

SVKM's NMIMS
MUKESH PATEL SCHOOL OF TECHNOLOGY MANAGEMENT & ENGINEERING/
SCHOOL OF TECHNOLOGY MANAGEMENT & ENGINEERING

Programme: B.Tech/ MBA Tech (Computer)

Year: II

Semester: III

Academic Year: 2019-20

Subject: Object Oriented Programming

Date: 16 November 2019

Marks: 100

Time: 2.00 pm - 5.00 pm

Durations: 3 (Hrs)

No. of Pages: 2

Final Examination (2019-20)

Instructions: Candidates should read carefully the instructions printed on the question paper and on the cover of the Answer Book, which is provided for their use.

- 1) Question No. 1 is compulsory.
- 2) Out of remaining questions, attempt any 4 questions.
- 3) In all 5 questions to be attempted.
- 4) All questions carry equal marks.
- 5) Answer to each new question to be started on a fresh page.
- 6) Figures in brackets on the right hand side indicate full marks.
- 7) Assume suitable data if necessary.

- Q1. a. Can you achieve multiple inheritance using classes in Java? If not, how can it be achieved, explain with the help of suitable example code? [6]
- b. State the Model View Controller in Java with help of a suitable diagram. [6]
- c. State the use of final keyword in Java. [4]
- d. What are the key differences between Abstraction and Encapsulation. [4]
- Q2. a. Explain with suitable example how can you perform Abstraction by parameterization and specification. What are the advantages of each? [10]
- b. i. A user-defined package 'DemoPackage' contains a class named 'Amount' which accepts a user's name and balance amount and also displays a person's details. Create another class 'Pack_use' that makes use of the above package and accepts three entries by the user.
- ii. Does importing a package imports the sub packages as well? E.g. Does importing com.bob.* also import com.bob.code.*? Give appropriate reasons for your answer. [10]
- Q3. a. Differentiate between Method Overloading and Method Overriding. Also give a suitable example code. [10]
- b. Create a 'student' base class that accepts a student's name and roll no.; create another class 'student_A' that inherits 'student' class and accepts a student's marks in two subjects; create another class 'student_result' that calculates the total marks of the student. Display the student's details and the total marks as the output. [10]

- Q4. a. Show with the help of a program how iterators can be used in Collections framework. What are the important methods declared by the iterator interface? [10]
- b. What are the advantages of using Generics in Java. Also specify through a suitable program how does it provide type-safety? [10]
- Q5. a. What are bounded type parameters? State their use with the help of a suitable example. [10]
- b. State what are the differences between Unit testing and Integration testing. [10]
- Q6. a. State what are the significant differences between an Abstract class and an Interface. [10]
- b. What are containers in Java? State the use of JFrame and JApplet with the help of suitable program. [10]
- Q7. a. State the use of ArrayList class with the help of a suitable program. [6]
- b. Explain the what are Bounded Wildcards? Explain any of its types with the help of a suitable example. [6]
- c. Write a short note on the key features of SCALA. [4]
- d. Write a short note on Software Development Life Cycle. [4]
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