Solved Question Paper

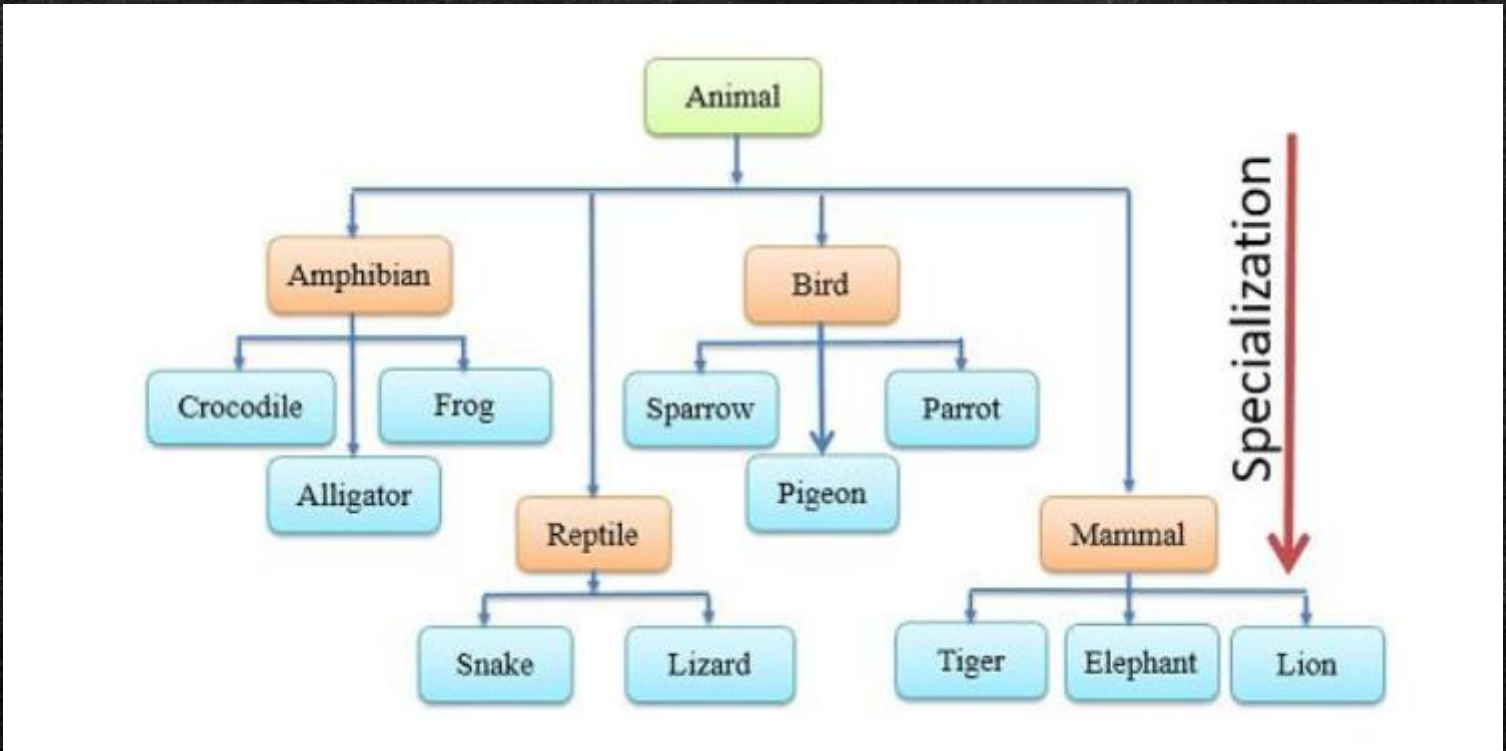
December 2009

1.e)What is serialization ? Why it is not useful when large volume of data needs to be stored ?(5marks)

Specialization is the reverse process of Generalization means creating new sub classes from an existing class. Specialization involves the definition of a new class which inherits all the characteristics of a higher class and adds some new ones, in a subclass. It is a top-down design activity. In specialization, we split an entity to form multiple lower level entities. These newly formed lower level entities inherit some features of the higher level entities. It may happen that a higher level entity may not split further and hence, it may not have any lower level entity. Specialization is always applied on a single entity. It increases the size of a schema.

Specialization results in forming the multiple entity from a single entity. It creates new objects based on the difference between the existing ones and have some features of the parents.

Let us discuss an example of specialization. Let us consider entity **Animal**. The entity animal can further be spilt into **amphibian**, **reptiles**, **birds**, **mammals** etc.. Entity amphibian can be further split to **crocodile**, **alligator**, **frog**. The entity reptile splits to **snake**, **lizard**. The entity bird can be split to **sparrow**, **pigeon**, **parrot**. Mammals can be spilt to a **tiger**, **lion**, **elephant**.


Animal
Amphibian
Bird
Crocodile
Frog
Sparrow
Parrot
Alligator
Pigeon
Reptile
Mammal
Specialization
Snake
Lizard
Tiger
Elephant
Lion

2.b)Differentiate between the following with examples :Generalization and Specialization (4marks)

Specialization	Generalization
It is a top-down activity.	It is a bottom-up activity.
Specialization involves the definition of a new class which inherits all the characteristics of a higher class and adds some new ones, in a subclass. OR Specialization is the reverse process of Generalization means creating new sub classes from an existing class.	Generalization extracts the common features from a collection of classes, and placing them higher in the inheritance hierarchy, in a super class. OR The process of extracting common characteristics from two or more classes and combining them into a generalized superclass, is called Generalization. Generalization is represented by a triangle followed by a line.
The higher level entity may not have lower level entities.	The higher level entity must have lower level entities.
Specialization increases the size of a schema.	Generalization reduces the size of a schema.
Specialization is applied on a single entity.	Generalization entities on group of entities.

Specialization results in forming the multiple entity from a single entity.	Generalization results in forming a single entity from multiple entities. Generalization clubs all the entities that share some common properties to form a new entity.
Creates new objects based on the difference between the existing ones and have some features of the parents.	Takes all the information that have universal nature within the entities and then forms a new entity.
Animal example	Furniture example