### **Test 1 Review...**

|  |
| --- |
| Study.  Lecture 1   1. Explain what OOP is 2. Describe benefits of OOP 3. Understand basic concepts of abstraction, encapsulation, generalisation, polymorphism   **Object-oriented programming (OOP)** is a  based on the concept of "[objects](https://en.wikipedia.org/wiki/Object_(computer_science))", which may contain [data](https://en.wikipedia.org/wiki/Data), in the form of [fields](https://en.wikipedia.org/wiki/Field_(computer_science)), often known as attributes; and code, in the form of procedures, often known as [methods](https://en.wikipedia.org/wiki/Method_(computer_science))  Object orientation solves many problems which are associated with the development and quality of software products. New technology gives greater programmer productivity.  **Abstraction** is a process of hiding the implementation details from the user. Оnly the functionality will be provided to the user.  **Encapsulation** in Java is a mechanism of wrapping the data (variables) and code acting on the data (methods) together as a single unit. ... Declare the variables of a class as private. Provide public setter and getter methods to modify and view the variables values  **Generalization** is the process of extracting shared characteristics from two or more classes, and combining them into a generalized superclass. Shared characteristics can be attributes, associations, or methods. ... In contrast to generalization, specialization means creating new subclasses from an existing class.  **Polymorphism** in Java is a concept by which we can perform a single action in different ways. ... Sopolymorphism means many forms. There are two types of polymorphism in Java: compile-timepolymorphism and runtime polymorphism. We can perform polymorphism in java by method overloading and method overriding. |