



# Turbomachinery Institute of Technology and Sciences, Hyderabad-319

(Approved by AICTE. & Govt. of Andhra Pradesh, Affiliated to JNTU., Hyderabad)

## QUESTION BANK

Year: II- II Branch: CSE Subject: Object Oriented Programming Name of the Faculty: B. Ashok Kumar

### Unit I

**Object oriented thinking:** Need for oop paradigm, A way of viewing world – Agents, responsibility, messages, methods, classes and instances, class hierarchies(Inheritance), method binding, overriding and exceptions, summary of OOP concepts, copying with complexity, abstraction mechanism.

- 1) What are the OOPs features?
- 2) Explain the importance of OOP languages?
- 3) What are the applications of oops?
- 4) What is data abstraction and encapsulation?
- 5) Explain about inheritance and polymorphism with an example?
- 6) Compare Procedural and OOP Languages?
- 7) What is a class inheritance hierarchy? How is it linked to classes and behavior?
- 8) Write a short notes on:
  - a) Inheritance
  - b) Polymorphism
  - c) Abstraction
  - d) Encapsulation
- 9) Explain the importance of Object-oriented programming languages.
- 10) Differentiate runtime and compile time polymorphism.

### Unit II

**Java Basics:** History of Java, Java Buzzwords, data types, variables, scope and life time of variables, arrays, operators, expressions, control statements, type conversion and casting, simple java program, concepts of classes, objects, constructors, methods, access control, this keyword, garbage collection, overloading methods and constructors, parameter passing, recursion, nested and inner classes, exploring string class.

- 1) Explain about buzzwords of java?
- 2) What are the data types used in java? Give examples?
- 3) Explain about control statements in java?
- 4) What is type casting and conversion? When it is required?
- 5) Explain the general syntax of writing an application in java. Also explain the steps to run the application of java program?
- 6) What is an array? How arrays are declared in java with an example?

- 7) Explain operator precedence in java?
- 8) Write a java program for multiplication of matrices?
- 9) What is a constructor? What are its special properties?
- 10) Explain about class and object?
- 11) Explain about method overloading with example?
- 12) Explain about constructor overloading with example?
- 13) Write a java program for finding factorial of a given no.?
- 14) Explain about parameter passing technique?
- 15) Write a program to compute
 
$$1/1+1/2+1/3+\dots+1/n$$

$$1/2^0+1/2^1+1/2^2+\dots+1/2^n$$
- 16) Explain the use of static, final, public, and private keywords?

### Unit III

**Inheritance:** Hierarchical abstractions, Base class object, subclass, subtype, substitutability, forms of inheritance- specialization, specification, construction, extension, limitation, combination, benefits of inheritance, costs of inheritance. Member access rules, super uses, using final with inheritance, Polymorphism- method overriding, abstract classes, the object class

- 1) Discuss about Hybrid inheritance with an example?
- 2) Discuss about hierarchical inheritance with an example?
- 3) Explain about abstract class with an example?
- 4) Explain about the usage of super keyword with an example?
- 5) What is method overriding? How methods overriding is achieved in Java, with an example?
- 6) What happens when the final keyword is used for inheritance? Explain with an example?
- 7) Explain about benefits of inheritance. Define inheritance write a java program for simple inheritance
- 8) What is an abstract class? Can an abstract class have constructor? Explain?
- 9) Explain final keyword with all its usages. Support explanation with a program.
- 10) What is inheritance? How is it different from Aggregation?

### Unit IV

**Packages and Interfaces:** Defining, Creating and Accessing a Package, Understanding CLASSPATH, importing packages, differences between classes and interfaces, defining an interface, implementing interface, applying interfaces, variables in interface and extending interfaces. Exploring java.io.

- 1) Prove that all the methods in interface are public. Explain with an example?
- 2) What is package? Explain the procedure to create package with an example?
- 3) List the advantages of packages and interfaces?
- 4) What is the usage of import statement? Explain with an example?
- 5) Explain how interfaces are implemented with an example?

- 6) Explain in detail the process of defining, creating, importing and accessing a package with example?
- 7) How interfaces can be extended? Explain with an example?
- 8) Give difference between abstract class and interface?
- 9) How multiple inheritances are achieved in java with the interfaces? Explain with an example?
- 10) Differentiate between Packages and Interfaces? Explain different types of java packages?

### Unit V

**Exception Handling:** Concepts of exception handling, benefits of exception handling, Termination or resumptive models, exception hierarchy, usage of try, catch, throw, throws, finally, built in exceptions, creating own exception sub classes.

String handling, Exploring java.util.

- 1) When you use nested try statements. Explain nested try statements with the help of an example?
- 2) Explain the following:  
try, catch, throw, throws, finally
- 3) What are the checked Exceptions and Unchecked Exceptions? Explain some of these exceptions with an example and also give the difference between them.
- 4) In JAVA, is exception handling implicit or explicit or both. Explain with the help of example java programs.
- 5) Explain about different types of exception handling techniques in java program.
- 6) a) Write a java program to demonstrate exception chaining.  
b) Can we catch the exception without catch block? Explain?
- 7) How user can create user defined exceptions. Explain with an example?
- 8) Explain Logging in Java with all its levels.
- 9) What is Collection in Java? Can you identify any real life example which is similar to a collection in Java?
- 10) Explain the difference between: i) Vector and ArrayList. ii) Enumeration and Iterator.
- 11) What are the Generics and how are they used in Java with an example?
- 12) Explain the related objects provided in java.util package?
- 13) What are the string handlings functions? Explain?

### Unit VI

**Multithreading:** Differences between multi threading and multitasking, thread life cycle, creating threads, thread priorities, synchronizing threads, inter thread communication, thread groups, daemon threads. Enumerations, autoboxing, annotations, generics.

- 1) What is multithreading? Give an example for creation of multiple threads?
- 2) Compare thread based and process based multitasking?
- 3) Explain the creation of threads with an example?

- 4) What is the difference between suspending and stopping a thread? List the methods used to block a thread?
- 5) Can we catch the exception without catch block? Explain?
- 6) Explain how synchronization can be obtained in threads with example?
- 7) What is deadlock? How it can be avoided. Explain?
- 8) How user can create user defined exceptions. Explain with an example?
- 9) How the priorities can be assigned to threads? Explain with example?
- 10) Define each of the following terms.
 

a) Thread	b) Multithreading
c) Waiting state and Timed_waiting state	d) Running state
e) Preemptive scheduling	f) Runnable interface
g) Monitor	h) Notify method
i) Join() method.	

### Unit VII

**Event Handling:** Events, Events sources, Event classes, Event Listeners, Delegation event model, handling mouse and keyboard events, Adapter classes.

The AWT class hierarchy, user interface components- labels, button, canvas, scrollbars, text components, check box, check box group, choices, lists panels- scroll pane, dialogs, menu bar, graphics, layout manager- layout manager types- border, grid, flow, card and grid bag.

- 1) Give overview of java event handling mechanism?
- 2) What is event source? Give examples of event sources. How events are generated. All Events are generated by user actions. Explain?
- 3) What are the methods supported by the following interfaces explain.
  - a) Action Listener Interface
  - b) Mouse Motion Listener Interface
  - c) Text listener Interface
- 4) Define event. Give examples of events. Define event handler. How it handles events?
- 5) What are delegation event modes? Explain it what are the benefits?
- 6) With an example show the handling of mouse events in java?
- 7) With an example show the handling of key events in java?
- 8) How is a container difference from other types of components?
- 9) What is a window? What are the operations of window?
- 10) Explain about the following things: font, Graphics, Color?
- 11) What are various layout managers available in JFC? Explain of them with their Functionality. Explain with example?
- 12) How you will add text area, button, checkbox, lists to an applet? Explain with skeleton Code?

13) Write short notes on

- a) Jscrollpane
- b) Jtabbedpane
- c) JToolBar

### Unit VIII

**Applets:** Concepts of Applets, difference between applets and applications, life cycle of an applet, types of applet, types of applets, creating applets. Passing parameters to applets.

**Swing:** Introduction, limitations of AWT, MVC architecture, components, containers, exploring swing- JApplet, JFrame and JComponent, Icons and Labels, text fields, buttons- The JButton class, Check boxes, Radio buttons, Combo boxes, Tabbed Panes, Scroll Panes, Trees, and Tables

- 1) a) What are the advantages of Layout
- 2) Explain the life cycle of an applet?
- 3) Describe the arguments used in the method drawRoundRect()?
- 4) How parameters can be passed to applet?
- 5) How Jtable is created with a simple example?
- 6) Explain about layout manager? With an example?
- 7) Explain the creation of Jtree with an example?
- 8) Explain the difference between Swing and AWT.
- 9) What is the difference JButton and JToggleButton
- 10) What are the various dialog boxes available in Swing and how are they created?