

CODE	COURSE NAME	CATEGORY	L	T	P	CREDIT
EET352	OBJECT ORIENTED PROGRAMMING	PEC	2	1	0	3

Preamble : Nil

Prerequisite : Nil

Course Outcomes : After the completion of the course the student will be able to:

CO 1	Explain object oriented programming concepts and creation of classes for Java applications
CO 2	Develop Java programs using arrays, strings, packages and inheritance concepts
CO 3	Build Java applications using abstract classes, interfaces, run time errors and exceptions
CO 4	Develop Java applets and applications for file I/O operations
CO 5	Apply the concept of multithreading in Java applications.

Mapping of course outcomes with program outcomes

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2											1
CO 2	2	2			3							2
CO 3	2	2			3							2
CO 4	2	2			3							2
CO 5	2	3			3							2

Assessment Pattern

Bloom's Category	Continuous Assessment Tests		End Semester Examination
	1	2	
Remember (K1)	10	10	20
Understand (K2)	10	10	20
Apply (K3)	20	20	40
Analyse (K4)	10	10	20
Evaluate (K5)	-	-	-
Create (K6)	-	-	-

End Semester Examination Pattern : There will be two parts; Part A and Part B. Part A contains 10 questions with 2 questions from each module, having 3 marks for each question. Students should answer all questions. Part B contains 2 questions from each module of which

student should answer any one. Each question can have maximum 2 sub-divisions and carry 14 marks.

Course Level Assessment Questions

Course Outcome 1 (CO1):

1. How does Java achieve platform independence?
2. Compare data hiding and data abstraction in Java.
3. Why main() method is declared as 'static' in Java?

Course Outcome 2 (CO2):

1. Demonstrate how packages are created and used in Java.
2. Compare static binding and dynamic binding
3. Illustrate the use of 'final' keyword in Java.

Course Outcome 3 (CO3):

1. Demonstrate how multiple inheritance is implemented using interfaces.
2. Differentiate abstract classes and interfaces.
3. What are the different ways to handle exceptions in Java?

Course Outcome 4 (CO4):

1. Differentiate between Java applets and Java applications.
2. Explain how parameters can be passed to an applet.
3. Develop a Java program to create a file named "input.txt", write data into the file, read the contents from the file and display on the screen.

Course Outcome 5 (CO5):

1. Illustrate the different ways to create multithreaded programs in java.
2. Give the syntax of SELECT and INSERT SQL commands with example.
3. Explain the architecture of JDBC

Model Question paper**QP CODE:**

PAGES:2

Reg.No: _____

Name: _____

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
SIXTH SEMESTER B.TECH DEGREE EXAMINATION,
MONTH & YEAR****Course Code: EET 352****Course Name: Object Oriented Programming**

Max. Marks: 100

Duration: 3 Hours

PART A (3 x 10 = 30 Marks)**Answer all Questions. Each question carries 3 Marks**

1. Explain how data encapsulation and data hiding are implemented in Java.
2. Demonstrate the significance of the 'static' keyword in Java.
3. What are packages? How packages are created and used?
4. Explain the usage of 'final' keyword in Java programs.
5. What are the different ways to handle exceptions?
6. Compare and contrast abstract classes and interfaces.
7. How can parameters be passed into applets? Give examples.
8. What is a stream? Illustrate how the concept of streams is used in java.
9. How thread priority is set in Java? Explain with an example
10. What are different types of JDBC drivers?

PART B (14 x 5 = 70 Marks)**Answer any one full question from each module. Each question carries 14 Marks****Module 1**

11. (a) Outline the four access control specifiers in Java and illustrate their use with the help of an example program. (7)
b) What are constructors? Demonstrate the use of different types of constructors in java. (7)
12. (a) Discuss the advantages of object oriented paradigm and compare it with procedure oriented programming. (7)

- (b) Create a Java program to read the details of an employee like name, ID, Basic pay, DA, HRA etc. Find the net salary (Basic pay + DA +HRA) and display the employee details including net salary. Use class Employee to store all the data and use appropriate methods to access the data, calculate net salary and display the details. (7)

Module 2

13. (a) Compare and contrast method overloading and method overriding in java with the help of example programs. (7)
- (b) Explain with examples, the different ways to compare two strings in Java. (7)
14. (a) Explain different types of inheritance. How they are implemented in Java? (8)
- (b) Demonstrate the uses of the keyword “super” in Java. (6)

Module 3

15. (a) Demonstrate how multiple inheritance is implemented in Java with the help of an example program. (7)
- (b) What is an inner class? Explain different types with examples. (7)
16. (a) Differentiate object cloning and copying. How object cloning is implemented in Java? (7)
- (b) What is reflection? List any 3 methods used to analyse classes during runtime. (7)

Module 4

17. (a) “Applets can be used to play audio files”. Support this statement with suitable example. (7)
- (b) Write a program to create a file named “input.txt”, write data into the file, read the contents from the file and display on the screen (7)
18. (a) What is an applet? Explain the life cycle of an applet with a neat sketch. (6)
- (b) Distinguish between (i) Input Stream and Reader classes and (ii) Output Stream and Writer classes (8)

Module 5

19. (a) What is SQL? Write SQL commands to create, update and delete a table. (7)
- (b). Explain different methods for creating threads in Java. (7)
20. (a) Explain the life cycle of a thread. Which are the different thread properties? (7)
- (b) Describe the steps for establishing JDBC connection with the help of an example program. (7)

Syllabus

Module 1:

Review of object-oriented concepts- Java features – Java Virtual Machine - Objects and classes in Java - defining classes – methods – access specifiers - static members- command line arguments– constructors

Module 2:

Arrays – Strings -Packages - Inheritance – class hierarchy – polymorphism – static binding - dynamic binding – final keyword

Module 3:

Abstract classes – the Object class – Reflection – interfaces – object cloning – inner classes - Exception handling

Module 4:

Applet Basics-

Life cycle - The Applet HTML Tags and Attributes, Creating and running applets – Multimedia support, The Applet Context, JAR Files

File I/O - Concept of Streams - Use of character / byte Streams and stream classes - Writing and Reading characters / bytes

Module 5: –

Multithreaded programming-

Life cycle of a thread -Thread properties – Creating a thread -Interrupting threads –Thread priority- thread synchronization – Synchronized method -Inter thread communication

Database Programming -The Design of JDBC, The Structured Query Language, JDBC Installation, Basic JDBC Programming Concepts, Query Execution

Text Books

1. Herbert Schildt, “Java – The Complete Reference “, 8th Edition, Tata McGraw Hill
2. Cay S. Horstmann and Gary Cornell, “Core Java: Volume I & II– Fundamentals”, Pearson Education, 2008.
3. E Balaguruswamy, “Programming with Java – A primer”, 5th Edition, McGraw Hill

Reference Books

1. P.J.Deitel and H.M.Deitel, “Java: How to Program”, PHI.

2. Programming in Java, S.Malhotra and S.Choudhary, Oxford Univ. Press, 2018
3. K. Arnold and J. Gosling, “The JAVA programming language”, Pearson Education
4. Bruce Eckel, Thinking in Java, Pearson Education
5. David H Friedel,Jr. and Anthony Potts, Java Programming Language Handbook, Coriolis Group Books
6. Doug Lowe, Java all-in-one for Dummies, John Wiley & Sons
7. Laura Lemay and Charles L Perkins, Teach yourself Java in 21 days, Sams Publishing

Course Content and Lecture Schedule

No	Topic	No. of Lectures
1	Module 1 (9 hrs)	
1.1	Review of Object-Oriented Concepts	1
1.2	Java features - Java Virtual Machine	1
1.3	Objects and classes in Java	1
1.4	defining classes – methods	1
1.5	access specifiers	1
1.6	static variables, static blocks	1
1.7	static methods, static classes	1
1.8	command line arguments	1
1.9	constructors	1
2	Module 2 (8 hrs)	
2.1	Arrays – 1D	1
2.2	Arrays – 2D	1
2.3	Strings	1
2.4	Packages	1
2.5	Inheritance – class hierarchy	1
2.6	Polymorphism- static binding	1
2.7	dynamic binding	1
2.8	final keyword	1
3	Module 3 (7 hrs)	
3.1	abstract classes	1
3.2	the Object class	1
3.3	Reflection	1
3.4	interfaces	1
3.5	object cloning	1
3.6	inner classes	1

3.7	Exception handling	1
4	Module 4 (7 hrs)	
4.1	Applet Basics- Life cycle- The Applet HTML Tags and Attributes	1
4.2	Creating and running applets	1
4.3	Multimedia support	1
4.4	The AppletContext - JAR Files	1
4.5	File I/O - Concept of Streams	1
4.6	Use of character / byte Streams and stream classes	1
4.7	Writing and Reading characters / bytes	1
5	Module 5 (5 hrs)	
5.1	Multithreaded programming – Life cycle of a thread -Thread properties	1
5.2	Creating a thread - Interrupting threads –Thread priority	1
5.3	Thread synchronization – Synchronized method -Inter thread communication	1
5.4	Database Programming -The Design of JDBC, The Structured Query Language, JDBC Installation	1
5.5	Basic JDBC Programming Concepts, Query Execution	1