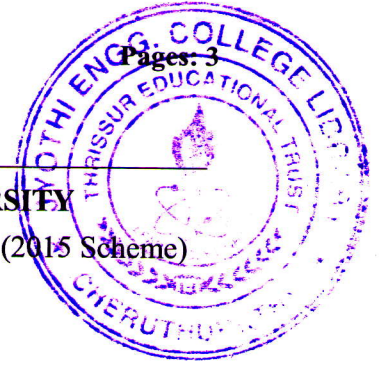02000CS206052001

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# APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
Fourth Semester B.Tech Degree (S,FE) Examination August 2021 (2015 Scheme)

**Course Code: CS206**
**Course Name: OBJECT ORIENTED DESIGN AND PROGRAMMING (CS)**

Max. Marks: 100                                                    Duration: 3 Hours

## PART A
*Answer all questions, each carries 3 marks.*                            Marks

1   Outline the reasons as of why Java programs are known as "Write Once and   (3)
    Run Anywhere" programs?

2   Summarize the need of constructors in Java and list the different types of   (3)
    constructors allowed in Java programs.

3   Distinguish between Composition and Aggregation relations that exist in class   (3)
    diagram.

4   Define encapsulation with a proper example.                            (3)

## PART B
*Answer any two full questions, each carries 9 marks.*

5   a)   Construct a Use Case Diagram for an online music playing system   (5)

    b)   Construct a Java class from the given class diagram:              (4)

| Person |
| --- |
| - name : String |
| - address: String |
| - yearofBirth: int |
| + setDetails(n:String,m:String,p:int):void |
| + displayDetails():void |
| # calculateAge(currentYear:int):int |

6   a)   Write a simple Java program to check whether a given number is palindrome   (4)
    or not.

    b)   With an example demonstrate how compile time polymorphism is achieved in   (5)
    Java.

7   a)   Outline the different stages of an Object Oriented Software Development   (4)
    Process.

| | | | |
|---|---|---|---|
| | b) | With an example, demonstrate how referential data type (class objects) are passed as arguments from one method to another. | (5) |

## PART C
### *Answer all questions, each carries 3 marks.*

| | | |
|---|---|---|
| 8 | List the advantages of using packages in Java programming. | (3) |
| 9 | Define Streams in Java. If a Unicode encoded file is read using the character stream classes then how much memory would be required to represent the character read? | (3) |
| 10 | Is method overriding a polymorphism concept? Support the answer with valid arguments. | (3) |
| 11 | Summarize the different strategies used to achieve code synchronization in Java. | (3) |

## PART D
### *Answer any two full questions, each carries 9 marks.*

| | | | |
|---|---|---|---|
| 12 | a) | With a neat diagram demonstrate the life cycle of a Thread in Java. | (4) |
| | b) | Consider a scenario in Java programming where one has to define two classes in two different packages. Let 'Man' and 'Woman' be the two classes which need to be defined in packages 'pack1' and 'pack2' respectively. Develop a Java program that would implement the desired concept. (Assume appropriate class members for 'Man' and 'Woman' classes). | (5) |
| 13 | a) | Develop a Java program consisting of two threads 'Thread1' and 'Thread2' which displays two different messages continuously. The thread should be implemented using the Runnable Interface. | (5) |
| | b) | With a flowchart illustrate the flow of control in the execution of try-catch-finally statement. | (4) |
| 14 | a) | Write a Java program to open a file whose name would be given by the user and print a message 'Executable' to the console if the file is an executable one. | (4) |
| | b) | List the different types of inheritance supported in Java with appropriate examples. | (5) |

## PART E
### *Answer any four full questions, each carries 10 marks.*

| | | | |
|---|---|---|---|
| 15 | a) | Outline the significance of String class in Java and list any of its five built in functions. | (5) |

b) With a neat diagram illustrate the Event Delegation Model in Java for event Handling. (5)

16 a) List any three awt controls, the events associated with it, the corresponding event-listeners and adapter classes used for handling the corresponding events. (6)

b) Compare the different features of awt and swing packages. (4)

17 Write a Java program which accepts a string from the user and display the reverse of it. (10)

18 Develop a swing/awt based Java program which would provide a GUI frame for entering the details of a student using textbox and other controls. The frame should also contain two buttons 'OK' and 'Close'; on clicking the 'OK' button the program should perform some operation on the collected data and on clicking the 'Close' button the program should exit gracefully. Use appropriate event handling mechanisms. (10)

19 a) What are Layout Managers? Discuss any one layout manager with suitable example. (6)

b) List the sequence of method invocation when a Java Applet program is executed. (4)

20 With a sample program show the different steps involved in developing a JBBC based Java program that would execute a query on a given database. (10)

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