Java Syllabus – OCJP (Oracle Certified Java Programmer)

Session-1:

a. Skeleton of a class
b. Grammar of variable and method

Session-2:

a. Bitwise details of8- Data Types in JAVA.
b. Rules for Identifiers
c. How to handle with global or class variable and local or method variable.
d. Detailed understanding of static keyword.

Session-3:

a. Object creation.
b. Details study of parameter passing to the method and also how to pass an object as arguments.
c. Detailed understanding of return type and return statement in a method even using the class name as a return type.
d. Reusability concept which is very essential for OOPs concept.

Session-4:

a. Inheritance – Types, Java supportability, Advantages: Explanation with complete JAVA program.
b. Polymorphism –
   I.   Runtime polymorphism (Overriding concept) - Also the practical understanding of Overriding concept. Also the study of super keyword.
   II.   Compile time polymorphism (Overloading concept) – Practical understanding of the Overloading concept.
c. Encapsulation – Security purpose details and the accessibility
d. Detailed study of final keyword which is effectively used in JAVA.

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Session -5:

a. Detailed study of an abstract class which is very important for Servlet concepts in J2EE.

b. Study of interface concepts which we can see practically when we do database connection. Also the multiple inheritances which is again used in the Thread concepts. (Runnable interface and Thread class).

c. Operators:
  ➢ Assignment Operators: =, +=,-=,*=,/=
  ➢ Arithmetic Operators: +, -, *, /, %, ++, --
  ➢ Relational Operators: <, >, <=, >=, ==. !=
  ➢ Instanceof Operator:
  ➢ Conditional Operator: ?:
  ➢ Logical Operators: &, |, ^, !, &&, ||

Session-6:

a. Purpose of casting (Explicit and Implicit casting), boxing and auto boxing

b. Detailed study of study the do and don't because which is the essential area to lot of mathematical problem solving.

c. Complete study of wrapper classes which was developed in 5th version of JAVA to handle the different data types easily.

d. Detailed study of static block.

e. Purpose of the constructor in the JAVA program and the purpose of super() method. Also the study of default and overloaded constructors details.

Session-7:

a. Study of the flow controls:
  ➢ if and if else statement
  ➢ switch statement: important of case constant, break, default keywords with the possibility of compile time error. Detail study of the common mistake the students do.
  ➢ Critical study of while, do...while loop

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➢ Complete study of basic for loop and enhanced for loop for arrays which students might not knows it.

b. Exceptional Handling:
➢ Study of what is an exceptional situation.
➢ How to handle if there is an exceptional situation in the program for further proceeding in the program.
➢ Detailed study of Hierarchy of Exception classes
➢ Complete study of try, catch and finally blocks.
➢ Study of checked and unchecked exceptions.

Session-8:

a. String, StringBuilder and StringBuffer classes:
➢ Purpose of these classes development with the detailed JAVA version development from 1.4 version to 1.5 version which gives the detailed understanding of these classes
➢ Detailed explanation of mutable, immutable, memory pool, thread safety details with these classes.
➢ Detailed study of the methods which are inside these classes which would be used frequently used in the industry.
b. Study of the difference between "**equals()**" and "**==**"

Session-9:

Detailed study of the file handling process from the **I/O package**
➢ Detailed study of the following classes and their methods to create files, write on the file and read from the file as a single character one by one and also junk of characters.
➢ Study of the following classes very detailed that File, FileWriter, FileReader, BufferedWriter, BufferedWriter.

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Session-10:

a. Detailed study of the purpose of the "Inner classes"
b. Study of the "method-local inner classes"
c. Study of "Anonymous inner classes"
d. Study of "Static inner classes"

Session-11:

a. Thread:
   ➢ Purpose of the Thread class and detailed understanding of why thread is needed in our program.
   ➢ Override of the run() method from the Thread class
b. Detailed study of the Runnable interface for this thread handling purpose.
c. Detailed understanding of the very important methods from Thread and Runnable interface.
d. Complete understanding of the Thread life cycle.
   ➢ New Thread
   ➢ Runnable Thread
   ➢ Running Thread
   ➢ Dead Thread
   ➢ Waiting/blocking Thread

Session-12:

a. Detailed study of the Collections class and Collection interface
b. Complete understanding of the collection framework
c. Hierarchy of the collection framework
d. Detailed understanding/importance of the three interfaces - List, Set and Map
e. Study of the collection iteration to process further inside the program.
f. Complete explanation of Generics

Session-13:

- ➢ Complete Understanding of packages which is the very important concept where we need to utilize efficiently in our projects.
- ➢ Understanding enum concepts
- ➢ Understanding of Currency, Date, Calender classes.