

H

Roll No.

TMC-202

M. C. A. (SECOND SEMESTER)

MID SEMESTER

EXAMINATION, 2021-22

OBJECT ORIENTED ANALYSIS AND JAVA
PROGRAMMING

Time : 1½ Hours

Maximum Marks : 50

Note : (i) Answer all the questions by choosing
any *one* of the sub-questions.

(ii) Each sub-question carries 10 marks.

1. (a) Create a class Author with the following
information : (CO1)

Member variables :

Name (String), e-mail (String) and gender
(char)

Parameterized Constructor : To initialize
the variables

P. T. O.

(2)

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Create a class Book with the following information :

Member variables :

Name (String), author (of the class Author you have just created, price (double), and qtyInStock(int)

Getters and Setters method for all the member variables.

In the main method create a book object and print all details of the book.

OR

- (b) Explain java features in detail. Explain the purpose of the constructor and also explain the default constructor. (CO1)
2. (a) Differentiate between method overloading and method overriding using suitable java code. (CO1)

OR

- (b) Write a java program to generate a PIN according to the following condition. Enter a line using nextLine() method of Scanners class (siring with space) :

Step 1 : Calculate the length of each word in a given string.

(3)

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Step 2 : If the sum of the length of the input string is a single digit, then PIN=SUM.

Step 3 : If the sum in "step 1" is (SUM= Two digits) two digits, then calculate the sum of digits again until SUM become single digit number.

Input Siring : String s="abcd abcdef", first-word length 4, second word length=6
SUM =>4+6=10.

If the sum of length is a single digit, then PIN =SUM.

Else calculate the sum of digits again sum =1+0=> PIN=1.

3. (a) Differentiate between abstract class and interface. Implement an interface using an anonymous inner class. (CO2)

OR

- (b) Explain packages in Java. Also explain static import with suitable java program.

(CO2)

P. T. O.

(5)

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OR

- (b) Differentiate between sleep() and join() method. Write a Java program to create two threads, t1 and main thread t1 thread will wait till main thread completes its execution (use "join()" method). (CO3)

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4. (a) Explain the purpose of exception handling. Differentiate checked and unchecked exceptions. Is it possible to have multiple catch statements with a try block ? (CO2)

OR

- (b) Differentiate between throws and throw keywords. Write a Java program to create user define exception UnderAge and OverAge. Enter the age of a person using Scanner class. If the age is less than 18, then throw UnderAgeExceptions with "Age should be greater than 18" message and if the age is greater than 70, then throw OverAgeException with "Too old age" message. (CO2)

5. (a) Explain multi-threading in Java. Explain thread synchronization. Write a Java program to create implement thread synchronization. (CO3)