

# Object Oriented Programming

## 1. What is OOP ?

Ans: OOP abbreviation hosse Object Oriented Programming jekhane puro program class, object niye gothito. Program e kisu class thakbe jei gulo object er description contain kore. Purpose: security, reusability, maintainability, flexibility.

## 2. What is class ?

Ans: Class is a User-defined data type. Class hosse object er description othoba blueprint bola jai.

## 3. What is Object ?

Ans: Object holo class er instance. Ekta object kisu relevant data member jei gulo k attribute/property bola hoy abong kisu methods niye ghotito.

## 4. Basic concepts of OOP.

- a. Encapsulation
- b. Abstraction
- c. Inheritance
- d. Polymorphism

## 5. What is Encapsulation ?

Ans: Encapsulation dui ta kaj k refer kore \_\_\_\_

- i. Hiding : object er data member access e restriction thakbe e.g private/protected.
- ii. Binding : ekta object related sob data member ar methods gulo k eksathe bind korbe.

## 6. What is Data abstraction ? (Hiding internal complexity, showing functionality)

Ans: Data abstraction OOP ekta important feature. Data abstraction jeta mean kore shei ta holo amra user er kache shudhumatro essential information gulo provide korbo others information e.g implementation, background details aei sob hide korbo. Real Life Example : Amra email send korle shudhu matro Compose ar Send button access kori.

abstract class/interface er maddhome amra abstraction achieve kori.

## 7. What is Inheritance ?

Ans: Jodi ekta class onno ekta class er data members abong methods gulo share korte pare then aei ta k inherit kora bole. Jei class er members share korbe ta k Parent ba base class bole J share korbe ta k child ba derived class bole.

Big Advantage : code reuse kora

## 8. What is Polymorphism ?

Ans: Polymorphism bolte bojhai bohurupita ba more than one form. Example : Overloading, Overriding.

## 9. Explain the term Constructor and Destructor ?

Ans: Constructor muloto object er data member gulo k initialized korar jonno bebohar kora hoy. Constructor name class er name hote hbe and Object create howar sathe sathe constructor internally call hoy. Constructor 3 type er hoy i. Default ii. Parameterized ii. Copy

Object destroy howar sathe sathe destructor call hoy.

10. What do you know about static member variable ?

Ans: Static member variable kono object er sathe belong kore na. Class er sob gulo object er jonno ekta static variable thake. Even object exist na korleo static variable er jonno memory allocate hoy.

12. What is Method Overloading ?

Ans: Ekta class e same naam er kisu fun declare kora. kintu function gulor parameter alada hbe. parameter alada bolte no of parameter ba types of parameter aei sob change hbe.

13. What is Method Overriding ?

Ans: Parent class er ekta function k child class e re-implement kora / (Note : re-implement, not implement).

14. What is early and late binding ? \*\*\*\*\* / runtime polymorphism

Ans: Early binding mane hosse compile time binding. Late binding mane holo Runtime binding. Overloading e early binding hoy. Kintu overriding e late binding hoy.

15. What is Abstract Class ?

Ans: Jodi kono class e abstract method thake then oi class k abstract class bole. Contains both abstract and non-abstract methods,

as well as variable/fields. Abstract class er jonno dui ta rule maintain korte hbe.

i. Abstract class er kono object create kora jabe na / root class bole.

ii. jodi abstract class use korte hoy to child class banaite hbe. ar child class er responsibility hosse sob gulo abstract method k override/implement kora (not re-implement, its implementation).

16. What is Interface ?

Ans: contains only abstract method. no variable/field. every methods by default public. Interface Method e abstract keyword use korar dorkar nai.

sathe sathe child class e override keyword use korar dorkar nai.

17. Difference between abstract class and interface ?

Ans: A class can implement only one abstract class , but can extends more than one interface.

Some Yes/No Question :

1. Is it possible for a class to inherit the constructor of its base class?

Ans : No, a class cannot inherit the constructor of its base class.

2. Whether a static method can use non-static members?

Ans : False.

3. Which OOPS concept is used as a reuse mechanism?

Ans : Inheritance is the OOPS concept that can be used as a reuse mechanism.

4. Which OOPS concept exposes only the necessary information to the calling functions?

Ans : Encapsulation

