

JAVA HomeWork 10 – Java Practices

Q1: The Correct Answer is E

`'sb.indexOf("c")'` returns `'-1'` because there is no `'c'` in `'sb'` yet. Inserting String to `StringBuilder`'s index `'-1'` throws `'IndexOutOfBoundsException'`.

Q2: The Correct Answer is C & E

Precedence	Operator	Name
14	--	Unary post-decrement
13	--	Unary pre-decrement
12	/, *, %	Division & Multiplication & Modulus
11	+, -	Unary plus & minus
8	==	Relational is equal to
6	^	Bitwise exclusive OR
1	=	Assignment

Q3: The Correct Answer is B, C & F

A [JavaBean](#) is just a standard

1. All properties private (use getters/setters)
2. A public no-argument constructor
3. Implements `Serializable`.

Q4: The Correct Answer is A & E

`'size()'` is a method for `'arrayList'` its not available with `'arrays'`. In the first for loop both loops using lenght of `'crossworld'` which has lenght of 10. It covers half of whole `'[10] [20] array'`.

Q5: The Correct Answer is B & D

We should never catch Errors, there are some exceptions but exceptions doesnt break the rule. We can catch an error in try catch block but will we able to solve the problem caused it.

Q6: The Correct Answer is A, C & D

In option B `'savana.sand'` package was not imported subpackages are not accessible

In option E only `'Bird'` class was imported from `'forest'` package.

In option F `'bonobo'` is not a package.

Q7: The Correct Answer is C

`ArrayList` mutable but there is an [immutableList](#) class. `StringBuilder` is mutable and the rest is immutable.

Q8: The Correct Answer is C

'delete()' method deletes 5 char starting from index 0 and because the builder has a 'length' bigger than 'delete()' method gets executed again which leaves builder with only 'wing'.

Q9: The Correct Answer is D

Neither 'ceiling' or 'floor' is equal to 'wall' because 'ceiling' is in another place in heap and 'floor' is in string pool.

Q10: The Correct Answer is C

'lol.toUpperCase()' does not equal to 'lol.toUpperCase()' because 'toUpperCase()' method returns 'new String' object each time with 'return new String(result, 0, len + resultOffset);' code.[\[10\]](#)

Q11: The Correct Answer is A, B & C

Outer 'do while' does not affect the result in original code once the inner 'do while' finished outer one doesn't meet the condition to do it again already an 'label' can be deleted since they are not referenced anywhere in code.

Q12: The Correct Answer is B & C

'1234.0' is a double assigning it to a long causes error: incompatible types: possible lossy conversion from double to long and a double can't have 'L' or 'l' suffix for same reason.

If your code contains numbers with many digits, you can use an underscore character to separate digits in groups of three, similar to how you would use a punctuation mark like a comma, or a space, as a separator.

Q13: The Correct Answer is A

'getHour' method 'returns 1' in this case and it doesn't print anything.

Q14: The Correct Answer is D sor

The code compiles but throws a 'NullPointerException' at runtime because the array is 'null'.

Q15: The Correct Answer is C & E

On left side if there is diamond operator it has to declare the type and 'ArrayList' without diamond operator is considered 'rawtype' and that's a warning.

Q16: The Correct Answer is B & D

'sandal' is eligible for garbage collection but no item **guaranteed** to be garbage collected.

Q17: The Correct Answer is C

First line that prevents compiling `f.getFish();` because `Fish` class throws an exception which may contain checked exceptions has to be caught or declared.

After we catch it(`BubbleException`) in a try catch block the code compiles and prints a stack trace and `clown!`.

Q18: The Correct Answer is A

`'test'` method returns `'true'` `'if (num < 0)'`. Which is only true for `'-5'` and it gets printed out.

Q19: The Correct Answer is B

For try block there has to be one catch block but there is no necessity for finally.

Q20: The Correct Answer is A

`'break loop;'` doesn't affect the code like this but when it's inside `'do-while'` loop it breaks both loops at the same time.

Q21: The Correct Answer is C

In the `snap` method the `'teeth'` that has decreased is not the same with main class's attribute `'teeth'`, it's the parameter `teeth`. The Scope of Variables.

Q22: The Correct Answer is A

String is immutable `concat` method cannot change old string it returns a new one.

Q23: The Correct Answer is A, C & F

The interface body can contain abstract methods, default methods, and static methods. All abstract, default, and static methods in an interface are implicitly public, so you can omit the public modifier.

Q24: The Correct Answer is D

One `'='` was missing

Q25: The Correct Answer is B & F

Every Class extends `Object` class implicitly so that they provide basic features which according to Java recommendation every class should have. Such as `clone()`, `equals()`, `hashCode()`, `toString()`, etc. It also imports `java.lang.*` package because `Object` class is in it.

Q26: The Correct Answer is D

The Class inherits unrelated defaults for `grow()` from types `Plant` and `Living`. If two interfaces contain a method with the same signature but different return types, then it is impossible to implement both the interface simultaneously. According to `JLS (§8.4.2)` methods with same signature is not allowed in this case.

Q27: The Correct Answer is D

Error : The local variable `profit$$$` might not have been initialized.

Q28: The Correct Answer is A

These operators pre and post decrement or increment operators. Post operator returns unchanged value to wherever you use it and changes value. Pre operator changes the value before returning it.

Q29: The Correct Answer is B, C & E

B, Super doesn't have no parameter constructor.
C, Either this or super should be first statement can't have them both.
D, There are no String, double constructor in "this".

Q30: The Correct Answer is E & F

Default values for static variables: For numbers, the default value is 0; for Booleans, it is false; and for object references, it is null.

Q31: The Correct Answer is B & E

`'|'` is a bitwise or operator, `'A = 1001'` and `'B = 0110'`. `'A | B'` returns `'1111'`. `'||'` is a logical or operator. They are not the same. Either true or false side of ternary expression will be evaluated at runtime. switch can only have one default case defined. An if statement can only have one else statement. `'!'` operator can only be applied to boolean values.

Q32: The Correct Answer is C

The substring begins at the specified start and extends to the character at index end - 1 or to the end of the sequence if no such character exists. If start is equal to end, no changes are made.

Q33: The Correct Answer is A & D

Every unicode character is allowed in method names except those that mean something to JVM like `%`, `@`, `=` etc.

Q34: The Correct Answer is A & C

Inheritance better than using static methods because that way we can control which classes can reach the methods. If we make it static all classes in same package can access the methods.

Q35: The Correct Answer is E

Functional programming has been possible in Java since the introduction of anonymous inner classes. However, anonymous inner classes require so much boiler plate code that the only example of functional programming in Java 7 is the `Arrays.sort` function. The introduction of lambdas will make the Java language a lot more expressive. But still, the Java language falls short of becoming a functional language. It's almost possible to program Java 8 in a functional way. But there are enough rough edges making it difficult to do so. It bet Java will largely remain a procedural language. [\[35\]](#)

Q36: The Correct Answer is C

length attribute of arrays returns total number of items in array. First dimension of listing has 3 and Second dimensions has 2 items.

Q37: The Correct Answer is A, B & E

A switch works with the byte, short, char, and int primitive data types. It also works with enumerated types (discussed in Enum Types), the String class, and a few special classes that wrap certain primitive types: Character, Byte, Short, and Integer (discussed in Numbers and Strings).[\[37\]](#)

Q38: The Correct Answer is D

Predicate arrow was wrong at '`k2`' there is '`=>`' instead of '`->`'

Q39: The Correct Answer is B, C & E

Valid comments in java `/* Nothing here matters to compiler even this -> /**** or this -> // */` and `//`.

Q41: The Correct Answer is D

`'Arrays.asList'`: Returns a **fixed-size** list backed by the specified array. You can't add to it; you can't remove from it. You can't structurally modify the List.

Q42: The Correct Answer is A & D

Underscore used for separating numbers and allowed in variable names.

Q43: The Correct Answer is B

We can change args from main class in the body. its only needed for JVM to find entry point of code. Because args are integers they are getting sorted alphabetically.

Q44: The Correct Answer is D

`'public'` for accessibility and `'static'` for availability without creating instance.

Q45: The Correct Answer is A

The `'System.out.println();'` code is out of for loop so its only gets executed once. Every output in for loops printed in one line.

Q46: The Correct Answer is C & D

.java file is basically a text file and javac command turns it into bytecode which is .class file.

Q47: The Correct Answer is C

`'short value = (short) 100000000;'` makes value `'-7936'` because int is a higher value type and short is **mod 2^{16} of int**. If we directly assign it to a short variable the code doesn't compile because of lossy conversion.

short, int and char are primitive types while Character, Short and Integer are wrapper classes that allows us to use primitive concept in OOP-kind of way. Because of this int to Character or Short are not compatible and does not compile.

Q48: The Correct Answer is B, D & F

Byte → Short → Int → Long → Float → Double

Widening or Automatic Conversion

Java automatically widens until it finds compatible type in method arguments.

Q49: The Correct Answer is A

Main method was not declared as static.

Q50: The Correct Answer is D

Inside the try block `'beats[2]'` causes an `'ArrayIndexOutOfBoundsException'` and it gets caught by its superclass `'RuntimeException'` catch block first after that finally block gets executed and "5".

Q51: The Correct Answer is E

Normally this would be an infinite loop but we printing out array values which has 2 items and at the second turn of array we get a stack trace for `'ArrayIndexOutOfBoundsException'` and before that `'cup, '`

Q52: The Correct Answer is A, E & F

Entry point of a java program is public, static, void and takes array of string.

Q53: The Correct Answer is C, D & E

`'switch(season)'` -> `'season'` is a `'byte'` here which limits input type.

Q54: The Correct Answer is A, B & C

While overriding a method you can narrow the publicity and can't broaden the data types in use.

Q55: The Correct Answer is B, E & F

RuntimeExceptions are unchecked exceptions and these answers are RuntimeException's subclasses.

Q56: The Correct Answer is F

There are no elif statements there. There are 2 different if statements and one else for second if.

Q57: The Correct Answer is B, C & D

'clock' variable needs to be available outside the class. Option A and F fails that requirement.

Q58: The Correct Answer is B

Class 'CarbonStructure' needs to be 'abstract' to declare 'abstract methods'. Either we make class 'abstract' or add a 'body' to method and delete 'abstract' token.

Q59: The Correct Answer is C

The constructor 'LocalDate(int, int, int)' is not visible(fixed LocalDate.now();) and 'DateTimeFormat' cannot be resolved to a type its 'DateTimeFormatter'

Q60: The Correct Answer is A & E

'try' block can have 0 or more 'catch' blocks but not 'finally' blocks, can have zero 'catch' block and one 'finally' block.

Q61: The Correct Answer is B

Ternary operator '?' '(Condition) ? true : false;'

Q62: The Correct Answer is A, C & E

An object can be cast to superclass without explicit cast A class inherits B class and some method takes B class we can pass it an A class object and it gets explicitly casted into B class.

Q63: The Correct Answer is F

Binary Search: Search a **SORTED** array by repeatedly dividing the search interval in half. Begin with an interval covering the whole array. If the value of the search key is less than the item in the middle of the interval, narrow the interval to the lower half. Otherwise narrow it to the upper half. Repeatedly check until the value is found or the interval is empty.

Our array was not sorted.

Q64: The Correct Answer is C

'shoe3' and 'flipflop' are eligible for garbage collection 'shoe3' is not needed after method completes execution.

Q65: The Correct Answer is E

```
'public int aaa() throws Exception { try {return 1;} finally{ throw new  
Exception();}}'
```

Q66: The Correct Answer is B & E

'ArrayIndexOutOfBoundsException' 'times' array doesn't have same length with 'nycTourLoops'.

Q67: The Correct Answer is E

In object-oriented programming, a virtual function or '**virtual method**' is a function or method whose '**behaviour can be overridden**' within an inheriting class by a function with the same signature '**to provide the polymorphic behavior**'.

Q68: The Correct Answer is E

'names[1] = "Fall"' which has length of 4 and at the other line 'names[4]' is OutOfBounds.

Q69: The Correct Answer is D

Class should have public 'Q69(int beats)' constructor to feed 'super(int)' constructor. 'play()' method doesn't take arguments. 'MakesNoise' interface doesn't have method 'concert()';

Q70: The Correct Answer is B

sort

Q71: The Correct Answer is D

'catch exception's variable name conflicts, already handled exception and in main method try catch block needed.

Q72: The Correct Answer is D

Protecting is encapsulation structuring class with related attributes and actions is OOP.

Q73: The Correct Answer is E

'string' replaced with 'String' for both lines for code to compile.

Q74: The Correct Answer is A

This time array was sorted before doing binarySearch.

Q75: aa

Q76: The Correct Answer is E

'of, getHour and plusHours' methods are not available for 'LocalDate' class.

Q77: ?

sort

Q78: The Correct Answer is B

This one prints 1 because 'count++' was outside of the while loop.

Q79: The Correct Answer is D

'int grunt' method inside public class which extends bear should be protected as well cant override with broader access modifier. Left hand side of assignment should be a variable. Cant invoke abstract method.

Q80: The Correct Answer is B, D & E

```
'switch (a) {case 1....n: {break;} default:{break;}}'  
'default void test() {System.out.println("Test");}'
```