

1. Human-Machine Interaction

AI Reboot (Page 9)

1. Intention
2. Selection

AI Quiz

1. d
2. a
3. c

4. (This question was printed incorrectly in the book. Please correct it in your textbook.)

Ques. interfaces work by recognising the touch of the user either by a finger or a stylus.

- a. Touch sensitive
- b. Command line
- c. Voice user
- d. Menu driven

Ans. a

5. b
6. b

Exercise

- A.** 1. False 2. False 3. True 4. True 5. False

- B.** 1. (This question was printed incorrectly in the book. Please correct it in your textbook.)

Ques. In, Ralph Bauer Eckert created Gaming joystick.

Ans. 1967

2. Voice User Interface
3. John Mauchly and John Presper Eckert
4. Edmund Huey
5. Seiko
6. Nintendo Wii

- C.** 1. To perform a dialog between human and a computer system there are three components that are interconnected— Human, Machine and the interface between them. A computer interface or a program establishes interaction between the user and computer. HMI mainly focuses on this computer interface.



2. Intention, Selection, Execution and Evaluation.
3. Command Line Interface (CLI) is a text-based interface that allows to give instructions to a machine in the form of text. On the other hands, Graphical User Interface (GUI) provides icons, button, pictures, etc. on which you can click to perform some action.
4. Ivan Sutherland created the first head mounted display called Sword of Damocles in 1968. It was connected to a computer. The idea behind its creation was to change the perspective image as the user moved his head.
5. In 1967, Ralph Bauer Eckert created Gaming joystick which was used in the SEGA's Arcade game. This was the first gaming joystick with a fire button to steer and shoot missiles into oncoming planes displayed on a screen.

2. Introduction to AI

Reboot (Page 24)

- **Human intelligence:** It aims to adapt to new environment by utilizing combination of different cognitive processes.
- **Artificial Intelligence:** It aims to mimic human behaviour and perform human like actions.

Reboot (Page 27)

A chatbot is an artificial intelligence application that can simulate a conversation or a chat with a user in a natural language through messaging applications, websites, mobile apps or through the telephone.

1. d
2. c
3. b
4. (This question was printed incorrectly in the book. Please correct it in your textbook.)

Ques. Which of the following can be used for voice search?

- a. Cortana
- b. Siri
- c. Alexa
- d. All of these

Ans. d

5. b
6. c
7. c

Exercise

- A.** 1. True 2. False 3. False 4. True

- B.** 1. (This question was printed incorrectly in the book. Please correct it in your textbook.)

Ques. aims to mimic human behaviour and perform human like actions.

Ans. AI



2. (This question was printed incorrectly in the book. Please correct it in your textbook.)

Ques. The term “Internet of Things” was coined by in 1999.

Ans. Kevin Ashton

3. (This question was printed incorrectly in the book. Please correct it in your textbook.)

Ques. A is an artificial intelligence application that can simulate a conversation or a chat with a user.

Ans. Chatbot

4. (This question was printed incorrectly in the book. Please correct it in your textbook.)

Ques. in education has opened new ways for the students to interact with each other and improve their learning capabilities.

Ans. Cloud computing

5. (This question was printed incorrectly in the book. Please correct it in your textbook.)

Ques. use IoT devices to monitor and control the mechanical, electronic systems in public, private, industrial, institutional or residential buildings.

Ans. Smart Buildings

- C. 1. Artificial Intelligence is the ability of a computer program or machine to think and learn. It also makes any machine perform tasks that requires intelligence.
2. Pacman, FIFA

S.No.	Parameter	Human Intelligence	Artificial Intelligence
1.	Nature	It aims to adapt to new environment by utilizing combination of different cognitive processes.	It aims to mimic human behaviour and perform human like actions.
2.	Functioning	Human beings use the computing power, memory and thinking power of their brain.	AI machines rely on data, specific instructions and learnings that are fed into their system.

4. a. **Smart Devices:** These are part of an ecosystem of devices that can communicate with each other, for example, thermostat, surveillance camera, etc.
b. **Smart Healthcare:** This includes a series of devices and programs that can used for patient care and medical purposes, for example, Aarogya setu, Fitness bands, etc.
5. When different types of services are delivered through internet, it is called Cloud Computing. AI integrated with Cloud Computing makes it more powerful.

3. AI in Apps

Δi Quiz

1. c 2. b 3. a 4. b 5. b

Exercise

- A.** 1. False
2. (This question was printed incorrectly in the book. Please correct it in your textbook.)
Ques. Google Map uses AI to analyse the speed of movement of traffic.
Ans. True
3. True 4. True 5. True
- B.** 1. (This question was printed incorrectly in the book. Please correct it in your textbook.)
Ques. Ola is another app, built on AI and machine learning capabilities.
Ans. Ridesharing
2. English Language Speech Assistant
3. Google Maps 4. IBM Watson 5. Kuki
- C.** 1. Popularly known as Bot, a chatbot is a computer program that allows humans to interact with technology using a variety of input methods such as voice, text, gesture and touch.
2. A voice assistant is an application program that understands natural language voice commands and completes tasks for the user. It uses voice recognition, speech synthesis, and natural language processing (NLP) to provide a service through a particular application. Examples are Siri and Alexa.
3. Alexa perform better over the period as it adapts the user's voice, vocabulary and choices.
4. Photo editing is a tedious process. Much time is consumed in removing skin's imperfections, align tone of the sky, etc. AI editor does it easily for its users. AI technology makes the manual tasks simpler and semi-automatic. It not only saves time but give great results.
5. Google Maps and Waze are two examples of navigational apps.

Test Sheet–1

(Based on chapters 1 to 3)

- A.** 1. d 2. c 3. d 4. d 5. c 6. c
7. d 8. b 9. b
- B.** 1. (This question was printed incorrectly in the book. Please correct it in your textbook.)
Ques. In, Ralph Bauer Eckert created Gaming joystick.
Ans. 1967



2. Voice User Interface

3. (This question was printed incorrectly in the book. Please correct it in your textbook.)

Ques. use IoT devices to monitor and control the mechanical, electronic systems in public, private, industrial, institutional or residential buildings.

Ans. Smart buildings

4. (This question was printed incorrectly in the book. Please correct it in your textbook.)

Ques. Alexa is an example of

Ans. voice assistant

5. (This question was printed incorrectly in the book. Please correct it in your textbook.)

Ques. Ola is another app, built on AI and machine learning capabilities.

Ans. Ridesharing

6. Kuki

C. 1. False 2. False 3. True 4. False

5. (This question was printed incorrectly in the book. Please correct it in your textbook.)

Ques. Google Map uses AI to analyse the speed of movement of traffic.

Ans. True

6. True

D. 1. To perform a dialog between human and a computer system there are three components that are interconnected— Human, Machine and the interface between them. A computer interface or a program establishes interaction between the user and computer. HMI mainly focuses on this computer interface.

2. Intention, Selection, Execution and Evaluation.

3. Snapchat and Google Maps

4. Artificial Intelligence is the ability of a computer program or machine to think and learn. It also makes any machine perform tasks that requires intelligence.

5. Google Maps use AI to analyse the speed of movement of traffic. It also takes in the user-reported incidents, such as traffic accidents or road construction, to predict how long it will take the user to reach his destination and uses that information to suggest the fastest route.

6. Uber and Ola



4. Types of Robots

Δi Quiz

1. (This question was printed incorrectly in the book. Please correct it in your textbook.)

Ques. Which type of robots are commonly found in households?

- a. Industrial Robots
- b. Collaborative Robots
- c. Service Robots
- d. Mask detecting Robots

Ans. c

2. b 3. d

4. (This question was printed incorrectly in the book. Please correct it in your textbook.)

Ques. Rotimatic is an example of robot.

- a. Kitchen
- b. Space and research
- c. Education
- d. Healthcare

Ans. a

5. (This question was printed incorrectly in the book. Please correct it in your textbook.)

Ques. can perform with greater speed and accuracy.

- a. Humans
- b. Robots
- c. Both a and b
- d. None of these

Ans. b

Exercise

- A.** 1. True 2. False

3. (This question was printed incorrectly in the book. Please correct it in your textbook.)

Ques. Robots cannot help in surgical operations.

Ans. False

4. False

5. True

- B.** 1. (This question was printed incorrectly in the book. Please correct it in your textbook.)

Ques. Georgia Tech's robot can now compose and sing its own music.

Ans. Marimba-playing

2. (This question was printed incorrectly in the book. Please correct it in your textbook.)

Ques. Ironing and kitchen robots are examples of robots.

Ans. Service



3. Furby 4. Humanoid 5. Robots

- C.** 1. Industrial robots, Collaborative robots and Service robots.
2. A collaborative robot, or Cobot, is a type of robot intended to physically interact with humans in a shared workspace. These robots are supposed to work along with the humans and provide safety and flexibility.
3. Industrial robot is a robot system which used for manufacturing purposes. These robots are automated, programmable and capable of movement in three or more axes.
4. These robots either allow surgical operations to be carried out with better precision than an unaided human surgeon or allow remote surgery where a human surgeon is not physically present with the patient.
5. Robots are sent to space because sending a robot in space is much cheaper than sending a human. They don't need to eat or sleep. Hence, they can work for long hours and they can survive in space for many years and can be left out there for further research.

5. Myths and Facts of AI

AI Reboot (Page 71)

Design, entertainment, military training, remote working etc.

AI Quiz

1. a 2. c 3. b 4. c

Exercise

- A.** 1. False 2. True 3. True 4. False 5. True

- B.** 1. AR

2. (This question was printed incorrectly in the book. Please correct it in your textbook.)

Ques. The advances in technology is blurring the boundaries between reality and

Ans. illusion

3. Internet of Things 4. Google Cardboard or HTC Vive 5. 3D

- C.** 1. Following are the two myths about AI:

- a. AI is going to take away jobs.
b. AI is smarter than people.

2. MR stands for Mixed Reality. It combines elements of both AR and VR, real world and digital object. Microsoft HoloLens is one of the most notable MR apparatuses.



3. VR is abbreviation of Virtual Reality. It is used extensively in the gaming world to give user the feeling of real in the digital world. In VR, everything is created digitally or it can also include 360-degree footages of natural environments or a mix of both. You experience something, without really experiencing it.
4. IoT stands for Internet of Things. It describes the interconnected objects or physical things that are embedded with sensors, software and other technologies to exchange data with other devices and systems over internet.
5. Three-dimensional (3D) printing works by laying down thin layers of material in the form of liquid or powdered plastic, metal or cement, and then fusing the layers together.

Test Sheet–2

(Based on chapters 4 & 5)

- A.** 1. c 2. b 3. d 4. a 5. c 6. b
 7. c 8. a 9. c
- B.** 1. (This question was printed incorrectly in the book. Please correct it in your textbook.)
Ques. Georgia Tech's robot can now compose and sing its own music.
Ans. Marimba-playing
2. Ironing robots and kitchen robots 3. Furby
4. Augmented Reality
5. (This question was printed incorrectly in the book. Please correct it in your textbook.)
Ques. The advances in technology is blurring the boundaries between reality and
Ans. Illusion
6. IoT
- C.** 1. True 2. False
3. (This question was printed incorrectly in the book. Please correct it in your textbook.)
Ques. Robots cannot help in surgical operations.
Ans. False
4. False 5. True 6. True
- D.** 1. (This question was printed incorrectly in the book. Please correct it in your textbook.)
Ques. How Robots are useful in the Hospital industries?
Ans. Robots either allow surgical operations to be carried out with better precision than an unaided human surgeon or allow remote surgery where a human surgeon is not physically present with the patient.



2. A collaborative robot, or Cobot, is a type of robot intended to physically interact with humans in a shared workspace. These robots are supposed to work along with the humans and provide safety and flexibility.
3. Industrial robot is a robot system which used for manufacturing purposes. These robots are automated, programmable and capable of movement in three or more axes.
4. Following are the two myths about AI:
 - a. AI is going to take away jobs.
 - b. AI is smarter than people.
5. Mix Reality combines elements of both AR and VR, real world and digital object. Microsoft HoloLens is one of the most notable MR apparatuses.
6. Virtual Reality is used extensively in the gaming world to give user the feeling of real in the digital world. In VR, everything is created digitally or it can also include 360-degree footages of natural environments or a mix of both. You experience something, without really experiencing it.

