

DEPARTMENT

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| **QUESTION BANK** | | | |
| **VI - SEMESTER B.TECH DEGREE EXAMINATION, JANUARY 2020** | | | |
| *(Details of Faculty Member prepared the Questions)* | | *(Details of Course)* | |
| Name of Faculty | Sumesh Raman | Course Code | CST 205 |
| Department | CSE | Course Name | OOPS Using Java |
| **N.B.**   * Please modify the given template/pattern corresponding to the question paper pattern given in the course plan and modules assigned. * Please read the guidelines for preparing questions for question papers.   1\* - Course Outcome: Please write the COs (CO1/CO2/CO3/CO4/CO5/CO6 etc) against each question. 2\* - Knowledge Level: Please write the K-Level (K1/K2/K3 etc) against each question.  3\* - Theory (T)/Problem(P)/Design(D) : Please specify the category of question Eg. Theory (**T**), Problem (**P**), Design (**D**) etc….  **4\*-** Difficulty Level: Please specify the relative difficulty level of the questions in terms of **Straight (S), Above Average (A), Difficult (D) and Tough(T)** | | | |

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| **PART B (MODULE III)** | | | | 1\* | 2\* | 3\* | 4\* |
|  |  | ***15 Marks Questions***  *Each question can have maximum four sub division* | Marks | Course Outcome | Knowledge Level | Theory(**T**)/ Problem(**P**)/ | Difficulty Level |

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|  |  | ***(Prepare maximum Questions possible, covering all areas of the modules assigned )*** |  |  |  | Design(**D**) | **(S/A/D/T)** |
| 1 | (a) | How do you create and import a package in Java? | ( 5) | III | L2 | T | A |
|  | (b) | Write an example of implementing an interface in Java. | ( 5) | III | L2 | T | A |
|  | (c) | Illustrate the working of any two methods of String class that compare strings | ( 5) | III | L2 | T | A |
|  |  |  | ( 5) | III | L2 | T | S |
| 2 | (a) | List and explain any three methods defined by the ‘List’ interface in Java | ( 5) | III | L2 | T | D |
|  | (b) | Write a Java program to copy the contents of one file to another file using  FileInputStream and FileOutputStream classes | ( 5) | III | L3 | T | A |
|  | (c) | Describe various methods of reading data from the keyboard with appropriate  examples in Java | ( 5) | III | L2 | T | A |
|  |  |  | ( 5) | III | L2 | T | A |
| 3 | (a) | Differentiate between checked and unchecked exceptions in Java with  examples. | ( 5) | III | L2 | T | A |
|  | (b) | Demonstrate the significance of the keywords ‘try’, ‘catch’, ‘finally’, ‘throw’  and ‘throws’ in exception handling of Java with appropriate examples. | ( 5) | III | L3 | T | S |
|  | (c) | Discuss the event handling mechanism in Java using the Delegation Event  Model? | ( 5) | III | L2 | T | A |
|  |  | How mouse events are handled in Java? Give suitable Java source code | ( 5) | III | L3 | P | A |
| 4 | (a) | Discuss the methods of creating threads in Java using appropriate examples | ( 5) | III | L2 | T | A |
|  | (b) | Write a Java program that creates multiple child threads to print odd and even  numbers from 50-100 | ( 5) | III | L2 | T | S |
|  | (c) | Describe the following statements in Java.:  i) switch and for ii) break and continue | ( 5) | III | L2 | T | D |
| 5 | (a) | What is the use of interface in Java? Give example. | ( 5) | III | L2 | T | A |
|  | (b) | Write a note on byte stream and character stream related classes. | ( 5) | III | L2 | T | A |
|  | (c) | Define package. How is a class within a package compiled and executed? | ( 5) | III | L2 | T | A |
|  |  |  | ( 5) | III | L2 | T | A |
| 6 | (a) | Explain the different ways of creating threads in Java. | ( 5) | III | L2 | T | S |
|  | (b) | Write a Java program that accepts N integers through console and compute their  average. | ( 5) | III | L2 | T | D |
|  | (c) | Develop a java package named primepackage, with a class Prime containing a  static method that check whether a number is prime or not and returns that  information. Import this package in another class and use to check a number is  prime or not. | ( 5) | III | L3 | D | A |
|  |  |  | ( 5) | III | L2 | T | A |
| 7 | (a) | What is exception? List any four exception classes in Java. Briefly explain  various exception handling keywords in Java, with examples. | ( 5) | III | L2 | T | A |
|  | (b) | Explain event handling in Java. | ( 5) | III | L2 | T | A |

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|  | (c) | List any five event sources and their corresponding event types and listeners  used. | ( 5) | III | L2 | T | A |
|  |  |  | ( 5) | III | L2 | T | A |
| 8 | (a) | Model a Java class in such a manner that it is restricted to have only one instance  throughout the program in which it is used. | ( 5) | III | L2 | D | A |
|  | (b) | Why is that, in Java the size of ‘char’ datatype is of 2 bytes while that in C is of 1  (1)  byte? | ( 5) | III | L2 | T | S |
|  | (c) | State the benefits that can be achieved through the use of packages in Java. | ( 5) | III | L2 | T | D |
|  |  |  | ( 5) | III | L3 | T | A |
| 9 | (a) | What is file? How files are represented in Java? | ( 5) | III | L2 | T | A |
|  | (b) | Illustrate with an example, how a class in Java can be prevented from getting  inherited? | ( 5) | III | L2 | T | A |
|  | (c) | Write two subclasses for the ‘InputStream’ and ‘OutputStream’ classes in Java and  specify its uses | ( 5) | III | L2 | T | A |
|  |  | Can a class in Java implement more than one interfaces, if yes what is the syntax  used? | ( 5) | III | L2 | T | S |
| 10 | (a) | Write a Java program to create a new file named ‘MyFile.txt’ and write the  statement “This is the University Exam for OODP. This a program to illustrate the  use of files.” into the file with each sentence in the statement representing a new  line in the file | ( 5) | III | L2 | P | D |
|  | (b) | With a suitable example summarize how 0 to 100% abstraction can be achieved  through the use of Abstract class in Java? | ( 5) | III | L3 | T | A |
|  | (c) | What is Thread Synchronization? With an example illustrate the working of any  one technique used for Thread synchronization in Java. | ( 5) | III | L2 | T | A |
|  |  | Define two user defined exception EvenNumberException’ and (7) ‘OddNumberException’. Write a Java class which has a method which checks whether a given number if even or not. The method throws ‘EvenNumberException’ or ‘OddNumberException’ if the number is even or odd respectively. Illustrate the handling of the exception with suitable sequence of codes. | ( 5) | III | L3 | P | A |
|  |  | Illustrate the use of ‘DataInputStream’ and DataOutputStream | ( 5) | III | L2 | T | A |
|  |  | Define Events in Java. Illustrate the events and the corresponding event listeners for  (4)  the UI elements such as TextField, Button and Window | ( 5) | III | L2 | T | S |
|  |  | Define a class Queue for representing a queue data structure. The class must(6)  define a default constructor, a parameterized constructor and functions for en-  queue, de-queue and display operations. Write a Java program to implement  this. | ( 5) | III | L3 | D | D |
|  |  | What are packages? Explain how packages are created in Java. | ( 5) | III | L2 | T | A |
|  |  | What are interfaces? How interfaces are used in Java? | ( 5) | III | L2 | T | A |
|  |  | What are Checked Exceptions? Give an example. | ( 5) | III | L3 | T | A |
|  |  | What are thread priorities? How can you assign priority values for threads(3) created in Java? | ( 5) | III | L2 | T | A |
|  |  | Discuss about any two stream classes used in Java. | ( 5) | III | L2 | T | S |
|  |  | Write a Java program to create two threads: One for displaying all odd numbers(5)  between 1 and 100 and second thread for displaying all even numbers between 1  and 100. | ( 5) | III | L2 | D | D |
|  |  | Create a user defined Exception ‘InvalidNumberException’. Write a Java(6)  program that computes the average of N positive numbers given as Command  Line Arguments. Raise the Exception ‘InvalidNumberException’ on reading a  negative number or zero as input. | ( 5) | III | L3 | D | A |
|  |  | Explain Event Delegation model in Java. | ( 5) | III | L2 | T | A |
|  |  | Discuss any four methods used for string processing in Java | ( 5) | III | L3 | T | A |
|  |  | How can we prevent a class from instantiation? | ( 5) | III | L2 | T | A |
|  |  | What are byte streams and character streams? Give examples of Java classes3  for each stream. | ( 5) | III | L2 | T | S |
|  | | | | III | L2 | T | D |
| 1 | (a) | Explain the concept of thread synchronization | ( 5) | III | L2 | T | A |
|  | (b) | What are packages? Illustrate package hierarchy in java with the help of an  example | ( 5) | III | L2 | T | A |
|  | (c) | Compare and contrast abstract classes and interfaces | ( 5) | III | L3 | T | A |
|  |  | Explain in detail how exception handling mechanism used  in Java using BufferedReader class | ( 5) | III | L2 | P | A |
| 2 | (a) | Write a Java program to read characters from the console using4  ‘throw’ and ‘throws | ( 5) | III | L2 | P | A |
|  | (b) | Explain the different ways of creating a thread. | ( 5) | III | L2 | P | S |
|  | (c) | What are synchronized blocks? Explain with an example | ( 5) | III | L2 | T | D |

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|  |  | Explain the working of Delegation Event Model. | ( 5) | III | L2 | T | A |
| 3 | (a) | Does importing a package makes available all classes, interfaces and sub-  packages within it? Justify. | ( 5) | III | L2 | T | A |
|  | (b) | What are the uses of “finally” statement in exception handling? | ( 5) | III | L2 | T | A |
|  | (c) | List the sub-classes of Writer and Reader character oriented stream classes | ( 5) | III | L2 | T | S |
|  |  | Draw the lifecycle of a thread showing the different states and methods invoked. | ( 5) | III | L2 | T | D |
| 4 | (a) | Explain the scenario under which the following three exceptions occur,  NumberFormatException, ArithmeticException, and  ArrayIndexOutOfBoundsException. | ( 5) | III | L3 | D | A |
|  | (b) | Write a java program to create two threads, one for writing odd numbers and  another for writing even numbers up to 100 into two different files. | ( 5) | III | L2 | D | A |
|  | (c) | What are the uses of “synchronized” keyword? | ( 5) | III | L2 | T | A |
|  |  | What is an exception? Why it needs to be handled? | ( 5) | III | L3 | T | A |
| 5 | (a) | Describe the different character extraction methods of String class along with  their syntax. | ( 5) | III | L2 | T | S |
|  | (b) | Illustrate the character stream class hierarchy. | ( 5) | III | L3 | T | D |
|  | (c) | What are the uses of synchronized keyword in Java? | ( 5) | III | L3 | T | A |
|  |  | What is a package?  b) What are the advantages of using a package?(3)  c) Write the steps and java code for creating a package named “AdMath” containing(4)  a method to calculate the factorial of a number passed to it. | ( 5) | III | L2 | T | A |
| 6 | (a) | What are the advantages of multi-threading in Java? | ( 5) | III | L2 | T | A |
|  | (b) | Illustrate the two ways of creating threads in Java with the help of examples? | ( 5) | III | L2 | T | A |