) int
- d) string
- e) can not be known

8. What is the operator for checking inequality of two variables in Java?

- a) ==
- b) =
- c) <>
- d) !=
- e) =!

9. Which statement reads a double value from user?

- a) Scanner input= new Scanner (System.in)
- b) System.out.println("Enter a new double");
- c) int x = input.nextInt();
- d) double x = Scanner.nextDouble();
- e) double x = input.nextDouble();

10. What is the output of the following program?

```
int a = 4;
int b = 8;
int c = 12;
int d = 8;
System.out.println(a + b * c + d);
```

- a) 160
- b) 152
- c) 240
- d) 80
- e) 108

11. Assume n is a Java variable of type `int`. Write a code to print to the screen positive if n is positive, zero if n is zero, and negative if n is negative?

a)

```
if (n > 0){
    System.out.println(" positive ");
} else {
    if (n == 0)
        System.out.println("zero");
    else
        System.out.println("negative");
}
```

b)

```
if (n > 0){
    System.out.println(" positive ");
} else (n==0) {
    System.out.println("zero");
} default {
    System.out.println("negative");
}
```

c)

```
if (n > 0){
    System.out.println(" positive ");
} else {
    if (n = 0)
        System.out.println("zero");
    else
        System.out.println("negative");
}
```

d)

```
if (n > 0){
    System.out.println( positive );
} else {
    if (n == 0)
        System.out.println(zero);
    else
        System.out.println(negative);
}
```

e)

```
if (n > 0){
    System.out.println(" positive ");
} else {
    if (n == 0) ;
        System.out.println("zero");
    else
        System.out.println("negative");
}
```

12. Translate this statement into Java: If the bmi is less than 24 or larger than 30, print "not normal".

a)

```
if (bmi < 24 && bmi > 30);
    System.out.println("not_normal");
```

b)

```
if (bmi > 24 && bmi < 30)
    System.out.println("not_normal");
```

c)

```
if (24 < bmi < 30)
    System.out.println("not_normal");
```

d)

```
if (bmi < 24 or bmi > 30)
    System.out.println("not_normal");
```

e)

```
if (bmi < 24 || bmi > 30);
    System.out.println("not_normal");
```

13. Suppose x is 42, what is the output of the following code?

```
if (x > 18)
    System.out.print("1");
if (x > 40)
    System.out.print("2");
if (x > 60)
    System.out.print("3");
if (x > 80)
    System.out.print("4");
```

a) 1

b) 12

c) 3

d) 34

e) 4

14. How can you define a constant number Of Sections with value 15?

a) `final int NUMBER OF SECTIONS = 15;`

b) `int NUMBER OF SECTIONS = 15;`

c) `final int NUMBEROFSECTIONS = 15;`

d) `double NUMBEROFSECTIONS = 15;`

e) `final double NUMBER OF SECTIONS = 15;`

15. Which of the following codes reads his/her grade from the user and prints "Success" if the grade is above 50, "Fail" otherwise?

a)

```
Scanner input = new Scanner(System.in);
int grade = input.nextInt ();
if (grade > 50)
    System.out.println(" Fail ");
else
    System.out.println("Success");
```

b)

```
int grade = input.nextInt ();
Scanner input = new Scanner(System.in);
if (grade > 50);
    System.out.println(" Success");
else
    System.out.println(" Fail ");
```

c)

```
Scanner input = new Scanner(System.in);
int grade = input.nextInt ();
if (grade > 50)
    System.out.println("Success");
else
    System.out.println(" Fail ");
```

d)

```
Scanner input = new Scanner(System.in);
int grade = input.nextInt ();
if (grade > 50);
    System.out.println("Success");
else
    System.out.println(" Fail ");
```

e)

```
int grade = input.nextInt ();
Scanner input = new Scanner(System.in);
if (grade > 50)
    System.out.println(" Fail ");
else
    System.out.println("Success");
```

16. What are all possible outputs of the following code?

```
int choice = input.nextInt ();
switch (choice){
    case 0: System.out.print("1");
    case 1: System.out.print("2");
    case 2: System.out.print("3");
    case 3: System.out.print("4");
    default: System.out.print("0");
}
```

- a) 1, 2, 3, 4, 0
- b) 1, 2, 3, 4
- c) 0, 40, 340, 2340, 12340
- d) 1, 12, 123, 1234, 12340
- e) 12340

17. Which of the following code prints (i) "Divisible by 2" if a given number N is divisible only by 2, and (ii) "Divisible by 3" if a given number N is divisible only by 3, and (iii) "Divisible by 2 and 3" if a given number N is divisible by 2 and 3?

a)

```
if (N % 2 == 0)
    System.out.println(" Divisible _by_2");
else
    if (N % 3 == 0)
        System.out.println(" Divisible _by_2_and_3");
    else
        System.out.println(" Divisible _by_3");
```

b)

```
if (N % 2 == 0)
    System.out.println(" Divisible _by_2");
else
    if (N % 3 == 0)
        System.out.println(" Divisible _by_3");
    else
        System.out.println(" Divisible _by_2_and_3");
```

c)

```
if (N % 2 == 0)
    if (N % 3 == 0)
        System.out.println(" Divisible _by_2_and_3");
    else
        System.out.println(" Divisible _by_2");
else
    System.out.println(" Divisible _by_3");
```

d)

```
if (N % 2 == 0)
    if (N % 3 == 0)
        System.out.println(" Divisible _by_2_and_3");
    else
        System.out.println(" Divisible _by_2");
else
    if (N % 3 == 0)
        System.out.println(" Divisible _by_3");
```

e)

```
if (N % 2 == 0)
    System.out.println(" Divisible _by_2");
else
    if (N % 3 == 0)
        System.out.println(" Divisible _by_2_and_3");
    else
        System.out.println(" Divisible _by_3");
```

18. Which of the following code prints (i) "Divisible by 2" if a number N less than 10 is divisible only by 2, and (ii) "Divisible by 3" if a number N less than 10 is divisible only by 3, and (iii) "Divisible by 2 and 3" if a number N less than 10 is divisible by 2 and 3?

a)

```
switch (N){
  case 2:
  case 4:
  case 8: System.out.println(" Divisible by 2");
    break;
  case 3:
  case 9: System.out.println(" Divisible by 3");
    break;
  case 6: System.out.println(" Divisible by 2 and 3");
}
```

b)

```
switch (N){
  case 2:
  case 4:
  case 8: System.out.println(" Divisible by 2");
    break;
  case 3:
  case 9: System.out.println(" Divisible by 3");
    break;
  default: System.out.println(" Divisible by 2 and 3");
}
```

c)

```
switch (N){
  case 2:
  case 4:
  case 8: System.out.println(" Divisible by 2");
  case 3:
  case 9: System.out.println(" Divisible by 3");
  case 6: System.out.println(" Divisible by 2 and 3");
}
```

d)

```
switch (N){
  case 2:
  case 4:
  case 8: System.out.println(" Divisible by 2");
  case 3:
  case 9: System.out.println(" Divisible by 3");
  default: System.out.println(" Divisible by 2 and 3");
}
```

e) None of the above

19. Which of the following codes is the same as the following code?

```
if (x == 2 || x == 4)
  System.out.println("Even");
else
  if (x == 1 || x == 3)
    System.out.println("Odd");
  else
    System.out.println(" Invalid ");
```

a)

```
switch (x){
  case 2:
  case 4: System.out.println("Even");
  case 1:
  case 3: System.out.println("Odd");
}
```

b)

```
switch (x){
  case 2:
  case 4: System.out.println("Even");
    break;
  case 1:
  case 3: System.out.println("Odd");
    break;
}
```

```
switch (x){
  case 2:
  case 4: System.out.println("Even");
    break;
  case 1:
  case 3: System.out.println("Odd");
    break;
  default: System.out.println(" Invalid ");
}
```

d)

```
switch (x){
  case 2:
  case 4: System.out.println("Even");
  case 1:
  case 3: System.out.println("Odd");
    break;
}
```

```
switch (x){
  case 2:
  case 4: System.out.println("Even");
    break;
  case 1:
  case 3: System.out.println("Odd");
  default: System.out.println(" Invalid ");
}
```

20. What is the value of sum after the following loop is executed?

```
sum = 0;
for (num = 1; num <= 5; num+= 2){
    sum += num;
}
System.out.println(sum);
```

- a) 15
- b) 9
- c) 1
- d) 5
- e) 8

21. Which of the following codes print numbers from 23 to 50 in one line?

a)

```
for (int i = 23; i < 50; i++)
    System.out.print("i");
```

b)

```
for (int i = 23; i < 50; i++)
    System.out.println(i);
```

c)

```
for (int i = 23; i <= 50; i++)
    System.out.print("i");
```

d)

```
for (int i = 23; i <= 50; i++)
    System.out.print(i);
```

e)

```
for (int i = 23; i <= 50; i++)
    System.out.println(i);
```

22. Which of the following for loops prints all the multiples of 5 from 10 to 100.

a)

```
for (int i = 10; i <= 100; i++)
    System.out.println(i);
```

b)

```
for (int i = 10; i < 100; i = i + 5)
    System.out.println(i);
```

c)

```
for (int i = 10; i <= 100; i = i + 5)
    System.out.println(i);
```

d)

```
for (int i = 10; i <= 100; i = i - 5)
    System.out.println(i);
```

e)

```
for (int i = 10; i < 100; i = i - 5)
    System.out.println(i);
```

23. Which of the following codes prints 10 times "CSE101" to the screen?

a)

```
for (int i = 0; i < 20; i++)
    System.out.println("CSE101");
```

b)

```
for (int i = 0; i <= 10; i++)
    System.out.println("CSE101");
```

c)

```
for (int i = 1; i <= 20; i = i + 2)
    System.out.println("CSE101");
```

d)

```
for (int i = 0; i <= 20; i = i + 2)
    System.out.println("CSE101");
```

e)

```
for (int i = 0; i <= 10; i++)
    System.out.println(CSE101);
```

24. Which of the following codes produce the following output?

```
***
***
***
```

a)

```
for (int i = 1; i <= 3; i++){
    System.out.println("*");
    System.out.println("*");
}
```

b)

```
for (int i = 1; i <= 3; i++){
    System.out.println("*");
    System.out.println("*");
    System.out.println("*");
}
```

c)

```
for (int i = 1; i <= 6; i = i + 2){
    System.out.println("*");
}
for (int i = 2; i <= 6; i = i + 2){
    System.out.println("*");
}
```

d)

```
for (int i = 1; i <= 3; i++){
    System.out.print("*");
    System.out.print("*");
    System.out.println("*");
}
```

e)

```
for (int i = 1; i <= 3; i++){
    System.out.print("*");
    System.out.println("*");
}
```

25. What is the output of the following code?

```
for (int x = 1; x < 5; x++) {
    System.out.println(x);
    if (x == 3)
        x++;
    else
        x = x + 2;
}
```

a)

```
1
4
```

b)

```
1
2
3
4
```

c)

```
1
2
3
4
5
```

d)

```
1
3
5
```

e)

```
1
3
4
```