# CS3391 OBJECT ORIENTED PROGRAMMING

## Question Bank

## UNIT III EXCEPTION HANDLING AND I/O

## PART- A

1. What are the steps necessary to get the reliable systems?
   - Error should be notified to the user.
   - All works should be saved.
   - Users should be able to gracefully exit the program.

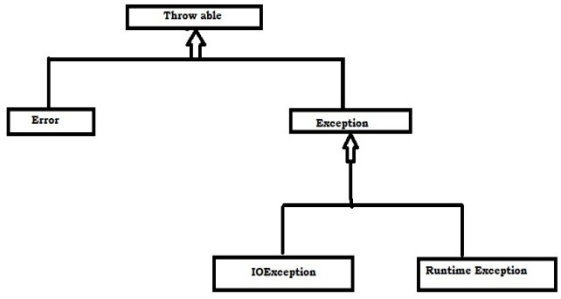
2. What are the device errors?

Hardware of a system always does not work properly. In some situations it may get trouble. For example our system is trying to print a page using a printer which disconnected from the computer.

3. What is function of default handler?

Any exception that is not caught and handled by any handler provided by the programmer is caught by the default handler provided by the java run-time system. The default handler displays the description of the exception.

4. Draw the exception hierarchy.




5. What is the exception handling?

The process of catching and handling the exceptions that are occurred at the run-time of a program as Exception handling.

6. What are the functions of try and catch block?
   - The program statements that are to be monitored are given inside the try block.
   - Catch block catches the exception thrown by the try block.

7. What is final blocks?

Any program code that absolutely must be executed before a method returns in written in a finally block. This block is used to handle an exception that is not caught by any catch statements. It can be defined immediately after try or catch statements. Inside statement's execution is compulsory. even no error is thrown by the try block.

8. What is the use of throw statement?

Normally exception are thrown to be catch block by java run-time systems. It is also possible to throw it explicitly by the programmer in the code by using throw statement.

9. How are the exceptions chained?

One exception can be associated with another exception in java. In this, second exception describes the cause of the first exception.

Example

```
try
{
  ….      //code to access the data base
}
 catch (SQL Exception e)
 {
   Throw able se = new Servlet Exception("Data base error");
    se. init Cause(e);
    throw se;
    }
```

10. What is the exception classes created?

throws statement is used to make the methods to guard themselves against the exceptions.
Example : static void Method() throws Illegal Access Exception

11. How is the exception classes created?

Exception classes are created by deriving exception class or its sub types. It is customary to give both default constructor and a constructor that contains a detailed message.

12.What are the stack trace elements?

A stack trace is a list of all remaining method calls at a particular point in the execution of a program. Stack frame is an individual element of a stack trace when an exception occurs.

13. What is error?

An error indicates that non-recoverable condition has occurred that should not be caught. Error, a subclass of Throwable, is intended for drastic problems, such as Out of memory Error, Which would reported by the JVM itself.

14. Which is super class of exception?

"Throwable". the parent class of all exception related classes.

15. What are advantages of using exception handling?

Exception handling provides the following advantages over "traditional" error management techniques: Separating Error Handling Code from "Regular" code. Propagating errors up the call stack. Grouping error types and error Differentiation.

16. What are the types of Exceptions in java?

There are two exceptions in java, unchecked exceptions and checked exceptions.

Checked exceptions: A checked exceptions is some sub class of exception, excluding class Runtime Exception and its sub classes. Each method must either handle all checked exceptions by supplying a catch clause or list each unhandled checked exceptions as a thrown exception.

Unchecked exceptions: All Exceptions that extend the Run time Exception class are unchecked exceptions. Class Error and its sub classes also are unchecked.

17. Why errors are not checked?

A unchecked exception classes which are the error classes are exempted from compile time checking because they can occur at many points in the program and recovery from them is difficult or impossible. A program declaring such exceptions would be pointlessly.

18. How does a try statement determine which catch clause should be used to handle an exception?

When an exception is thrown within the body of a try statement. The catch clauses of the try statement are examined in the order in which they appear. The first clause that is capable of handling the exception is executed. The remaining catch clauses are ignored.

19. What is the purpose of the finally clause of a try-catch-finally statement?

The finally clause is used to provide the capability to execute code no matter whether or not an exception is thrown or caught.

20. What are differences between checked and unchecked exceptions in java?

All predefined exceptions in java are either a checked exception or unchecked exception. Checked exceptions must caught using try catch () block or we should throw the exception using throws clause. If you don't, compilation of program will fail.

21. What is the difference between exception and error?

The exception class mild error conditions that your program encounters. Exceptions can occur when trying to open the file, Which does not exist, the network connection is disrupted, operands being manipulated are out of prescribed ranges, the class file you are interested in loading is missing. The error class defines serious error conditions that you should not attempt to recover from. In most cases it is advisable to let the program terminate when such an error is encountered.

22. What is the catch or declare rule for method declarations?

If a checked exception may thrown within the body of a method, the method must either catch the exception or declare it in its throws clause.

23. When is the finally clause of a try-catch-finally statement executed?

The finally clause of the try-catch-finally statement is always executed unless the thread of execution terminates or an exception occurs within the execution of the finally clause.

24. What if there is a break or return statement in try block followed by finally block?

If there is a return statement in the try block, the finally block executes right after the return statement encountered, and before the returns executes.

25. What are the different ways to handle exceptions? There are two ways to handle exceptions?

Wrapping the desired code in a try block followed by a catch the exceptions.

List the desired exceptions in the throws clause of the method and let the caller of the method handle those exceptions.

26. How to create custom exceptions?

By extending the exception class or one of its subclasses.

Example

```
class My Exception extends Exception {
public My Exception( ) {super( ); )
public My Exception(String s) { super(s); }
 }
```

27. Can we have the try block without catch block?

Yes, We can have the try block without catch block, but finally block should follow the try block.

Note: It is not valid to use a try clause without either a catch clause or a finally clause.

28. What are the two major stream classes available in java.io package?

- Byte stream class
- Character Stream class

29. What are the three different categories of write( ) method in byte streams?

write - Writes a byte to the output stream

write(byte b[]) - Write all the bytes in the array b to the output.

write(byte b[],int m,int n) - Writes m bytes from array b starting from nth byte

30. What are the input methods available in scanner class?

| Method | Purpose |
|---|---|
| Nextline() | Reads a line of inputs from the input sources |
| Next() | Reads a single word from the input sources |
| Nextint() | Reads an integer from the input sources |
| Nextdouble() | Reads the floating-point number from the input sources |

31. Write a short notes about print f( ) method.

This method is used to print the output in the specified format. Format specifiers in print f( ) method starts a % character is replaced with the corresponding argument.

Example:

```
System.out.printf("Welcome %s, your register number is %d", name,regno).
```

## PART- B

1. Explain exception hierarchy.
2. Explain the different ways to handle exceptions.
3. Explain the following exceptions with the help of examples:
    (a) Arithmetic Exception
    (b) Null pointer Exception
    (c) Number Format Exception.
4. Explain the following
    (a) Role of stack in exception handling
    (b) Classification of exceptions.
5. Develop a java program to implement types of exception handling
6. Give the class hierarchy in java related to exception handling. Briefly explain each class.
7. What is the necessity of execution handling? Explain exception handling taking "divide-by- zero" as an example.
8. What is the meaning of re throwing an exception? When it is useful?
9. Explain with example use of throws an exception.
10. Explain about input stream and output stream classes.
11. Explain about reader and writer classes.
12. Develop a java program to implement read and write console using scanner class.
13. Develop a java program to implement read and write console using datainputstream class.
14. Develop a java program to implement read and write console using buffered reader class.
15. Develop a java program to implement read and write console using system class.
16. Develop a java program to implement read and write console using file input stream class.
17. Develop a java program to implement read and write console using file reader class.