1.Given an entity named **Television,** identify its attributes and explain how will you do Abstraction?

If you have seen important TV machine, TV connections and TV color tube is hidden inside the TV case which is not been exposed for viewers like us and exposed only necessary things of a TV like TV Channel keys, TV volume keys, ON/OFF switch, Cable Switch and TV remote control for viewers to use it. This means TV machine, TV connections and TV color tube is an unwanted data and not needed for viewers to see is been hidden from outside the world

The main purpose of abstraction is displaying the essential details to the user and hiding the unnecessary information from user.

2.Given an entity named **Hospital,** explain Encapsulation with respect to it.

Encapsulation can be explained by considering an example of Hospital. In hospital there are many staff like doctors, nurses, therapists ,technicians, clerical staff, pharmacy staff etc. Each staff will perform different task . For example Nurses arguably spend the most time with patients. They monitor and observe patients around the clock.  There are respiratory therapists, speech therapists, physical therapists, and occupational therapists. They focus on skills and function: How can we help this patient walk? How can we help this patient talk with less difficulty? ..etc

These staffs perform different tasks but are encapsulated inside a single unit called hospital which solves the people health issue.

3.Given an entity named **Traffic Signal,** explain Polymorphism with respect to it.

Polymorphism in OOPs is  an essential concept of every object-oriented programming language. An object or reference basically can take multiple forms in different instances. As the word suggests, ‘poly’ means ‘many’ and ‘morph’ points at ‘forms’; thus, polymorphism as a whole would mean ‘a property of having many forms. Polymorphism can be explained by taking an example of traffic signal device which displays the different colours red, yellow, green. Red signal to stop , yellow signal to slow down and be ready to stop, and green signal to go . A single device performing three different task is an example of polymorphism.

4.Given an entity named **Broad Band Connection,** explain inheritance with respect to it.

Inheritance in Java can be defined as a technique or process in which one object of a class acquires the behaviour and properties of another object. This is done by inheriting the class or establishing a relationship between classes. For example Broad band connection is a parent class and its types are child classes that are Digital Subscriber Line (DSL), [Cable Modem](https://www.fcc.gov/general/types-broadband-connections#cable), [Fibber](https://www.fcc.gov/general/types-broadband-connections#fiber) , [Wireless](https://www.fcc.gov/general/types-broadband-connections#wireless) ,[Satellite](https://www.fcc.gov/general/types-broadband-connections#satellite), [Broadband over Powerlines (BPL)](https://www.fcc.gov/general/types-broadband-connections#bpl).These child classes inherit the properties and behaviour of parent class in order to establish a connection .

5.Given an entity named **Mobile Phone,** identify its static & dynamic attributes.

Static attributes cannot be modified or removed. Dynamic attributes allow you to modify the attributes .Consider an example of Mobile phone. In which we can not change the operating system so it is an example of static attribute. Wallpaper is an example of dynamic attribute .Some other examples of dynamic attributes are Simard , memory card, apps, password, brightness. Etc. Some other example of static attributes are hardware’s, built in applications ,speakers, Internal RAM and ROM.