



ALGONQUIN
COLLEGE

CST8110 320
MIDTERM REVIEW

Howard Rosenblum

Question 1

CPU is short for?

- a) **Central Processing Unit**
- b) Central Programming Unit
- c) Computer Programming Unit
- d) Computer Processing Unit

98.9% got it right



Question 2

Which of the following data type uses the least bits in memory?

- a) int
- b) **boolean**
- c) double
- d) float
- e) all of the above

75% got it right



Question 3

Java is a:

- a) A compiled language
- b) An interpreted language
- c) **Both a compiled and interpreted language**
- d) Neither a compiled nor interpreted language

78.5% got it right



Question 4

What value is in memory for the variables num1 and num2 after the following executes?

```
int num1 = 4;
```

```
int num2 = 3;
```

```
num2 += 2 * num1++;
```

- a) num1 is 4 and num2 is 3
- b) num1 is 5 and num2 is 13
- c) none of the above
- d) num1 is 5 and num2 is 11
- e) num1 is 4 and num2 is 8



Question 4

What value is in memory for the variables num1 and num2 after the following executes?

```
int num1 = 4;
```

```
int num2 = 3;
```

```
num2 += 2 * num1++;
```

d) num1 is 5 and num2 is 11

58.2% got it right



Question 5

Select all of the following statements that are **true**:

- I. Class name must be **exactly** the same as the java file name (other than the .java extension)
 - II. Object name must **not** be the same as the class name (even if it is a different case)
 - III. Default constructor must **not** have any parameters
 - IV. There can **only** be one constructor per class
 - V. A class can have two or more methods with the same name
- a) All of the above b) **i, iii and v** c) i, ii, iii, and v
d) i, iii, iv and v e) ii and iv

55.9% got it right



Question 6

What would display from the following?

```
int num = 6;
while(num > 2)
{
    System.out.print( " Num is "+ num);
    num =num-2;
}
```

- a) **Num is 6 Num is 4**
- b) Num is 6 Num is 4 Num is 2
- c) Num is 6 Num is 5 Num is 4
- d) Num is 6 Num is 5 Num is 4 Num is 3
- e) Num is 6 Num is 5 Num is 4 Num is 3 Num is 2

72% got it right



Question 7

What would display from the following?

```
int mark=50;
if(mark < 50)
    mark = mark + 20;
else if (mark > 60)
    mark = mark * 3;
else
    mark = mark * 4;

System.out.println("The result is "+mark);
```

- a) The result is 50
- b) The result is 70
- c) The result is 150
- d) **The result is 200**
- e) The result is 210

76.3% got it right



Question 8

To compile a Java source code file Greeting.java, which command should be used at a Command Prompt?

- a) java Greeting
- b) **javac Greeting.java**
- c) Greeting.java
- d) Greeting

88.2% got it right



Question 9

When we successfully compile a file named MyProg.java, the file that is produced will be named:

- a) myProg.exe
- b) myProg.class
- c) **MyProg.class**
- d) MyProg
- e) none of the above

54.8% got it right



Question 10

Select all datatypes that are **NOT** considered primitives in Java?

- i) int
 - ii) float
 - iii) **String**
 - iv) **Date**
 - v) char
- a) **iii and iv**
 - b) i, ii and v
 - c) all of the above
 - d) iv and v
 - e) i and v

76.1% got it right



Question 11

What is the output from the following code?

```
int x=3;
```

```
int y=4;
```

```
int z=2;
```

```
int result = x +(y+z*x);
```

```
System.out.print(result);
```

a) 0 b) **13** c) 21 d) 27 e) none of the previous

89.2% got it right



Question 12

What will display (exactly) from the following segment of code?

```
System.out.println (“My name is\n” + “Howard”);
```

```
System.out.print (“Rosenblum”);
```

```
System.out.print (“Your name is : “ );
```

- a) My name is
Howard
RosenblumYour name is:
- b) My name is Howard
Rosenblum
Your name is:
- c) My name is
Howard
Rosenblum
Your name is:
- d) My name is\nHoward
Rosenblum
Your name is:
- e) My name is
Howard
Rosenblum
Your name is:



Question 12

What will display (exactly) from the following segment of code?

```
System.out.println (“My name is\n“ + “Howard”);
```

```
System.out.print (“Rosenblum”);
```

```
System.out.print (“Your name is : “ );
```

a) **My name is**

Howard

RosenblumYour name is:

82.8% got it right



Question 13

Given a method in a class of `public void doSomething (int x){...}`. What is a valid call statement on object `obj1` of the class in `main`?

- a) `obj1.doSomething ();`
- b) `obj1.doSomething (int x);`
- c) `obj1.doSomething (4, 3);`
- d) `doSomething (obj1);`
- e) **none of the other answers**

35.5% got it right



Question 14

How are the arguments in a method call statement related to the parameter list declared in the method declaration?

- a) there is no relationship
- b) they have to match in number
- c) **they have to match in number and datatype**
- d) they have to match in number, datatype and name

47.8% got it right



Question 15

Which of the statements below will instantiate aComputer object with isLaptop set to true and ram of 4?

- a) `Computer aComputer = new Computer();`
- b) `Computer aComputer = new Computer(true);`
- c) `Computer aComputer = new Computer(true, 4);`
- d) **all of the above**

40.9% got it right



Question 16

What will display if the following two lines of code are used in method main?

```
Computer aComputer = new Computer(false, 8);  
aComputer.display();
```

- a) 4 Gigs RAM, Laptop
- b) 8 Gigs RAM, Laptop
- c) 4 Gigs RAM, Desktop
- d) 8 Gigs RAM, Desktop

92.5% got it right



Question 17

What will display if the following three lines of code are used in method main?

```
Computer anotherComputer = new Computer();  
anotherComputer.setRam(2);  
System.out.print(anotherComputer.getRam() + " ");
```

- a) 2 Gigs RAM, Desktop
- b) 2 Gigs RAM, Laptop
- c) 2
- d) This will not compile
- e) None of the above

61.3% got it right



Question 18

What will display if the following lines of code are used in method main?

```
Computer anotherComp;
```

```
System.out.print(anotherComp.ram + " ");
```

- a) 2 Gigs RAM, Desktop
- b) 2 Gigs RAM, Laptop
- c) 2
- d) **This will not compile**
- e) This will not run

76.1% got it right



Question 19

Given a method in a class of `public int doSomething2 () {...}`. What is the meaning of the **int** in that declaration?

- a) The method will be called on an **int**
- b) **The method will return a value of type int when finished**
- c) All calculations in the method will be performed as **int**
- d) An **int** will be passed as a parameter to the method
- e) None of the other answers

77.4% got it right



Question 20

Which of the following can be used legally AND by convention as a variable name in Java?

I. FirstNum

II. 1stNum

III. num1

IV. first-num

V. first Num

VI. first_Num

a) i, iii, and vi

b) i, and iii

c) iii

d) iii and vi

e) All of the above

36.6% got it right



Question 21

Given the following statements

```
int z = 1;
```

```
int y = 1;
```

```
int x = z + y;
```

Which one of the following statements is **false**?

- a) $z == y$ $\rightarrow 1 == 1$ \rightarrow true
- b) $z < x \parallel x < y$ $\rightarrow 1 < 2 \parallel 2 < 1$ \rightarrow true
- c) $z < x \ \&\& \ y > x$ $\rightarrow 1 < 2 \ \&\& \ 1 > 2$ \rightarrow false
- d) $z >= y \ \&\& \ y <= x$ $\rightarrow 1 >= 1 \ \&\& \ 1 <= 2$ \rightarrow true
- e) $2 * z == x \ \&\& \ x > y$ $\rightarrow 2 == 2 \ \&\& \ 2 > 1$ \rightarrow true

81.7% got it right



Question 22

Which of the following are properties of a constructor?

- i. has the same name as the class
 - ii. has no explicit return value
 - iii. has return value void
 - iv. has no parameters or arguments
 - v. executes when an object is instantiated
- a) i b) i, ii and iv c) iii d) i, ii, and v e) all of the above

61.3% got it right



Question 23

Which of the following statements are true?

- i. Fields can usually be seen inside a class
 - ii. Fields can usually be seen outside a class
 - iii. Methods can usually be seen inside a class
 - iv. Methods can usually be seen outside a class
- a) ii, iii, and iv
 - b) i, iii, and iv
 - c) i, ii, and iv
 - d) i, ii, and iii
 - e) All of the above

65.6% got it right



Question 24

Reference-type variables are initialized by default to the value **null**.

- a) **true** b) false

84.9% got it right



Question 25

The value of `22/5.0` in a Java program is

- a) 4
- b) 4.0
- c) 4.2
- d) 4.4
- e) none of the other answers

82.7% got it right



Question 26

By **convention**, which of the following should start with a capital letter?

- a) **Class name**
- b) Variable name
- c) Method name
- d) Object name
- e) none of the others

83.9% got it right



Question 27

Give the declaration:

```
Scanner in = new Scanner (System.in);  
double num;
```

What segment of code would read in a double value from the user and store it correctly in the variable num?

- a) `System.out.println ("Enter number:");`
`num = in.nextDouble;`
- b) `System.out.println ("Enter number:");`
`num = in.nextInt();`
- c) `System.out.println ("Enter number:");`
`in.nextDouble(num);`
- d) **None of the above**

40.9% got it right



Question 28

The code for an initial constructor for the HealthClubMember class above, that takes 2 ints (for membership id and membership level) and a String for name as parameters is:

- a)

```
public int, int Constructor () {  
    return memberId, membershipLevel;  
}
```
- b)

```
public void HealthClubMember (int memNum, int memLevel, String nm) {  
    memberId = memId;  
    membershipLevel = memLevel;  
    name = nm;  
}
```
- c)

```
public HealthClubMember (int memNum, int memLevel, String nm) {  
    memberId = memId;  
    membershipLevel = memLevel;  
    name = nm;  
}
```
- d)

```
public void Constructor(memNum, int memLevel, String nm) {  
    memberId = memId;  
    membershipLevel = memLevel;  
    name = nm;  
}
```
- e) none of the above



Question 28

The code for an initial constructor for the HealthClubMember class above, that takes 2 ints (for membership id and membership level) and a String for name as parameters is:

- c) `public HealthClubMember (int memNum, int memLevel, String nm) {
 memberId = memId;
 membershipLevel = memLevel;
 name = nm;
}`
- e) none of the above

81.7% got it right



Question 29

Write a method `calcBill` for the `HealthClubMember` class above.

The method should **return** a double value to the user which will have been computed in the method:

- Level 0 members pay \$25 while level 1 members pay \$40
- The first 500 members (i.e. member Id is 500 or less) pay half price



Question 29 (What I was looking for)

```
public double calcBill()  
{  
    double bill;  
    if(membershipLevel==0)  
    {  
        bill=25;  
    } else {  
        bill=40;  
    }  
    if(memberId<=500)  
    {  
        bill=bill/2;  
    }  
    return bill;  
}
```



Question 29 (other answer #1)

```
public double calcBill()  
{  
    double bill=25;  
    if(membershipLevel==1)  
    {  
        bill=40;  
    }  
    if(memberId<=500)  
    {  
        bill /= 2;  
    }  
    return bill;  
}
```



Question 29 (other answer #2)

```
public double calcBill()  
{  
    if(membershipLevel==0)  
    {  
        if(memberId<=500)  
            return 12.5;  
        else  
            return 25;  
    }  
    if(memberId<=500)  
        return 20;  
    else  
        return 40;  
}
```



Question 29 (Key parts) – 4 marks

```
public double calcBill()
```

```
{  
    double bill;  
    if(membershipLevel==0)  
    {  
        bill=25;  
    } else {  
        bill=40;  
    }  
    if(memberId<=500)  
    {  
        bill=bill/2;  
    }  
    return bill;  
}
```

And meets all the cases of a proper test plan



Question 30

Write a test plan to test calcBill method
ONLY in the HealthClubMember class
(from question #29)



Question 30 (answer)

Description	Input	Output
Normal – first 500 level 0	memberId=200, membershipLevel=0	12.5
Normal – after 500 level 0	memberId=600, membershipLevel=0	25
Normal – first 500 level 1	memberId=200, membershipLevel=1	20
Normal – after 500 level 1	memberId=600, membershipLevel=1	40
Boundary – member 500 level 0	memberId=500, membershipLevel=0	12.5
Boundary – member 500 level 0	memberId=500, membershipLevel=1	20



Question 30 (answer) – 4 marks

Description	Input	Output
Normal – first 500 level 0	memberId=200, membershipLevel=0	12.5
Normal – after 500 level 0	memberId=600, membershipLevel=0	25
Normal – first 500 level 1	memberId=200, membershipLevel=1	20
Normal – after 500 level 1	memberId=600, membershipLevel=1	40
Boundary – member 500 level 0	memberId=500, membershipLevel=0	12.5
Boundary – member 500 level 0	memberId=500, membershipLevel=1	20

Any four of the above get you full marks



Question 31

What are the values of “*member*” if the following line appear in the main (assuming question #28 is correct)

```
HealthClubMember member = new  
HealthClubMember (6702, 0, “Howard”);
```

Hint: memory map or similar



Question 31 (correct answer #1)

4 marks

memberId = 6702

membershipLevel = 0

name = "Howard"



Question 31 (correct answer #2)

4 marks

member.memberId = 6702

member.membershipLevel = 0

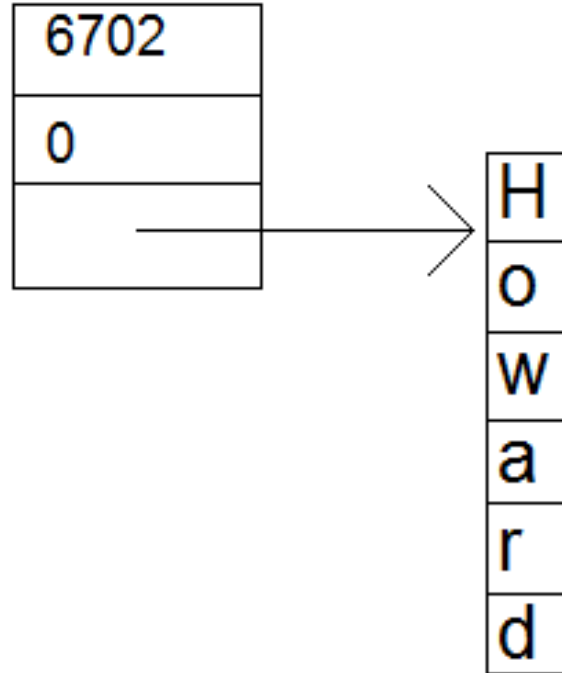
member.name = "Howard"



Question 31 (correct answer #3)

4 marks

memberId
membershipLevel
name



Question 31 (incorrect answer)

0 marks

memNum = 6702

memLevel = 0

nm = "Howard"



Question 32

Write the **set** method for the membershipLevel field



Question 32 (What I was looking for)

2 marks

```
public void setMembershipLevel(int  
    memLevel)  
{  
    membershipLevel = memLevel;  
}
```



Question 32 (also accepted)

2 marks

```
public void setMembershipLevel()
{
    Scanner input = new Scanner(System.in);
    System.out.print("Enter Membership level");
    membershipLevel = input.nextInt();
}
```



Question 32 (Key parts) – 2 marks

```
public void setMembershipLevel(int  
    memLevel)  
{  
    membershipLevel = memLevel;  
}
```



Overall

- 93 students wrote the midterm
- The class average was 69.4%
- The class median was 72.5%

