Q1. What is an abstract class, and how does it differ from other classes in object-oriented programming?

An abstract class is an object-oriented programming construct that enables developers to create a base or parent class from which other child classes may inherit specific attributes and methods. Unlike regular classes, the members of an abstract class cannot be instantiated and are typically used as templates containing generic implementation details for use by its derived subclasses.

Q3. How do you define a programming language as dynamic rather than static?

A programming language is said to be dynamic when a program can be modified during its running and can modify other components at runtime, avoiding the need for recompiling or redeploying an application every time changes are made. This eliminates static languages requiring data types of variables to be declared beforehand.

Q5. What are some key features that characterize object-oriented programming?

Key features of Object-Oriented Programming include Encapsulation, Inheritance, and Polymorphism. Benefits include increasing code abstraction modularity, enhanced reusability of classes, and customized user implementation. OOP is widely used in modern software development.

Q6. What is an abstract method, and when would it typically be used during software development projects utilizing OOP principles?

An abstract method is a declaration found only in classes defined as abstract, meaning they cannot be instantiated. These methods have no implementation and must be implemented in subclasses. They are used to enforce a contract or interface in object-oriented systems.

Q8. What is EPAM Systems?

EPAM Systems is a global product development and software engineering solutions provider. It has delivery centers in Europe, the US, Canada, the UK, Germany, and Japan. EPAM provides digital platform engineering and development services for global companies, leveraging technologies like AI, cloud, and data science.

Q9. How does EPAM Systems contribute to product-based companies?

EPAM helps product-based companies by offering tools and processes to solve business challenges and strategize for the future. It improves operational agility, reduces costs, and enhances product reliability using engineering best practices.

Q11. How can real-life examples be incorporated into developing solutions with EPAM Systems?

Real-life examples such as case studies or analogies can demonstrate how similar problems were solved in the past. These examples help in identifying effective strategies and potential pitfalls early in the development process.

Q17. What is a class abstract, and how does it relate to the default constructors of a program/application?

An abstract class serves as a blueprint for subclasses and cannot be instantiated. It may contain both abstract and non-abstract methods. Abstract classes can also define default constructors like regular classes, though abstractness does not affect constructor behavior directly.