**Java OOP Conceptual Questions**

**1.**

C. There is no default constructor defined.

**REASON**: As in Book class we explicitly define Book(String title, String author)constructor, so default constructor is not available. When we try to execute Book b = new Book();it invoke default constructor but as it is not available, it gives compile time error.

**2.**

A. Vehicle starting

**REASON**: As class Car extends Vehicle, so start() will also be available in Car through inheritance. In Car class overloading is occurring as method name start is same but parameter list is different. So car.start(); will execute start() method, hence Vehicle starting will be output.

**3.**

B. 20 — obj2 and obj1 refer to the same object

**REASON**: Both obj1 and obj2 refer to the same object, so obj1.num and obj2.num refer same instance variable.

**4.**

C. NullPointerException

**REASON:** At first s was referring to String “abc”, but while we assign null to s, it is referring to no string object. So for s.length(),it throws NullPointerException.

**5.**

The output will be NullPointerException.

**REASON:** When we try to create Dog object in main method instance control flow will come into picture. First it will identify instance members from parent to child. At this time it will assign default value as per variable datatype. Then it will assign the value of instance variable and execute instance block of Parent. Then it will execute parent constructor and the same process will be for child class. So,while identifying instance var fromparent to child it will assign null default value to **sound variable.** Then Animal() constructor will be executed and it will call overridden speak() of Dog. And in this method when it try to print **sound.toUpperCase()** itthrows NullPointerException.