

Getting Future Ready

(Summary of the chapter)

Introduction: We are very well aware that the advances in science and technology have made life faster, easier and more convenient. So, here is a quick look at some of the latest technological offerings and a sneak peek into what the future holds for us. We have three parts in this chapter.

- ❖ Self driving cars
- ❖ Human robots
- ❖ A ticket to space

Self driving cars:

- A self driving or autonomous car is a vehicle that can drive itself all the time, in any place, under any condition and without any human intervention.
- They have several in-built systems and software that are programmed to ‘sense’ the environment and operate safely on the road.
- It has technology that allows it to steer the wheel, apply the brakes, park the vehicle, judge distance between vehicles, interpret traffic signals and so on.
- In short, driverless cars do the job of driving, navigating, following rules and acting on reflexes while on the road.

Benefits of self driving vehicles.

- ❖ Fewer accidents
- ❖ Decreases traffic congestion
- ❖ Lower fuel consumption
- ❖ Improve mobility for children, elderly and the disabled

Human robots:

- A humanoid robot is a robot with its overall appearance based on that of the human body. In general, humanoid robots have a torso with a head, two arms and two legs.
- There are many forms of Artificial Intelligence (AI) but humanoid robots are one of the most popular forms.
- The major aim of AI for humanoids was for research purpose.
- Now they are being created to carry out different human tasks and occupy different roles in the employment sector like receptionist, personal assistant etc.

Now we are going to see *Who is Sophia?*

- Sophia is a ‘Social humanoid robot’ developed by Hanson Robotics.
- She was activated on 14th February 2016.

- On 25th October she was granted Saudi Arabian Citizenship, making her the first humanoid robot ever to have a nationality.
- She is capable of making up to 50 facial expressions.
- She could identify faces and voices, maintain eye contact and understand human speech.
- She was designed by David Hanson as a companion for the elderly in nursing homes and in public places.
- She is media favourite for having given several interviews.
- She has interest in business.
- Her skin is made of Frubber.

A ticket to space

Space tourism

- Space tourism is a human travel for recreational purposes.
- There are different types of space tourism including orbital, suborbital and lunar space tourism.
- In December 1990, a Japanese TV Journalist Toyohiro Akiyama went into space.
- First space tourist was Dennis Tito, a US engineer and businessman.
- Between 2001 and 2009 six more people bought a passage to space.
- Civilian space programmes offered zero – gravity spaceflights and short duration space walks.

Exercises (exercises that are given below should be done in your note book)

Difficult words and their meanings (The exercises given below should be done in the fair copy)

Intervention	interference
In-built	innate
Gauge	measure or calculate
Acting on reflexes	responding naturally and quickly
Varying	changing
Humanoids	machines that look and behave like human beings
Gesture	signs
Frubber	an elastic form of rubber invented by Hanson Robotics
Computer algorithms	the method used by a computer to solve a problem step by step
Process	here, understand
Conceptualized by	here, originally designed by
Functional humanoids	robots that look like humans and have a special purpose
Avid	passionate, keen
Intergalactic fantasies	here, imaginary travels between galaxies
Commercial	business- related

Amateur job	a person, who takes part in an activity for pleasure not as a job
Breach	break (here, get through)
Facilitate	make possible
Exploration	travelling around
Affordable	reasonably priced

Self driving cars

True statements are:

- An autonomous car
- Can steer the wheel, apply the brakes and park itself
- Can help old and differently abled people move around
- Has several in-built devices and software for driving and navigating
- Functions like human drivers by anticipating and responding to traffic
- Has in-built cameras that see the road and navigate accordingly

Human robots

Tick the correct options

1. Sophia is called humanoid because
Ans. She can mimic human actions.
2. Hanson Robotics originally designed Sophia to
Ans. Help the elderly and the public
3. Sophia's popularity indicates that
Ans. There will be more humanoids in future

A ticket to space

Complete the table about the differences between an astronaut and a space tourist.

Astronaut

- Explores outer space for study or to gather information
- Is a professional
- Requires special study and undergoes extensive training
- Always goes in a chosen group

Space tourist

- Goes into space on his way money
- Goes into space for fun and pleasure

- Needs only a minimum amount of specific training
- May travel alone or in a group

State whether True or False

- | | |
|---|---|
| 1. Modern technology is very affordable. | F |
| 2. Technology could become more accessible. | T |
| 3. Advances in technology will make machines better than humans. | F |
| 4. Cutting – edge technology will impact all aspects of human life. | T |
| 5. Modern technology is useful only to certain kinds of people. | F |
| 6. Technology will change the way humans live and travel. | T |
| 7. Modern technology is truly revolutionary. | T |
| 8. Futuristic technology does not have any disadvantages. | F |

Answer these questions.

1. What makes driverless car safer than a car driven by a person?
Ans. A driverless car has special in-built systems and software that are programmed to ‘sense’ the environment and operate safely on the road. Such a car can ‘see’, ‘feel’, ‘sense’ and ‘monitor’, which can help it reduce the number of traffic accidents. It is expected to drive, navigate and act on reflexes very accurately.
2. List all the features that make Sophia a humanoid.
Ans. Sophia can display more than fifty facial expressions, imitate several human gestures and hold a simple conversation. She has functional legs too. The use of frubber gives Sophia’s face a life – like appearance. Artificial Intelligence allows her to recognize faces and voices, maintain eye contact and process human speech.
3. What are the signs that space tourism is gaining popularity?
Ans. Between 1990 and 2009, eight people went into space as ‘tourist’. Several space tourism companies have been formed since then, with an aim to facilitate private space exploration.

Decoding words

1. *Driverless cars with varying levels of autonomy*.....
 - a. In what ways can cars be self – governing?
Ans. A driverless car is self – governing because it can drive, navigate, follow traffic and act on reflexes without any human intervention. It can do so using in – built systems and software that are programmed to ‘sense’ the environment and operate on the road.
 - b. What does *varying levels of autonomy* mean?
Ans. ‘Varying levels of autonomy’ means that driverless cars will have different levels of self- sufficiency i.e. one car may need absolutely no human intervention whereas another car may need a little supervision and so on.
2. *The use of frubber gives Sophia’s face a life – like appearance.*

a. What qualities do you think frubber has?

Ans. Frubber could be like a mix of clay and sponge which is soft and flexible. It can be stretched into any shape or form, it looks like human skin in colour and can move like real skin too.

3.*two individuals breached the Earth's atmosphere*....

a. What does breach mean here?

Ans. Here, 'breach' means get through.