**A+ Computer Science**

**Math & Calculations M/C TEST**

**Directions ::** On your answer sheet, mark the letter of the best answer to each question.

1. **What is output by the code below?**

System.out.println( Math.sqrt(81) );

|  |  |
| --- | --- |
| a. | 6.0 |
| b. | 7.0 |
| c. | 8.0 |
| d. | 9.0 |
| e. | 27.0 |

2. **What is output by the code below?**

System.out.println( Math.floor(6.7) );

|  |  |
| --- | --- |
| a. | 6.0 |
| b. | 7.0 |
| c. | 8.0 |
| d. | 9.0 |
| e. | 27.0 |

3. **What is output by the code below?**

System.out.println( Math.ceil(6.7) );

|  |  |
| --- | --- |
| a. | 6.0 |
| b. | 7.0 |
| c. | 8.0 |
| d. | 9.0 |
| e. | 27.0 |

4. **What is output by the code below?**

System.out.println( Math.pow(3,3) );

|  |  |
| --- | --- |
| a. | 6.0 |
| b. | 7.0 |
| c. | 8.0 |
| d. | 9.0 |
| e. | 27.0 |

5. **What is output by the code below?**

System.out.println( Math.round(8.6) );

|  |  |
| --- | --- |
| a. | 9.0 |
| b. | 8.0 |
| c. | 8 |
| d. | 9 |
| e. | 27.0 |

6. **What is output by the code below?**

int x = 9,

y = 8;

int z = x + y;

double a = z;

System.out.print(a);

|  |  |
| --- | --- |
| a. | 8 |
| b. | 9 |
| c. | 17 |
| d. | 17.0 |
| e. | 27.0 |

7. **What is output by the code below?**

System.out.printf(“%.3f“,9.3213);

|  |  |
| --- | --- |
| a. | 9.3213 |
| b. | 9.321 |
| c. | 9.32 |
| d. | 9.3 |
| e. | 27 |

8. **What is output by the code below?**

System.out.println( Math.pow( Math.sqrt(81),2) );

|  |  |
| --- | --- |
| a. | 9.0 |
| b. | 18.0 |
| c. | 81.0 |
| d. | 91.0 |
| e. | 27 |

9. **What is output by the code below?**

System.out.println( Math.round(5 / 2) );

|  |  |
| --- | --- |
| a. | 2 |
| b. | 3 |
| c. | 3.0 |
| d. | 2.0 |
| e. | 27 |

10. **What is output by the code below?**

System.out.println( Math.round(5.0 /2) );

|  |  |
| --- | --- |
| a. | 2 |
| b. | 3 |
| c. | 3.0 |
| d. | 2.0 |
| e. | 27 |

11. **What is output by the code below?**

System.out.println( 7 / 0);

|  |  |
| --- | --- |
| a. | 0 |
| b. | 7 |
| c. | 0.7 |
| d. | 27 |
| e. | There is no output due to a runtime error. |

12. **What is output by the code below?**

System.out.println( Math.pow( Math.sqrt(16),2) );

|  |  |
| --- | --- |
| a. | 9.0 |
| b. | 16.0 |
| c. | 32.0 |
| d. | 64.0 |
| e. | 27 |

13. **What is output by the code below?**

char x = ‘A’;

System.out.print(x + 3);

|  |  |
| --- | --- |
| a. | C |
| b. | D |
| c. | 67 |
| d. | 68 |
| e. | 72 |

14. **What is output by the code below?**

double x = 4/3;

System.out.print(x);

|  |  |
| --- | --- |
| a. | 0 |
| b. | 1 |
| c. | 0.0 |
| d. | 1.0 |
| e. | 2 |

15. **What is output by the code below?**

int x = 15;

x = x % 5;

System.out.print(x);

|  |  |
| --- | --- |
| a. | 0 |
| b. | 1 |
| c. | 2 |
| d. | 3 |
| e. | 5 |

16. **What is output by the code below?**

System.out.print(4 % 3);

|  |  |
| --- | --- |
| a. | .5 |
| b. | 1 |
| c. | 2 |
| d. | 0 |
| e. | 3 |

17. **What is output by the code below?**

System.out.print(3 / 4);

|  |  |
| --- | --- |
| a. | .5 |
| b. | 1 |
| c. | 2 |
| d. | 0 |
| e. | 3 |

18. **What is output by the code below?**

System.out.print( (double)2 / 2 );

|  |  |
| --- | --- |
| a. | 1 |
| b. | 1.0 |
| c. | 2 |
| d. | 0 |
| e. | 3 |

19. **What is output by the code below?**

System.out.print( (double)1 / 2 );

|  |  |
| --- | --- |
| a. | 0.5 |
| b. | 1 |
| c. | 2 |
| d. | 0 |
| e. | 3 |

20. **What is output by the code below?**

System.out.print(12.7 % 3);

|  |  |
| --- | --- |
| a. | .7 |
| b. | .3 |
| c. | 3 |
| d. | 0 |
| e. | 12 |

21. **What is output by the code below?**

System.out.print( (int)9.6 );

|  |  |
| --- | --- |
| a. | 10 |
| b. | 6 |
| c. | 9.0 |
| d. | 9.6 |
| e. | 9 |

22. **How many instance variables are there in class It?**

public class It

{

private int myX;

public It()

{

myX = 99;

}

public String toString()

{

return "" + myX;

}

}

|  |  |
| --- | --- |
| a. | 0 |
| b. | 1 |
| c. | 2 |
| d. | 3 |
| e. | 4 |

23. **How many methods are there in class It?**

public class It

{

private int myX;

public It()

{

myX = 99;

}

public int getX()

{

return myX;

}

public String toString()

{

return "" + getX();

}

}

|  |  |
| --- | --- |
| a. | 0 |
| b. | 1 |
| c. | 2 |
| d. | 3 |
| e. | 4 |

24. **How many constructors are there in class It?**

public class It

{

private int myX;

public It()

{

myX = 99;

}

public int getX()

{

return myX;

}

public String toString()

{

return "" + getX();

}

}

|  |  |
| --- | --- |
| a. | 0 |
| b. | 1 |
| c. | 2 |
| d. | 3 |
| e. | 4 |

25. **How many accessor methods are there in class It?**

public class It

{

private int myX;

public It()

{

myX = 99;

}

public int getX()

{

return myX;

}

public String toString()

{

return "" + getX();

}

}

|  |  |
| --- | --- |
| a. | 0 |
| b. | 1 |
| c. | 2 |
| d. | 3 |
| e. | 4 |

26. **What is output by the code below?**

public class Check

{

private int fun;

public void change()

{

int fun = 99;

}

public String toString()

{

return "" + fun;

}

}

//client code

Check test = new Check();

test.change();

out.println(test);

|  |  |
| --- | --- |
| a. | 0 |
| b. | 100 |
| c. | 99 |
| d. | 101 |
| e. | There is no output due to a syntax error. |

27. **What is output by the code below?**

public class Check

{

private int fun;

public void change()

{

fun = 100;

int fun = 99;

}

public String toString()

{

return "" + fun;

}

}

//client code

Check test = new Check();

test.change();

out.println(test);

|  |  |
| --- | --- |
| a. | 0 |
| b. | 100 |
| c. | 99 |
| d. | 101 |
| e. | There is no output due to a syntax error. |

28. **What is output by the code below?**

public class Check

{

private int one, two, total;

public void setNums(int n1, int n2)

{

one = n1;

two = n2;

}

public void add()

{

total = one + two;

}

public String toString()

{

return "" + total;

}

}

//code in the main of another class

Check test = new Check();

test.setNums(9,7);

test.add();

out.println(test);

|  |  |
| --- | --- |
| a. | 0 |
| b. | 12 |
| c. | 14 |
| d. | 16 |
| e. | 2 |

29. **What is output by the code below?**

public class Check

{

private int one, two, total;

public void setNums(int n1, int n2)

{

one = n1;

two = n2;

}

public void add()

{

total = one + two;

two = 9;

}

public String toString()

{

total = 2;

return "" + total;

}

}

//code in the main of another class

Check test = new Check();

test.setNums(9,7);

test.add();

out.println(test);

|  |  |
| --- | --- |
| a. | 18 |
| b. | 12 |
| c. | 14 |
| d. | 16 |
| e. | 2 |

30. **What is output by the code below?**

public class Check

{

private int one, two, total;

public void setNums(int n1, int n2)

{

one = n1;

two = n2;

}

public void add()

{

one = 5;

total = one + two;

two = 5;

}

public String toString()

{

return "" + total;

}

}

//code in the main of another class

Check test = new Check();

test.setNums(9,7);

test.add();

out.println(test);

|  |  |
| --- | --- |
| a. | 10 |
| b. | 12 |
| c. | 14 |
| d. | 16 |
| e. | 2 |

31. **What is output by the code below?**

System.out.print(3.0 / 6 + 3 \* 3.5);

|  |  |
| --- | --- |
| a. | 11.0 |
| b. | 10.5 |
| c. | .18 |
| d. | 12.25 |
| e. | 1.17 |

32. **What is output by the code below?**

int x = 4;

x \*= 11 % 3;

System.out.println( x );

|  |  |
| --- | --- |
| a. | 11 |
| b. | 2 |
| c. | 8 |
| d. | 3 |
| e. | 4 |

33. **What is output by the code below?**

System.out.println( Math.floor(6.7) );

|  |  |
| --- | --- |
| a. | 6.0 |
| b. | 7.0 |
| c. | 8.0 |
| d. | 9.0 |
| e. | 27.0 |

34. **What is output by the code below?**

System.out.println( Math.floor(-6.7) );

|  |  |
| --- | --- |
| a. | -6.0 |
| b. | -7.0 |
| c. | -8.0 |
| d. | -9.0 |
| e. | -27.0 |

35. **What is output by the code below?**

System.out.println( Math.cbrt(64) );

|  |  |
| --- | --- |
| a. | 8 |
| b. | 4 |
| c. | 8.0 |
| d. | 4.0 |
| e. | 16.0 |

36. **The char data type is what?**

|  |  |
| --- | --- |
| a. | 8 bits signed |
| b. | 8 bits unsigned |
| c. | 16 bits signed |
| d. | 16 bits unsigned |
| e. | 32 bits signed |

37. **Which of the following are 64 bits?**

I. int

II. long

III. float

IV. double

|  |  |
| --- | --- |
| a. | I and II only |
| b. | I and III only |
| c. | II and III only |
| d. | II and IV only |
| e. | II, III, and IV only |

38. **What is output by the code below?**

System.out.println( Math.ceil(-6.7) );

|  |  |
| --- | --- |
| a. | -6.0 |
| b. | -7.0 |
| c. | -8.0 |
| d. | -9.0 |
| e. | -27.0 |

39. **What is output by the code below?**

System.out.println( Math.max(Math.min(16,18),17) );

|  |  |
| --- | --- |
| a. | 0 |
| b. | 16 |
| c. | 17 |
| d. | 18 |
| e. | 19 |

40. **What is output by the code below?**

System.out.println( Math.min(Math.min(16,18),17) );

|  |  |
| --- | --- |
| a. | 0 |
| b. | 16 |
| c. | 17 |
| d. | 18 |
| e. | 19 |