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Date: 12/21/2018 **Class: Computer Science 2 2018**
Score: 80 / 80 (100%)

CS2 Mid-Term Exam 2017

TRUE/FALSE

T 1. A method can be used as an argument for another method.

Points: 1 / 1

T 2. Subroutines in Java can be either static or non-static.

Points: 1 / 1

T 3. Every subroutine in Java must be defined inside a class.

Points: 1 / 1

T 4. The modulus operator (%) results in the remainder of integer division.

Points: 1 / 1

T 5. `x=10/y*(127/x);` is the same as `x = 10 / y * (127/x);`

Points: 1 / 1

MULTIPLE CHOICE

A 6. GUI programs read _____ from the user and behave accordingly.

a. events
b. orders
c. command-line
d. files

Points: 1 / 1

B 7. How can we easily find out the width of a component?

a. getHeight()
b. getWidth()
c. getSize()
d. use a ruler

Points: 1 / 1

A 8. How can we easily find out the height of a component?

a. getHeight()

b. getWidth()

c. getSize()

d. look very closely at the screen and count the pixels

Points: 1 / 1

B 9. A _____ can hold multiple lines and can be set to read only or read and write.

a. JButton

b. JTextarea

c. JTextfield

d. JLabel

Points: 1 / 1

C 10. A _____ is a component that has two states: selected or unselected.

a. JButton

b. JComboBox

c. JCheckBox

d. JLabel

Points: 1 / 1

B 11. The _____ class provides a way to let the user select one option from a list of options.

a. JButton

b. JComboBox

c. JTextfield

d. JLabel

Points: 1 / 1

B 12. Which of the following sentences can be translated into a conditional statement?

a. Tomorrow is the start of the second semester.
b. If you are a national merit finalist, you will receive a scholarship.
c. Your SAT score is 1250.
d. Go straight to jail; do not pass go; do not collect any money.

Points: 1 / 1

A 13. Which Java keyword or keywords are used for *one-way selection*?

a. **if** only
b. **if ... then** only
c. **if ... else** only
d. **if ... then ... else**

Points: 1 / 1

B 14. What is the output of the following program segment?

```
double bonus = 500.0;
double sales = 200000.0;
if (sales >= 300000.0)
        bonus += 250.0;
System.out.println("Bonus: " + bonus);
System.out.println("The End");
```

a. `Bonus: 50.0`
   `The End`
b. `Bonus: 500.0`
   `The End`
c. `Bonus: 750.0`
   `The End`
d. No output

Points: 1 / 1

C 15. What is the output of the following program segment?

```
int k;
k = 4000;
if (k < 3000)
        System.out.println("k = " + k);
        System.out.println("k = " + k);
```

a. 4000
   4000
b. k = 4000
   k = 4000
c. k = 4000
d. No output

Points: 1 / 1

D 16. What is the output of the following program if **4000** is entered at the keyboard?

```
Scanner input = new Scanner(System.in);
int k = input.nextInt();

if (k < 3000)
{
        System.out.println("k = " + k);
        System.out.println("k = " + k);
}
```

a. 4000
   4000

b. k = 4000
   k = 4000

c. k = 4000

d. No output

Points: 1 / 1

C 17. Which of the following Java keywords are used for *two-way selection*?

a. **if** only
b. **if ... then** only
c. **if ... else** only
d. **if ... then ... else**

Points: 1 / 1

C 18. What is the output of the following program segment?

```
int n1 = 100;
int n2 = 200;
int n3 = n1 / n2;
if (n3 > 0)
{
        n2 = n1;
        n1 = n2;
}
else
{
        n1 = n2;
        n2 = n1;
}
System.out.println(n1 + "  "  + n2);
```

a. 100 200
b. 200 100
c. 200 200
d. 100 100

Points: 1 / 1

C 19. What is the value of **num** at the conclusion of the following program segment?

```
char qwerty = 'B';
int num = 100;
switch(qwerty)
{
        case 'A':  num ++;  break;
        case 'B':  num += 2;
        case 'C':  num += 3;  break;
        case 'D':  num += 4;
}
```

a. 100
b. 102
c. 105
d. 109
e. Error message

Points: 1 / 1

B 20. What is the output of the following program, after 8 is entered at the keyboard?

```
Scanner input = new Scanner(System.in);
int dayNum = input.nextInt();
switch (dayNum)
{
        case 1  :  System.out.println(”Sunday”); break;
        case 2  :  System.out.println(”Monday”); break;
        case 3  :  System.out.println(”Tuesday”); break;
        case 4  :  System.out.println(”Wednesday”); break;
        case 5  :  System.out.println(”Thursday”); break;
        case 6  :  System.out.println(”Friday”); break;
        case 7  :  System.out.println(”Saturday”); break;
        default  :  System.out.println(”Wrong Input”);
}
```

a. `Thursday`

b. `Wrong Input`

c.
```
Thursday
Friday
Saturday
Wrong Input
```

d. Error message

e. No Output

Points: 1 / 1

C 21. The **for** loop structure is best used for what kind of Repetition?

a. pre-condition
b. post-condition
c. fixed

Points: 1 / 1

C 22. What do selection control structures and repetition control structures have in common?

a. Both structures require user input.
b. Both structures generate output.
c. Both structures require a conditional statement.
d. Both structures require a user-created function.

Points: 1 / 1

A 23. What is the output of the following program segment?

```
for (int k = 1; k <= 5; k++)
        System.out.print(k);
```

a. 12345

b. 1 2 3 4 5

c. 1
2
3
4
5

d. 54321

e. 5
4
3
2
1

Points: 1 / 1

B 24. What is the output of the following program segment?

```
for (int k = 5; k > 0; k--)
        System.out.println("What is OOP?");
```

a. What is OOP?
What is OOP?
What is OOP?
What is OOP?
What is OOP?
What is OOP?

b. What is OOP?
What is OOP?
What is OOP?
What is OOP?
What is OOP?

c. What is OOP?
What is OOP?
What is OOP?
What is OOP?

d. What is OOP?

e. No output

Points: 1 / 1

C 25. What is the output of the following program segment?

```
for (int k = 1; k < 20; k+=3)
        System.out.print(k + "  ");
```

a. 1 4 7 10 13 16 19 22
b. 3 6 9 12 15 18 21
c. 1 4 7 10 13 16 19
d. 3 6 9 12 15 18

Points: 1 / 1

A 26. What is the output of the following program segment?

```
int j;
j=25;
while (j>2)
{
        System.out.print(j + "  ");
        j/=2;
}
```

a. 25 12 6 3
b. 25 13 7 4 2
c. 25 12 6 3 1
d. 12 6 3 1
e. 12 6 3

Points: 1 / 1

E 27. What is the output of the following program segment?

```
int j;
j=1;
while (j<=10)
        j++;
        System.out.print(j);
```

a. 12345678910

b. 1 2 3 4 5 6 7 8 9 10

c. 1
2
3
4
5
6
7
8
9
10

d. 10

e. 11

Points: 1 / 1

B 28. Complex programs can be broken up into manageable pieces, using _____.

a. black boxes
b. subroutines
c. sledge hammers
d. power saws

Points: 1 / 1

B 29. The part of a method that we interact with as programmers or users is called the _____.

a. remote
b. interface
c. implementation
d. code

Points: 1 / 1

A 30. The syntactic and semantic specifications of the subroutine.

a. contract
b. statement
c. code
d. GUI

Points: 1 / 1

B 31. A subroutine definition in Java takes the form:

a.
```
modifiers return-type subroutine-name( ) {
                parameter-list
}
```
b.
```
modifiers return-type subroutine-name( parameter-list ) {
                statements
}
```
c.
```
modifiers parameter-list subroutine-name( return-type ) {
                statements
}
```
d.
```
subroutine-name modifiers return-type( parameter-list ) {
                statements
}
```

Points: 1 / 1

B 32. The statements between the braces, { and }, in a subroutine definition make up the _____ of the subroutine.

a. head
b. body
c. feet
d. tail

Points: 1 / 1

A 33. Which of the following method headings uses proper parameter declarations?

a. `public static void guess(double rate, double hours, int deductions)`
b. `public static void guess(double rate, hours, int deductions)`
c. `public static void guess(rate, hours, deductions)`
d. `public static void guess(7.85, 42.5, 3)`

Points: 1 / 1

D 34. Which of the following method calls might use parameters correctly?

a. `guess(double rate, double hours, int deductions);`
b. `guess(double rate, hours, int deductions);`
c. `guess(int rate, hours, deductions);`
d. `guess(7.85, 42.5, 3);`

Points: 1 / 1

A 35. This modifier indicates that the method can be called from anywhere in a program, even from outside the class where the method is defined.

a. public
b. private
c. protected
d. static

Points: 1 / 1

A 36. A static member variable belongs to the class as a whole, and it _____.

a. exists as long as the class exists
b. exists only while the subroutine is being executed
c. must be assigned a value before you can do anything with it
d. is completely inaccessible from outside the subroutine

Points: 1 / 1

B 37. A static member variable that is declared to be final, is often referred to as a _____, since its value remains constant for the whole time the program is running.

a. default
b. named constant
c. enumerations
d. useless variables

Points: 1 / 1

C 38. What distinguishes the declaration of a void method?

a. The **public** keyword in the method heading
b. The **static** keyword in the method heading
c. The **void** keyword in the method heading
d. The **main** keyword in the method heading

Points: 1 / 1

C 39. What is the output of the following program?

```
public class Q33
{
     public static void main(String args [ ])         {
        int x = 25;
        int y = 10;
        Calc.add(x,y);
        Calc.sub(x,y);
        Calc.mul(x,y);
        Calc.div(x,y);
    }
}

class Calc
{
    public static void add(int p, int q)        {
        int result = p - q;
        System.out.println(p + " - " + q + " = " + result);
    }
    public static void sub(int p, int q)        {
        int result = p + q;
        System.out.println(p + " + " + q + " = " + result);
    }
    public static void mul(int p, int q)        {
        int result = p / q;
        System.out.println(p + " / " + q + " = " + result);
    }
    public static void div(int p, int q)        {
        int result = p * q;
        System.out.println(p + " * " + q + " = " + result);
    }
}
```

a.
```
25 + 10 = 35
25 - 10 = 15
25 * 10 = 250
25 / 10 = 2
```
b.
```
25 + 10 = 15
25 - 10 = 35
25 * 10 = 2
25 / 10 = 250
```
c.
```
25 - 10 = 15
25 + 10 = 35
25 / 10 = 2
25 * 10 = 250
```
d. 1
2
3
4

e. Error message

Points: 1 / 1

E 40. List the ways a return method can be called.

a. In an assignment statement
b. In an output print statement
c. In a conditional statement
d. In general in any statement that uses the value of the return method.
e. All of the above.

Points: 1 / 1

D 41. A class method is called by

a. using the method identifier only.
b. using the class identifier only.
c. using an object identifier, followed by a period and the method identifier.
d. using the class identifier, followed by a period and the method identifier.

Points: 1 / 1

B 42. The Java keyword **new** is used to create _____.

a. classes
b. objects
c. classes and objects
d. neither classes nor objects

Points: 1 / 1

B 43. The methods in the **Math** class are

a. object methods.
b. class methods.
c. expression methods.
d. variable methods.

Points: 1 / 1

A 44. The methods in the **Random** class are

a. object methods.
b. class methods.
c. expression methods.
d. variable methods.

Points: 1 / 1

A 45. The **Random** class is found inside the _____ package.

a. **java.util**

b. **java.util.Random**

c. **util.java**

d. All of the above

Points: 1 / 1

D 46. Assume that **rand** is an object of the **Random** class.
Which of the following statements generates a random number in the **[200..600]** range?

a. **int number = rand.nextInt(200) + 600;**

b. **int number = rand.nextInt(600) + 200;**

c. **int number = rand.nextInt(400) + 200;**

d. **int number = rand.nextInt(401) + 200;**

Points: 1 / 1

A 47. Assume that **rand** is an object of the **Random** class.
Which of the following statements generates a random number in the **[-101..-41]** range?

a. **int number = rand.nextInt(61) - 101;**

b. **int number = rand.nextInt(61) - 41;**

c. **int number = rand.nextInt(-41) - 101;**

d. **int number = rand.nextInt(-101) - 41;**

Points: 1 / 1

D 48. Which of these values can be assigned to a boolean.
a. no
b. 16
c. maybe
d. false

Points: 1 / 1

A 49. In programming, what is a cast?
a. A cast is an explicit type conversion.
b. An an old social system in India
c. A group of people working together to create a dramatic work.
d. A set of characters enclosed by double quotes.

Points: 1 / 1

D 50. By default, what is the type of the literal 3.14?
a. char
b. int
c. float
d. double

Points: 1 / 1

D 51. Java has _____ binary integer arithmetic operations.
a. two
b. three
c. four
d. five

Points: 1 / 1

A 52. What value is stored by the statement **int number = 100 % 3;** ?

a. 1
b. 3
c. 33
d. 33.3333335
e. 103

Points: 1 / 1

A 53. The statement **num += 10** is the same as the statement

a. **num = num + 10;**
b. **num = 10**
c. **num + 10 = num;**
d. A and C

Points: 1 / 1

A 54. What is the output of the program segment below?

```
int num1 = 500;
int num2 = 200;
int num3 = 300;
double average = num1 + num2 + num3 / 3;
System.out.println(average);
```

a. 800.0
b. 333.0
c. 333.333333333333335
d. Error message

Points: 1 / 1

A 55. What value is stored by the statement **int number = 200 % 3;** ?

a. 2
b. 3
c. 66
d. 66.6666666
e. 203

Points: 1 / 1

C 56. What value is stored by the statement **int number = 200 / 3;** ?

a. 2
b. 3
c. 66
d. 66.6666666
e. 203

Points: 1 / 1

A 57. The action subroutines in a Java class are called

a. methods.
b. procedures.
c. functions.
d. subroutines.

Points: 1 / 1

C 58. Which of the following complete program statements uses **sqrt** correctly?

a. **Math.sqrt();**
b. **result = Math.sqrt;**
c. **System.out.println(Math.sqrt(16));**
d. Both B and C

Points: 1 / 1

D 59. What is the value of **result** in the following statement?

int result = (int) Math.pow(5,2);

a. 2
b. 5
c. 10
d. 25
e. 52

Points: 1 / 1

C 60. What is the value of **result** in the following statement?

double result = Math.floor(9.999999);

a. 10.0
b. 9.99999
c. 9.0
d. Error message

Points: 1 / 1

A 61. What is the value of **result** in the following statement?

int result = (int) Math.ceil(9.000001);

a. 10
b. 9.000001
c. 9
d. Error message

Points: 1 / 1

C 62. What is the value of **result** in the following statement?

double result = Math.round(9.499999);

a. 10
b. 9.499999
c. 9.0
d. Error message

Points: 1 / 1

A 63. *Object Oriented Programming* is categorized by the use of

a. classes and objects.
b. the **goto** statement.
c. modules to combine program statements used for a common purpose.
d. GUI interfaces.

Points: 1 / 1

C 64. An object is_____.

a. a constant
b. a data type
c. a variable
d. another name for an object

Points: 1 / 1

B 65. An object is a

a. data structure template or blue print.
b. single instance of a given data structure template
c. collection of primitive data types.
d. user-defined data type

Points: 1 / 1

B 66. An object is a

a. data structure template or blue print.
b. single instance of a given data structure template
c. collection of primitive data types.
d. user-defined data type

Points: 1 / 1

D 67. A class method is called by

a. using the method identifier only.
b. using the class identifier only.
c. using an object identifier, followed by a period and the method identifier.
d. using the class identifier, followed by a period and the method identifier.

Points: 1 / 1

B 68. The Java keyword **new** is used with

a. classes only.
b. objects only.
c. classes and objects.
d. neither classes nor objects.

Points: 1 / 1

D 69. Consider the two segments below. Do both segments properly construct a **tom** object?

```
// segment 1                          // segment 2
Bank tom;                             Bank tom = new Bank(7500.0, 5000.0);
tom = new Bank(7500.0, 5000.0);
```

a. Segment 1 is correct and segment 2 is not correct.

b. Segment 1 is incorrect and segment 2 is correct.

c. Both segments are incorrect.

d. Both segments are correct.

Points: 1 / 1

A 70. Suppose a *Scanner* object, kb*Reader*, has already been created. Which line of code uses kbR*eader* to input a number with "decimal places" from the keyboard and store the result in the variable, *fract*.

a. double fract = kbReader.nextDouble();
b. double fract = kbReader.next( );
c. double fract = kbReader.nextInt( );
d. double fract = kbReader.nextDbl( );
e. None of these

Points: 1 / 1

MATCHING

Is this one of the eight basic (primitive) Java data types?
a. yes, it is a basic data type
b. no, it is not a basic data type

A 71. int

Points: 1 / 1

A 72. short

Points: 1 / 1

B 73. void

Points: 1 / 1

B 74. literal

Points: 1 / 1

What kind of operator is this?
a. Boolean Operator
b. Relational Operator
c. Arithmetic Operator
d. Assignment Operator
e. Conditional Operator

A 75. !

Points: 1 / 1

B 76. !=

Points: 1 / 1

E 77. ? :

Points: 1 / 1

Match the escape sequence code with the correct meaning.
a. \b
b. \f
c. \n
d. \”
e. \t

C 78. newline

Points: 1 / 1

E 79. horizontal tab

Points: 1 / 1

Match the escape sequence code with the correct meaning.

a. \xN
b. \N
c. \u
d. \\
e. \’

 D 80. Backslash

Points: 1 / 1