We have discussed this far that 'disability' is only limited to the visible impairments and the experience of disability and exclusion depends largely on the environments, societal interaction norms and the available options for accessing basic needs and rights - In RPWD act 2016 (The latest disability act in India) blood disorders such as Haemophilia and Thalassemia are considered as disabilities - explain why they should be rightly categorised so [5]

The assertion that "disability" is limited only to visible impairments contradicts the essence of the word. According to WHO, disability has three different categories, Impairment (i.e., not necessarily visible, Activity limitation, Restrictions on participation.

In the RPWD Act 2016, Thalassemia and Haemophilia are considered disabilities. These conditions do not fall under "visible" disorders but seriously affect the daily life functioning of people suffering from them and therefore limiting activity and restrictions on participation.

Fifty million carriers of Thalassemia and more than 12,000 new children with Thalassemia are born every year. One in 7,500 live births and approximately 17,000 males in the United States has Haemophilia. All races and socioeconomic groups are equally affected. People suffering from these conditions have a varied range of daily life problems. They need reintroduction of blood/factors to survive/prevent complications; they need repeated shots for examinations and an infusion of drugs or blood. They have a higher incidence of infections, inflammation, and painful episodes. Even routine activities require micro-planning according to their health status, next hospital visit, or sudden crisis. Their lifestyle is severely restricted, and several activities are curtailed, which affects their whole family. Their mental health also gets affected.

Imagine, you have a friend with speech and hearing disability - i.e., she cannot produce clear speech and cannot hear. Now she expressed you her interest to learn driving and commute independently - i. do you think it is ok to let people with speech and hearing disability drive? ii. As an engineer suggest her some technical solutions to help her achieve her goal. [marks 2+4=6] *

Yes, I think that hearing and speech impairment should not be why someone does not drive a car. But, we also need to consider the safety of a person and others on the road. For that, we can take some appropriate measures to prevent unwanted incidents from happening.

Here are some technical solutions that could help her drive her car safely:

• Since she can see clearly, the only problem here is the region where she cannot see, i.e., backward and partially sideways. So we can put a device to indicate the direction of sound(horn) from the vehicles around the car.

• Use large rear-view mirrors to see clearly.

• There are many collision avoidance systems already developed in the market that could be effective in such cases.

How can we make online education inclusive and accessible to students with disabilities - choose one disability that you want to address and suggest technical intervention for doing so. (be creative and imaginative, the classroom not necessarily be restricted just to a meeting room running on the laptop screen) [marks 2+4 =6] *

Online education could become more inclusive and accessible for students with disabilities by changing curriculum & teaching strategies, by being more empathetic, observant & involved, using assistive tools, teaching aids, and technology.

One of the biggest obstacles with online learning is if the person does not possess the ability to hear. View only slides on-screen without cursor movement (as with most online classes) is very restrictive for such persons. Much of the understanding of the teaching depends on the ability to hear the teacher. Thus, the following technological interventions can be considered:

● Conducting a separate Q/A session with typed Q&A. Currently, even if participants ask questions in the chat, the teacher still answers through the voice.

● Using simulation and animation to explain concepts better and get more detailed notes with detailed descriptions.

● Adding a caption to the video/live class. Although the accuracy is low, it is still better than having a wholly muted experience.

● Automation of the learning process - we can introduce an interactive platform to learn concepts, which can be accessed by the students regardless of the teacher's availability. Instead of stuffing a bunch of text into slides, it can be presented neatly on a web platform with interactive user functions (thought experiment, short questions, visual video, etc.). It will allow students to access this information at their own pace and can be used and also pleasant for the hearing impaired.

What is the right based model of disability is desirable over all other types of models of disability earlier? [marks 3] *

The correct model of disability states the following:

● All people, regardless of their disability, have certain inalienable rights.

● Everyone deserves respect and has human and legal rights protected by law.

● It is illegal to discriminate against people with disabilities.

This model is desirable because people with disabilities developed it to achieve greater equality levels for people with disabilities around the world. This model explains the steps that governments worldwide must take to support, promote and protect the rights of people with disabilities.