

COMPUTER SCIENCE – 10

UNIT 07

APPLICATIONS OF AI

Unique Notes

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Unit 07 — Applications of AI

Introduction

Computer Science is not only about using computers. It is about solving problems and making life easier for people. Artificial Intelligence (AI) is an important part of Computer Science. AI helps computers understand human language through Natural Language Processing (NLP), which is used in chatbots and translation apps. Speech technology is used in voice assistants like Alexa and Google Assistant. AI also helps to recommend videos, music, or products people like. Self-driving cars and robots use AI to work safely in different places. It is important to use AI carefully and ethically so it is fair and safe for everyone.

Q.1 What is AI and describe its impact on jobs and work.

★ **Key Points:** Artificial Intelligence (AI) | Impact of AI

1. Introduction to Artificial Intelligence (AI)

Artificial Intelligence (AI) is a modern field of computer science that teaches machines how to "think" and "act" like humans. It helps computers solve problems, learn from data, and make smart decisions without being told what to do step by step. AI is used in many areas such as mobile apps, online shopping, health care, and transportation. For example, when you use a voice assistant like Google assistant or a chatbot on a website, you are using AI. It helps doctors find diseases, drivers use maps, and students find answers online.

2. Impact of AI on Jobs and Work

AI is changing the way people work in many fields. In factories, robots and machines now do jobs that were once done by human experts. These machines can work faster, longer, and with fewer mistakes. At the same time, AI is also creating new kinds of jobs. People are needed to design, test, and manage AI systems. Jobs like data scientist, AI developer, and machine learning engineer are growing fast.

DID YOU KNOW?

Q. What can Artificial Intelligence (AI) do like a human?

Ans. AI can write stories, solve math problems, and create art just like a human.

Q.2 How does data collection help AI systems and applications?

★ **Key Points:** Data and AI | Automatic Data Collection

1. Data and AI

Data is the most important part of AI. AI learns from data, just like a student learns by reading books. If the data is large and correct, the AI system becomes smarter and gives better results.

2. Automatic Data Collection

Automatic data collection means gathering information without needing a person to enter it by hand. Many devices and applications can collect data on their own. For example, mobile phones collect location, usage, and search history automatically. Online websites also collect user clicks, views, and preferences. With automatic collection, AI can adjust and respond to user needs quickly. It also saves time, reduces errors, and allows systems to work without needing human input all the time.

DID YOU KNOW?

Q. What can happen if an AI system is trained with poor-quality data?

Ans. An AI trained with poor-quality data can give wrong answers or make unfair decisions.

Q.3 What is meant by quantity and quality of data in Artificial Intelligence (AI)? OR Describe the types of data in AI.

★ **Key Points:** Quantity | Quality

1. Quantity

Quantity refers to how much data is available. When an AI system receives a large number of examples, it becomes more familiar with different situations. For instance, if a machine sees many different images or texts, it becomes better at understanding new ones.

2. Quality

Quality means how useful and correct the data is. If the data has mistaken, missing values, or confusing labels, the AI may learn the wrong things. Therefore, both the amount and the accuracy of data play a big role in building strong AI systems.

DID YOU KNOW?

Q. Does AI require both large amounts of data and high-quality data to learn effectively?

Ans. Yes, AI performs better when it has access to both large datasets (quantity) and accurate, high-quality data (quality).

Q.4 Explain how Artificial Intelligence is used in daily life. In your answer, describe the role of Natural Language Processing, chatbots, robotics, speech technology, recommendation systems, and autonomous vehicles.

★ **Key Points:** *Description of NLP | Use of Robotics | Use of Speech Technology | Recommendation System | Self-Driving Vehicles*

AI is now used in many areas of daily life. It helps businesses, schools, hospitals, and even homes become smarter and more efficient. These are real uses of AI that make work easier and faster.

1. Natural Language Processing (NLP)

NLP is a part of AI that helps computers understand human language. It allows machines to read text, listen to speech, and give answers in a way people can understand. For example, when someone types a question in a search bar or talks to a voice assistant, NLP helps the AI system understand and reply correctly. In customer service, it helps answer common questions without human help.

DID YOU KNOW?

Q. How do chatbots on websites manage to answer user questions 24/7?

Ans. Chatbots on websites can answer questions 24/7 because they use Natural Language Processing (NLP). NLP allows the chatbot to understand, interpret, and respond to human language automatically without needing a human operator.

2. Robotics in Everyday Life

Robotics is an important part of AI that involves machines called robots designed to perform tasks like humans. They can lift heavy items, assist in surgeries, and clean floors intelligently. Robots can also help old or disabled people with daily tasks. They work with high accuracy and do not get tired.

3. Speech Technology and Voice Control

Speech technology is a type of AI that enables computers to understand spoken words and convert voice into text. It allows machines to respond to users through voice commands. Voice assistants in phones and smart devices use this technology. In customer service, it answers calls and guides users automatically. In smart homes, people can control lights and devices by speaking. In healthcare, doctors can record notes using voice instead of typing. Speech technology makes using machines easier and faster through voice commands.

4. Recommendation Systems

Recommendation systems are a type of AI that suggest items based on users' likes and past actions. They analyze what a person has viewed, searched, or selected and then recommend similar options. For example, on online shopping websites, if someone views school bags, the system may suggest other bags or related items. In education, websites can recommend useful videos or articles based on a student's learning history. These systems improve user experience by providing personalized and helpful content. However, they must be used carefully to protect privacy and avoid repeating the same type of content.

5. Autonomous Vehicles (Self-driving Vehicles)

Autonomous vehicles, also known as self-driving vehicles, can move on roads without a human driver. They use AI with sensors, cameras, radars, and the Global Positioning System (GPS) to understand their surroundings and detect traffic lights, road signs, other vehicles, and people on foot. These technologies allow the car to speed up, slow down, turn, and stop safely. Self-driving vehicles can reduce road accidents caused by human errors like distraction or tiredness and help people who cannot drive, such as the elderly or disabled. However, they still face challenges, including safety testing, possible job loss for drivers, and the need for strong traffic laws. Questions about responsibility in case of accidents also remain, so engineers, governments, and companies are working together to improve safety and create proper rules.

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Q.5 What are the Benefits, Limitations and Challenges of AI applications?

★ **Key Points:** Merits/Benefits of AI | Demerits/Limitations of AI

1. Benefits of AI Applications / Merits of AI Applications

- Help people complete tasks faster and more easily
- Manage files and answer questions in offices
- Support smart learning apps in education that adjust to student levels
- Save time and help people focus on important decisions
- Help businesses with planning and sales prediction
- Improve customer service
- Reduce human errors
- Increase efficiency in fields like agriculture, banking, and transport etc.

Limitations and Challenges of AI Applications / Demerits of AI Applications

- AI systems are not always correct
- Low-quality or biased data can cause wrong results
- Chatbots may misunderstand unclear language
- Small AI mistakes can cause big problems in areas like law and healthcare
- Careful testing is required
- AI may replace human workers in jobs like customer service, data entry, and clerical work
- Some AI systems may not make fair decisions if not designed carefully

DID YOU KNOW?

Q. Why AI systems can make mistakes?

Ans. AI systems can make mistakes if they are trained on incomplete or biased data.

Q.6 What are the ethical, fairness, and social considerations that should be addressed when developing and using AI systems?

★ **Key Points:** Ethics in AI | Bias in AI | Fairness & Transparency in AI | Social Equity

1. Ethics, Fairness, and Social Impact of AI

Ethics in AI means using AI in a way that is fair, honest, and safe for everyone. Since AI can make decisions, it is important to make sure those decisions do not hurt people or treat anyone unfairly. For example, if an AI system gives better service to one group of people and ignores others, it is not fair. AI should be developed with care, keeping in mind fairness, safety, and respect for human rights.

DID YOU KNOW?

Q. Why can AI be unfair, and what should developers do about it?

Ans. AI can be unfair if not designed properly, so developers must carefully consider what is right and wrong when creating AI systems.

2. Bias in AI and Algorithms

Bias in AI happens when the system gives unfair results because of the data it was trained on. If the data only represents one group of people, the AI may not understand or treat other groups fairly. For example, a face

recognition tool may not work well for all skin colors if it was trained mostly on images of only one type. This shows that data should include different people, languages, and situations. Removing bias is a big step toward making AI more fair and helpful for all.

3. Fairness and Transparency in AI

a. Fairness in AI means that the system should treat all users equally, no matter their race, gender, age, or background. This is important in systems that make decisions about input Human Rights school admissions, job interviews, or legal cases. To ensure fairness, AI must be trained on data that includes all related types of people and situations.

b. Transparency means that people should understand how an AI system works and why it made a certain decision. If an AI rejects a loan application or selects a student, users have the right to know what rules or steps the system followed. Transparency helps avoid mistakes and gives confidence that the system is working honestly.

4. Privacy, Data Security and Surveillance

a. Privacy means keeping personal information safe and not sharing it without permission. Many AI systems collect data from users, such as names, addresses, location, or search history. If this data is not protected, it can be stolen or misused.

b. Data security means protecting information from hackers, viruses, or other attacks. AI systems must use strong security methods to keep user data safe.

c. Surveillance is when systems or cameras watch people's actions. While it can help in safety, it must be used carefully. Watching people all the time without reason can harm freedom and privacy.

5. AI and Social Equity (Fairness in Society)

AI should be used in a way that helps all people equally, including the poor, disabled, and those living in remote areas. Sometimes, new technologies like AI are only available to rich or educated groups, while others are left behind. This creates a gap between people. To support fairness in society, AI tools should be designed so everyone can benefit, not just a few.

Q.7 What responsibilities do AI designers have, and how does following ethics guide the creation and use of AI systems?

★ **Key Points:** *Responsibilities of AI Designers | Ethics in AI*

1. Responsibility of AI Designers

AI systems do not make rules by themselves; they follow instructions created by human designers. This means the people who build AI have a big responsibility to make sure their systems are fair, safe, and helpful for society. If an AI system makes a wrong decision or treats someone unfairly, the mistake often comes from the way it was designed. That is why AI designers must think carefully about how their tools will affect people in real life. Making AI that is helpful and trustworthy is not just a technical job it is a moral duty.

2. Following Ethics in AI

- Ethics in AI means doing what is right and fair when creating or using AI systems.
- AI designers must ensure their systems do not hurt people, spread false information, or treat anyone unfairly.
- Ethics help designers make decisions that protect users and support justice.
- These ethics includes being honest about how the AI system works.
- Users should know what data is being used and how decisions are made.
- Ethical design builds trust between people and technology.

Topic Wise Short Questions (Additional)

Introduction to Artificial Intelligence (AI)

Q.1 What is Computer Science?

Ans. Computer Science is not just about using computers. It is about finding solutions to problems and making life easier for people.

Q.2 Define Artificial Intelligence (AI).

Ans. Artificial Intelligence is a big part of Computer Science. It helps computers do tasks in a smart and efficient way.

Q.3 How does AI understand human language?

Ans. AI uses Natural Language Processing (NLP) to understand human language. This helps in chatbots and translation apps.

Q.4 What is the use of speech technology in AI?

Ans. Speech technology is used in voice assistants like Alexa and Google Assistant. It lets computers listen to and respond to voices.

Q.5 How does AI help in recommendations?

Ans. AI helps suggest videos, music, or products. These suggestions are based on what people enjoy.

Q.6 How is AI used in self-driving cars and robots?

Ans. Self-driving cars and robots use AI to work safely. AI helps them function in different environments.

Q.7 Why is ethical use of AI important?

Ans. Using AI ethically is important to ensure it is fair and safe for everyone.

Data and AI

Q.8 Why is data important for Artificial Intelligence (AI)?

Ans. Data is the most important part of AI. AI learns from data, and having large and correct data helps AI systems become smarter and give better results.

Q.9 How does AI learn from data?

Ans. AI learns from data like a student learns by reading books. AI systems depend on data to learn and improve.

Q.10 How does AI impact repetitive jobs?

Ans. AI automates repetitive tasks (e.g., factory work) but also creates new roles such as AI developers and data scientists.

Q.11 What happens when AI receives data from different sources?

Ans. When AI gets a lot of information from different places, it can find patterns and learn to make better choices.

Q.12 What is meant by automatic data collection?

Ans. Automatic data collection means gathering information without a person typing it by hand. Devices and apps collect data on their own.

Q.13 Give examples of automatic data collection.

Ans. Automatic data collection includes mobile phones tracking location, usage, and search history, as well as online websites recording user clicks, views, and preferences.

Q.14 How does automatic data collection help AI systems?

Ans. Automatic data collection allows AI systems to respond to user needs quickly, while also saving time and reducing errors.

Q.15 What is meant by quality of data in AI?

Ans. Quality means how useful and correct the data is. Incorrect or missing data can cause AI to learn the wrong things.

Q.16 What are the key capabilities of AI?

Ans. Key capabilities of AI are given below: • Solves problems efficiently • Learns from data • Makes intelligent decisions • Works without explicit, step-by-step instructions

Q.17 Why is data quality important for AI systems?

Ans. If data has mistakes, missing values, or confusing labels, AI may learn incorrectly. Accurate data helps build strong AI systems.

Q.18 What is meant by quantity of data in AI?

Ans. Quantity refers to how much data is available. Large amounts of data help AI understand different situations better.

Q.19 How does having more data improve AI performance?

Ans. When an AI system receives many examples, it becomes more familiar with situations. This helps it understand new images or texts better.

Q.20 Where are real-world applications of AI used?

Ans. AI is used in businesses, schools, hospitals, and homes. These applications make work easier and faster.

Real-World Applications of AI

Q.21 What is Natural Language Processing (NLP)?

Ans. NLP is a part of AI that helps computers understand human language. It allows machines to read text, listen to speech, and give clear answers.

Q.22 How is NLP used in daily life?

Ans. NLP is used in search bars, voice assistants, and customer service chatbots. It helps answer common questions without needing a person.

Q.23 What is Robotics?

Ans. Robotics is a field of Artificial Intelligence that involves designing and using machines called robots. These robots can perform tasks such as lifting heavy objects, cleaning floors, and assisting in surgeries.

Q.24 How do robots help humans in daily activities?

Ans. Robots help old or disabled people with simple tasks. They are very accurate and never get tired.

Q.25 What is speech technology?

Ans. Speech technology is a type of AI that allows computers to understand spoken words. It converts voice into text and gives responses.

Q.26 Where is speech technology commonly used?

Ans. It is used in voice assistants, customer service calls, smart homes, and healthcare. People can control devices or take notes by speaking.

Q.27 What are recommendation systems?

Ans. Recommendation systems are a part of AI that suggests content based on user likes and past actions. They make content more personal and helpful.

Q.28 Give some examples of recommendation systems.

Ans. Online shopping websites suggest related products. Educational websites recommend videos or articles based on learning history.

Q.29 What are autonomous or self-driving vehicles?

Ans. Autonomous vehicles are vehicles that move without a human driver. They use AI to understand the surroundings and make decisions.

Q.30 How do self-driving cars work safely?

Ans. They use sensors, cameras, GPS, and radars to detect roads and traffic. AI helps them speed up, slow down, turn, and stop safely.

Benefits and Challenges of AI Applications**Q.31 Write the benefits of AI applications?**

Ans. AI helps complete tasks faster, reduces errors, saves time, and improves efficiency. It supports education, business planning, and customer service.

Q.32 What are the limitations and challenges of AI applications?

Ans. AI systems are not always correct and may give wrong results due to poor data. AI can also replace human workers and may make unfair decisions.

Ethics, Fairness, and Social Impact of AI**Q.33 What is meant by ethics in AI?**

Ans. Ethics in AI means using AI in a fair, honest, and safe way for everyone. It ensures AI decisions do not harm people or treat them unfairly.

Q.34 Why is it important to use AI carefully?

Ans. AI can make decisions, so it's important to ensure these decisions don't harm people. AI should be developed with care, keeping fairness, safety, and human rights in mind.

Q.35 Why can AI be unfair, and what should developers do about it?

Ans. AI can be unfair if not designed properly. Developers must carefully consider what is right and wrong when creating AI systems.

Q.36 What is bias in AI and algorithms?

Ans. Bias in AI happens when the system gives unfair results because of the data it was trained on. If data represents only one group, other groups may not be treated fairly.

Q.37 Give an example of bias in AI.

Ans. A face recognition tool may not work well for all skin colors if it was trained mostly on images of only one type.

Q.38 How can bias in AI be reduced?

Ans. Data should include different people, languages, and situations. Removing bias is a big step toward making AI more fair and helpful for all.

Q.39 What does fairness in AI mean?

Ans. Fairness in AI means the system should treat all users equally, no matter their race, gender, age, or background.

Q.40 Why is fairness important in decision-making systems?

Ans. Fairness is important in systems that make decisions about school admissions, job interviews, or legal cases.

Q.41 What is transparency in AI?

Ans. Transparency means people should understand how an AI system works and why it made a certain decision.

Q.42 What right do users have when AI makes a decision about them?

Ans. If an AI rejects a loan application or selects a student, users have the right to know what rules or steps the system followed.

Q.43 What is meant by privacy in AI?

Ans. Privacy means keeping personal information safe and not sharing it without permission.

Q.44 Why is data security important in AI systems?

Ans. Data security means protecting information from hackers, viruses, or other attacks. AI systems must use strong security methods to keep data safe.

Q.45 What is surveillance, and why must it be used carefully?

Ans. Surveillance is when systems or cameras watch people's actions. Watching people all the time without reason can harm freedom and privacy.

Q.46 What is meant by social equity in AI?

Ans. AI should be used in a way that helps all people equally, including the poor, disabled, and those living in remote areas.

Q.47 Difference between fairness and transparency.

Fairness	Transparency
Equal treatment regardless of race, gender, age and background.	It is understandable decision-making process.
Fairness is crucial in systems that make decisions about input human rights, school admissions, job interviews etc.	Transparency helps avoid mistakes and give confidence that the system is working honestly.

Q.48 How can AI create inequality in society?

Ans. AI technologies are only available to rich or educated groups, while others are left behind. This creates a gap between people.

Q.49 How can fairness in society be supported using AI?

Ans. AI systems should be designed and trained using diverse and balanced data so they treat all people equally and benefit everyone, not just a few groups.

Responsibility of AI Designers

Q.50 Who is responsible for AI systems?

Ans. AI systems do not make rules by themselves; they follow instructions created by human designers. This means the people who build AI have a big responsibility to make sure their systems are fair, safe, and helpful for society.

Q.51 Why must AI designers think carefully about their tools?

Ans. If an AI system makes a wrong decision or treats someone unfairly, the mistake often comes from the way it was designed. AI designers must think carefully about how their tools will affect people in real life.

Q.52 What is the moral duty of AI designers?

Ans. The moral duty of AI designers is to create AI systems that are helpful, fair, safe, and trustworthy for all users.

Q.53 What does ethics in AI mean?

Ans. Ethics in AI means doing what is right and fair when creating or using AI systems.

Q.54 How must AI designers ensure their systems behave?

Ans. AI designers must ensure their systems do not hurt people, spread false information, or treat anyone unfairly.

Q.55 How does ethics help AI designers?

Ans. Ethics help designers make decisions that protect users and support justice.

Q.56 What should users know about AI systems?

Ans. Users should know what data is being used and how decisions are made.

Q.57 How does ethical design affect people's trust?

Ans. Ethical design builds trust by keeping systems safe, fair and safeguarding users' privacy.

Topic Wise Multiple Choice Questions (Additional)

Introduction to Artificial Intelligence (AI)

1. Computer Science is mainly concerned with: (a) Using computers only (b) Solving problems and making life easier (c) Playing games (d) Typing documents
2. Artificial Intelligence (AI) is an important part of: (a) Biology (b) Physics (c) Computer science (d) Chemistry
3. AI helps computers understand human language through: (a) Natural Language Processing (NLP) (b) Robotics (c) Speech technology (d) Networking
4. Natural Language Processing (NLP) is used in: (a) Games and videos (b) Chatbots and translation apps (c) Robots only (d) Databases
5. Voice assistants like Alexa and Google Assistant use: (a) Gaming Software (b) Graphics software (c) Computer networks (d) Speech technology
6. AI recommends videos, music, or products based on: (a) Random choice (b) System speed (c) What people like (d) Internet speed
7. Self-driving cars and robots use AI to: (a) work safely in different places (b) Play music (c) Store data (d) Translate languages
8. AI should be used carefully and ethically to ensure it is: (a) Fast and cheap (b) Modern and popular (c) Fair and safe for everyone (d) Automatic
9. Artificial Intelligence teaches machines to: (a) Store files only (b) Think and act like humans (c) Type faster (d) Print documents
10. AI helps computers make smart decisions by: (a) Learning from data (b) Following fixed steps only (c) Using electricity (d) Using hardware
11. AI is used in which of the following areas? (a) Mobile apps (b) Health care (c) Transportation (d) All of these
12. In factories, AI machines now do jobs that were once done by: (a) Students (b) Teachers (c) Human experts (d) Drivers
13. AI machines can work: (a) Slower and shorter (b) Faster, longer, and with fewer mistakes (c) Only at night (d) Only with help
14. Which job is growing due to AI? (a) Clerk (b) Driver (c) Data scientist (d) Typist

Data and AI

15. Data is considered the most important part of AI because: (a) AI works without data (b) AI learns from data (c) Data replaces computers (d) Data stores programs
16. AI learns from data in the same way a student learns by: (a) Watching videos (b) Listening to teachers (c) Reading books (d) Solving problems
17. If the data used in AI is large and correct, the AI system becomes: (a) Slower (b) Smarter (c) Weaker (d) Useless
18. AI systems depend on data mainly to: (a) Store information (b) Learn and improve (c) Print results (d) Connect networks
19. When AI receives information from different sources, it can: (a) Find patterns and make better choices (b) Stop working (c) Delete data (d) reduce memory
20. Automatic data collection means: (a) Entering data by hand (b) Gathering data without human input (c) Deleting information (d) Copying files
21. Which device collects data automatically? (a) Printer (b) Scanner (c) Mobile phone (d) Calculator
22. Online websites collect user data such as: (a) Fingerprints (b) Clicks, views, and preferences (c) Electricity usage (d) handwriting

23. Automatic data collection helps AI systems to: (a) Work slower (b) Depend fully on humans (c) Adjust and respond quickly (d) Stop learning
24. One benefit of automatic data collection is that it: (a) Increases errors (b) Slows down systems (c) Needs more human input (d) Saves time and reduces errors
25. Which of the following quality of data refers to? (a) How much data is stored (b) How useful and correct the data is (c) How fast data is processed (d) How old the data is
26. If data has mistaken or missing values, AI may: (a) Learn correctly (b) Work faster (c) Learn the wrong things (d) stop completely
27. The Quantity of data refers to: (a) Data accuracy (b) data speed (c) Amount of data available (d) Data format
28. When an AI system receives a large number of examples, it becomes: (a) Confused (b) Unfamiliar with situations (c) Slower in learning (d) Better at understanding new ones
29. AI is used in daily life to help: (a) Only businesses (b) Only schools (c) Businesses, schools, hospitals (d) Only factories

Real World Applications of AI

30. Natural Language Processing (NLP) is a part of AI that helps computers to: (a) Store data only (b) Understand human language (c) Control hardware (d) Design robots
31. NLP allows machines to: (a) Read text, listen to speech, and give understandable answers (b) Only read numbers (c) Repair computers (d) Control traffic
32. Which of the following uses NLP to respond correctly? (a) Calculator (b) Printer (c) Search bar and voice assistant (d) Scanner
33. In customer service, NLP mainly helps to: (a) Replace servers (b) Answer common questions without human help (c) Design websites (d) Store files
34. Chatbots on websites can answer questions 24/7 because of: (a) Robotics (b) Networking (c) Natural Language Processing (d) Databases
35. Robotics is an important part of AI that involves: (a) Computer programs only (b) Machines designed to do tasks like humans (c) Mobile applications (d) Internet services
36. Robots can perform tasks such as: (a) Lifting heavy items and cleaning floors (b) Writing books (c) Teaching students only (d) Browsing websites
37. Robots are helpful because they: (a) Get tired easily (b) Work with less accuracy (c) Do not get tired (d) Need constant human control
38. Speech technology allows computers to: (a) Listen and understand spoken words (b) Understand written text only (c) Design graphics (d) Store images
39. Speech technology is commonly used in: (a) Printers (b) Voice assistants and smart devices (c) Scanners (d) Monitors
40. In smart homes, speech technology helps people to: (a) Type commands (b) Install software (c) Control lights and devices by speaking (d) Repair machines
41. Recommendation systems are used to: (a) Delete old data (b) Give suggestions based on likes and past actions (c) Control robots (d) Store passwords
42. Recommendation systems improve user experience by making content: (a) Random (b) Difficult (c) Personal and useful (d) Limited
43. Autonomous vehicles are vehicles that: (a) Need two drivers (b) Work only at night (c) Run without fuel (d) Move without a human driver
44. Self-driving cars use sensors, cameras, GPS, and radars to: (a) Play music (b) Detect roads, vehicles (c) Store data (d) Send messages

45. One major benefit of autonomous vehicles is that they can: (a) Increase traffic (b) Reduce road accidents (c) Replace all laws (d) Stop traffic completely

46. A major concern related to self-driving vehicles is: (a) Low speed (b) High fuel use (c) Job loss for drivers (d) Weak engines

Benefits and Challenges of AI Applications

47. One benefit of AI applications is that they: (a) Increase human errors (b) Remove decision making (c) Slow down work (d) Help complete tasks faster and more easily

48. AI applications help businesses mainly in: (a) Gaming (b) Planning and sales prediction (c) Painting (d) Typing work

49. One limitation of AI applications is that: (a) Low-quality data can cause wrong results (b) They are always correct (c) They never fail (d) They do not need testing

50. AI mistakes can cause serious problems especially in: (a) Sports (b) Entertainment (c) Law and healthcare (d) Music

51. AI may replace human workers in jobs like: (a) Farming only (b) Customer service and data entry (c) Teaching only (d) Driving only bicycles

Ethics, Fairness, and Social Impact of AI

52. Ethics in AI means using AI in a way that is: (a) Fast and automatic (b) Fair, honest, and safe for everyone (c) Complex and powerful (d) Secret and hidden

53. Why is ethics important in AI systems? (a) AI can make decisions that may hurt people (b) AI replaces computers (c) AI works without data (d) AI needs electricity

54. An AI system is considered unfair if it: (a) Works slowly (b) Stores large data (c) Gives better service to one group and ignores others (d) Uses modern technology

55. AI should be developed with care to ensure: (a) Fairness, safety, and respect (b) Speed and profit only (c) Automation only (d) Entertainment

56. AI can be unfair mainly when it is: (a) Very fast (b) Not designed properly (c) Used online (d) Expensive

57. Bias in AI occurs when: (a) The system gives unfair results due to training data (b) AI works equally for all (c) AI uses sensors (d) AI works without errors

58. Bias in AI is often caused by: (a) Too much testing (b) Data representing only one group of people (c) Modern hardware (d) Strong security

59. A face recognition system may fail for some people because: (a) It uses cameras (b) It works offline (c) It was trained on limited types of images (d) It stores less data

60. To reduce bias, AI data should include: (a) One language only (b) Different people, languages, and situations (c) Only recent data (d) Technical data only

61. Fairness in AI means that systems should: (a) Work faster for some users (b) Favor powerful people (c) Treat all users equally (d) Avoid making decisions

62. Fair AI is especially important in decisions related to: (a) School admissions, jobs, and legal cases (b) Games and music (c) Photography (d) Social media likes

63. Transparency in AI means that: (a) AI hides its process (b) AI stores more data (c) People understand how and why decisions are made (d) AI works silently

64. The Privacy in AI refers to: (a) Keeping personal information safe (b) Hiding machines (c) Speeding up systems (d) Sharing data freely

65. Data security in AI protects information from: (a) Students (b) Hackers and attacks (c) Teachers (d) Users

66. The surveillance means: (a) Deleting data (b) Protecting privacy (c) Watching people's actions using systems or cameras (d) Training AI models

67. Excessive surveillance can harm: (a) Speed (b) Freedom and privacy (c) Accuracy (d) Storage
68. Social equity in AI means AI should: (a) Help only rich people (b) Focus on cities only (c) Benefit all people equally (d) Replace humans
69. Which groups should benefit from AI according to social equity? (a) Poor, disabled, and remote-area people (b) Rich users only (c) Educated people only (d) Programmers only
70. If AI tools are available only to rich groups, it creates: (a) Innovation (b) A gap between people (c) Accuracy (d) Fairness

Responsibility of AI Designers

71. AI systems do not make rules by themselves they: (a) Follow human instructions (b) Create decisions (c) Work randomly (d) Control humans
72. Who is responsible for fair, safe, and helpful AI systems? (a) Users (b) Government (c) Designers (d) Manufacturers
73. Why must AI designers think carefully about their tools? (a) Ensure positive impact (b) Reduce costs (c) Make AI faster (d) Store more data
74. Making AI helpful and trustworthy is: (a) A technical job (b) Optional (c) A moral duty (d) Government task
75. The Ethics in AI means: (a) Doing what is right and fair (b) Designing for business (c) Creating AI without data (d) Programming for speed
76. AI designers must ensure AI does not: (a) Increase storage (b) Connect online (c) Hurt people or be unfair (d) Learn from data
77. Ethics help AI designers to: (a) Make faster decisions (b) Protect users and support justice (c) Reduce memory usage (d) Automate tasks
78. Which of the following ethics includes? (a) Making AI autonomous (b) Hiding AI processes (c) Storing more data (d) Being honest about AI

Answers

1	2	3	4	5	6	7	8	9	10	11	12	13
b	c	a	b	d	c	a	c	b	a	d	c	b

14	15	16	17	18	19	20	21	22	23	24	25	26
c	b	c	b	b	a	b	c	b	c	d	b	c

27	28	29	30	31	32	33	34	35	36	37	38	39
c	d	c	b	a	c	b	c	b	a	c	a	b

40	41	42	43	44	45	46	47	48	49	50	51	52
c	b	c	d	b	b	c	c	a	b	c	a	b

53	54	55	56	57	58	59	60	61	62	63	64	65
c	b	c	c	a	c	d	b	c	c	d	a	b

66	67	68	69	70	71	72	73	74	75	76	77	78
c	a	a	b	c	a	b	c	a	c	a	b	d

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Solved Exercise

Multiple Choice Questions

- What does AI stand for? (a) Automatic Intelligence (b) Artificial Intelligence (c) Active Interface (d) Applied Information
- Which of the following is an example of Natural Language Processing (NLP)? (a) Online calculator (b) Voice typing (c) File copying (d) Image editing
- What type of data helps AI make better decisions? (a) Short and weak data (b) Only images (c) Large and good quality data (d) Data without labels
- Which tool uses AI to understand human voice? (a) Video player (b) Translator (c) Speech recognition (d) Mouse
- What is the role of robots in factories? (a) Watching videos (b) Making websites (c) Doing repeated or dangerous tasks (d) Writing stories
- What is a challenge of using AI? (a) It works slowly (b) It cannot be turned off (c) It may replace human jobs (d) It cannot store data
- If data represents only a group of people it is called: (a) Unbiased data (b) Biased data (c) Good data (d) Reliable data
- Why is fairness important in AI? (a) So, the system looks good (b) To avoid slow speed (c) To give equal treatment to all users (d) To use more memory
- Which of these is NOT an AI tool? (a) Chatbot (b) Face detection (c) Spell checker (d) Paper notebook

Answers

1	2	3	4	5
b	b	c	c	c

6	7	8	9
c	b	c	d

Short Questions

Q.1 What is Artificial Intelligence (AI)?

Ans. Artificial Intelligence (AI) is a technology that allows computers and machines to think, learn, and make decisions like humans. It can solve problems and perform tasks automatically.

Q.2 How is AI used in daily life?

Ans. AI is used in daily life in many ways, such as voice assistants, chatbots, self-driving cars, smart apps, and online recommendations. It makes tasks easier and faster for people.

Q.3 Why does AI need large and good-quality data?

Ans. AI needs a large amount of correct and useful data to learn patterns and make accurate decisions. Without good data, AI can give wrong results.

Q.4 What is the role of Natural Language Processing (NLP)?

Ans. NLP helps computers understand, read, and respond to human language, whether in text or speech. It is used in voice assistants, chatbots, and translation tools.

Q.5 Give one example of robotics in everyday life.

Ans. Robots are used in daily life to do tasks like cleaning floors, assisting in hospitals, or helping old and disabled people at home. They can work accurately without getting tired.

Q.6 What is the purpose of speech recognition technology?

Ans. Speech recognition technology allows computers to listen to human voice, convert it into text, and respond. It is used in voice assistants, smart devices, and healthcare applications.

Q.7 How do recommendation systems work?

Ans. Recommendation systems suggest items or content based on what a person has liked, viewed, or selected before. They help users find useful or interesting things quickly.

Q.8 What is meant by bias in AI systems?

Ans. Bias in AI happens when the system gives unfair results due to incomplete or incorrect data. It can cause certain groups to be treated unfairly.

Q.9 Why should AI systems be transparent and fair?

Ans. AI systems should be clear and fair so that people understand how decisions are made. Transparency ensures everyone is treated equally and can trust the system.

Long Questions

Q.1 What is the importance of data in AI? Explain why good and large data is needed.

★ **Key Points:** *Importance of Data | Large Amount of Data | Good Quality Data*

1. Importance of Data in AI

Data is the most important part of Artificial Intelligence (AI) because AI systems learn from data to make decisions, recognize patterns, and solve problems. Just like humans learn from books and experience, AI learns by analyzing examples in the data it receives.

2. Need for Large Amounts of Data

Large amounts of data are necessary because they allow AI to see many different situations and become more accurate in its predictions and actions.

3. Importance of Good-Quality Data

Good-quality data is equally important because incorrect, incomplete, or biased data can cause AI to give wrong results or make unfair decisions. Therefore, both the quantity and quality of data are essential for building reliable, smart, and efficient AI systems.

Q.2 Write in detail about any three real-world applications of AI (such as NLP, Robotics, or Speech Technology).

★ **Key Points:** *NLP | Robotics | Speech Technology*

1. Natural Language Processing (NLP)

NLP is a branch of AI that allows computers to understand, read, and respond to human language. It is used in voice assistants, chatbots, translation tools, and search engines. NLP helps computers communicate with people naturally, answer questions, provide information, and perform tasks based on text or speech input.

2. Robotics

Robotics involves designing machines, called robots, that can perform tasks like humans. Robots are used in factories to do repetitive or dangerous work, in hospitals to assist in surgeries, and at homes to help elderly or disabled people. They work accurately, do not get tired, and improve efficiency in daily life and industrial work.

3. Speech Technology

Speech technology allows computers and devices to listen, understand, and respond to human voice commands. Voice assistants, smart devices, and healthcare applications use speech recognition to convert spoken words into text or actions. This makes it easier for people to interact with machines, control devices, and complete tasks without typing or manual input.

Q.3 Explain the ethical issues in AI. Why are fairness, privacy, and transparency important?

★ **Key Points:** *Ethics in AI | Fairness | Privacy | Transparency*

Ethical Issues in AI and the Importance of Fairness, Privacy, and Transparency

Artificial Intelligence (AI) can have a big impact on people's lives, so ethical issues must be carefully considered. One key concern is fairness. AI should treat everyone equally and avoid discrimination based on race, gender, age, or other factors. Bias in AI can occur if it is trained on incomplete or unbalanced data, which may lead to unfair decisions.

Privacy is another important ethical concern. AI systems collect and use personal information, such as names, locations, or browsing history. Protecting this data is essential to prevent misuse, theft, or unwanted surveillance.

Transparency means that users should understand how AI makes decisions. For example, people should know why a loan application was rejected or why a recommendation was made. Transparency helps build trust between users and technology.

By following ethics in AI: developers ensure that systems are safe, fair, and trustworthy. Ethical AI protects human rights, supports justice, and benefits society as a whole.

Importance of Fairness, Privacy, and Transparency

Fairness ensures equal treatment and prevents discrimination. Privacy protects users' personal information from misuse. Transparency builds trust by helping people understand and question AI decisions. Together, these principles ensure that AI systems are safe, reliable, and beneficial for society.

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Solved Activities

ACTIVITY-1

"AI Around Us" Poster Task

Students will work in pairs to create a small poster showing how AI is used in different parts of society—such as hospitals, schools, or banks. They can draw, use magazine cutouts, or describe with words. Posters will be shared in class to understand AI's importance in different sectors.

Solution

Step 1: Work in Pairs

- Students work in pairs to help each other come up with ideas and work together.

Step 2: Pick a Sector

- Each pair chooses one or more areas in society where AI is used, like: Hospitals, Schools, Banks, Transportation, Shopping, Security

Step 3: Think About AI Uses

- Students talk and write down how AI helps in their chosen area.

Examples

Hospitals:

- AI helps doctors look at X-rays and find health problems.

Schools:

- AI suggests learning videos or checks spelling and grammar.

Banks:

- AI finds fake money and helps customers with chatbots.

Step 4: Plan the Poster

- Students decide how to show their ideas using: Drawings, Short written words, Labels and headings

Step 5: Make the Poster

- On a small chart or paper, students: Write a title: "AI Around Us", Draw pictures or sketches, Add simple explanations of how AI is used

Step 6: Check Your Work

- Pairs make sure that: The poster looks clean and easy to see, AI uses are explained correctly, The text is easy to read

Step 7: Present the Poster

- Each pair shows their poster to the class and explains: Where AI is used, Why it's important

Step 8: Discuss Together

- Students listen to others and learn how AI helps different parts of society, and understand how important it is in everyday life.

ACTIVITY-2

"Before and After AI" Chart

Students will be given a worksheet with two columns: "Before AI" and "After AI." They will list jobs or tasks that human experts used to do and how AI now helps with or replaces those jobs.

Solution

Step 1: Give Out the Worksheet

- Students get a worksheet with two columns: Before AI, After AI

Step 2: Explain What to Do

- The teacher tells the students that they will: Think about jobs or tasks people did before AI, Compare them with how AI does those tasks now

Step 3: Think of Ideas

- Students talk or think about different areas like: Healthcare, Education, Banking, Transportation, Media, Customer service

Step 4: Fill in the Chart — Some example ideas:

Before AI (Human Work)	After AI (AI Support)
Doctors examined X-rays manually	AI helps detect diseases in scans
Teachers graded papers by hand	AI helps auto-grade quizzes
Bank staff checked fraud manually	AI detects fraud automatically
Travel agents booked tickets	AI chatbots book tickets
Security guards watched cameras	AI monitors cameras for threats

Step 5: Check the Answers

- Students look at their work to make sure: Each "Before AI" task matches the right "After AI" example, The examples are clear and make sense

Step 6: Share Ideas with the Class

- Students share some of their examples and talk about: How AI makes work faster, How AI helps humans, not just replaces them

Step 7: Wrap Up the Activity

- Students learn that: Many jobs have changed because of AI, AI helps people work more quickly and accurately

ACTIVITY-3

"What Data Do Apps Collect?" Survey

Students will check 2-3 apps on their phone and note what kind of data the app collects (location, voice, clicks, search history).

Solution

Step 1: Introduce the Topic

- The teacher explains that many apps need data to work well and make the user experience better. This data can include things like where you are, what you say, what you click on, or what you search for.

Step 2: Choose Apps

- Students pick 2 to 3 apps on their phone or tablet. Examples include YouTube, WhatsApp, Google Maps, Instagram, or a game app.

Step 3: Check App Permissions

- Students open the App Settings / Permissions and see what data the app is collecting.

They look for:

- Location
- Microphone / Voice
- Camera

- Clicks & activity
- Search history
- Contacts or storage

Step 4: Record the Data

- Students fill in a simple table to record what data each app collects.

Sample Table

App Name	Location	Voice	Clicks/Activity	Search History
YouTube	X	X	✓	✓
Google Maps	✓	X	✓	X
WhatsApp	X	✓	✓	X

(✓ = collected, X = not collected)

Step 5: Analyze Findings

- Students look at: Which apps collect more data? Which data is most often collected? Why apps might need this data?

Step 6: Class Discussion

- Students talk about questions like: Why do apps collect data? Is all data collection necessary? How can users protect their privacy?

Step 7: Conclusion

- Students learn that: Apps collect different kinds of data, Users should be aware and responsible about what they allow apps to do, Privacy settings can help protect personal information

ACTIVITY-4**"Clean vs. Dirty Data" Matching Task**

Students are given two small data tables: one with clear (good quality) and one with missing or wrong details (bad quality). They match questions to each table and realize how difficult it is for AI to make good decisions with poor data.

Solution**Step 1: Give Out Data Tables**

- Each student gets: One table with clean data (complete, correct, and organized), One table with dirty data (missing or wrong information)

Step 2: Explain the Task

- Students have to match questions to the table that can answer them correctly.

Step 3: Look at the Tables

- Students notice: Clean data: has all the correct information; Dirty data: is missing some details or has errors

Step 4: Answer the Questions

- Students try to answer the questions using both tables and see: Clean data gives clear and correct answers, Dirty data can cause confusion or errors

Step 5: Talk About What They Learned

- Students learn that: AI needs good-quality data, Poor data leads to wrong or unfair results

Table 1: Clean Data (Good Quality)

Student Name	Age	Grade	Marks (%)
Ali	14	9	85
Sara	15	10	92
Ahmed	14	9	78
Ayesha	15	10	88

Table 2: Dirty Data (Poor Quality)

Student Name	Age	Grade	Marks (%)
Ali	(missing)	9	85
Sara	15	Ten	92
Ahmed	14	9	seventy
Ayesha	??	10	(missing)

ACTIVITY-5**"Speak and See" Practice**

Using a phone or computer, students try out voice-to-text tools (like Google Voice Typing). They speak a sentence and see if the tool types it correctly. Then they try speaking in different tones or speeds and compare the results.

Solution**Step 1: Use a Voice Tool**

- Students use a phone or computer tool like Google Voice Typing.

Step 2: Speak Clearly

- Students say a simple sentence and see how well it is typed.

Step 3: Try Different Voices

- Students repeat the same sentence: Slowly, Quickly, Loudly or softly

Step 4: Compare the Results

- Students look at how accurate the typed text is in each case.

Step 5: Share What They Learned

- Students find out that: AI works best when people speak clearly and slowly, Accents, speed, and background noise can affect the results

ACTIVITY-6**"Guess My Choice" Simulation**

Each student secretly picks a favorite type of video or item. The teacher shows different choices (e.g., comedy, sports, cooking). Based on previous choices, students try to "recommend" the next item to each other. This mimics how AI makes suggestions based on past behavior.

Solution**Step 1: Choose a Secret Item**

- Each student picks a favorite item or video type (like comedy or sports) without telling anyone.

Step 2: See the Options

- The teacher shows the class different choices.

Step 3: Make a Guess

- Students try to guess what their partner might like based on what they know.

Step 4: Check Their Guesses

- Students see if their guesses were right and think about: What clues helped them make their guess? Were they correct?

Step 5: Understand How AI Works

- Students learn that: AI uses what people have done before, More data helps AI make better recommendations

ACTIVITY-7**"Map the Journey" Planning Task**

Students draw a map from their school to a park or market. Then they mark what a self-driving car would need to detect (like traffic lights, people crossing, or road signs).

Solution**Step 1: Draw a Route**

- Students sketch a path from school to a park or store.

Step 2: Mark Important Things

- They add things that a self-driving car must see: Traffic lights, People crossing, Road signs, Other cars

Step 3: Label the Sensors

- Students discuss how cameras and sensors help identify these things.

Step 4: Think About Safety

- Students learn that: Self-driving cars need information from many sources, AI must understand the world to drive safely and correctly

ACTIVITY-8**"Same Input, Different Output?" Game**

Students are given a pretend AI that gives random or unfair results based on the name, color, or gender of users. They analyze whether this is fair and how real-life AI systems can become biased if not designed carefully.

Solution**Step 1: Learn the Scenario**

- Students are given a pretend AI that gives unfair results based on: Name, Color, Gender

Step 2: See the Results

- Students watch how different people get different outcomes even with the same input.

Step 3: Discuss Fairness

- Students talk about: Is this fair? Why does it happen?

Step 4: Link to Real AI

- The teacher explains that: AI can be unfair if it's trained on biased data, Designers need to be careful and fair

Step 5: Understand the Importance

- Students learn that: AI decisions should be fair and honest, Creating AI responsibly is important

ACTIVITY-9

"Explain Your Choice" AI Role Play

One student plays "AI," and others ask it to make a choice (like selecting a student for a prize). The AI must explain the reason.

Solution

Goal: Students learn how an AI makes choices and the importance of explaining those choices.

Steps:

1. Before Starting

- Pick one student to be the "AI".
- The rest of the students are "questioners" who will ask AI to make a choice, like picking a student for a prize.

2. During the Activity

- The questioners take turns asking AI to make a choice, such as "Which student should win the prize?"
- AI explains how the decision was made, just like an AI would.
- For example, AI might say, "I chose this student because they had the best attendance record," or "I considered their grades and picked the top scorer."

3. After the Activity

- The class discusses if AI's reasoning was fair and makes sense.
- They might ask if the reasons AI used were balanced and reasonable.

4. What Students Learn

- Students understand why it's important for AI to be transparent and fair, and how to explain the logic behind an AI's decision.

ACTIVITY-10

"AI for All" Poster Drawing

Students create a poster showing how AI should help everyone; rich or poor, city or village. Posters should show fairness and equal access.

Solution

Goal: Students explore the idea of AI fairness and accessibility by designing a world where AI helps everyone equally, regardless of their background.

Steps:

1. Before Starting

- Give students art supplies like markers and paper.
- Explain that they need to create a poster showing how AI can help people in different situations, such as education, health, jobs, and government services.

2. During the Activity

- Ask students to design posters that show AI being used for good in all areas of life.
- The posters should highlight fairness, equal access, and how AI can avoid discrimination or bias.

3. After the Activity

- Students present their posters and explain their ideas on how AI can be fair and helpful to everyone.
- The class discusses how to ensure AI systems don't make things worse for certain groups.

4. What Students Learn

- Students learn about the potential benefits of AI in achieving fairness and equal opportunities for all people.

ACTIVITY-11

"Build a Fair System" Brainstorm

In small groups, students design a fair AI system (e.g., for school admissions or job selection). They list what rules they will follow to avoid bias, mistakes, or harm.

Solution

Goal: Students design an AI system that is fair and clear, with rules to prevent bias in decision-making.

Steps:

1. Before Starting

- Divide the class into small groups.
- Give each group a scenario where an AI is being used (like school admissions or job selection).

2. During the Activity

- Each group talks about what rules their AI system would follow to ensure fairness, avoid bias, and prevent harm.
- For example, a fair system for school admissions might consider factors like grades, personal challenges, and extra activities.
- The group lists the rules and steps their AI system would use to ensure fairness, like removing biased data or making decisions clear to everyone.

3. After the Activity

- Each group shares their AI system with the class.
- The class discusses possible problems, like how to keep the system unbiased and transparent.

4. What Students Learn

- Students understand the value of making systems transparent, accountable, and free from bias.

ACTIVITY-12

"Right or Wrong?" Ethics Quiz

The teacher reads short AI situations (e.g., spying, unfair selection). Students vote: Is this right or wrong? Then they explain their answer.

Solution

Goal: Students learn to recognize ethical issues in AI situations and think critically about them.

Steps:

1. Before Starting

- Prepare a list of short AI-related scenarios, such as "AI is used to spy on people" or "AI unfairly selects job candidates."

2. During the Activity

- The teacher reads each scenario aloud.
- Students vote whether they think the action is right or wrong.
- After each vote, students explain why they think the decision is ethical or not.

3. After the Activity

- The class discusses the reasoning behind their opinions.

- They talk about the possible negative effects of unethical AI use and why certain actions might break human rights or fairness.

4. What Students Learn

- Students understand the ethical concerns when using AI and how to evaluate the impact of AI systems on society.

ACTIVITY-13

Activity (NLP)

Type a sentence in English into Google Translate or a translation app, and convert it into Urdu. Then change a few words and try again.

Solution

Goal: This activity helps students understand how Natural Language Processing (NLP) works in machine translation.

Steps:

1. Before Starting

- Have students use a translation tool like Google Translate or a similar app on their devices.

2. During the Activity

- Ask students to type a simple English sentence, like "I love reading books," and translate it into Urdu.
- Then, ask them to change the sentence a little, like "I love reading novels," and translate it again.
- They should notice any changes or mistakes.

3. After the Activity

- Discuss how translation apps work and the challenges AI faces in understanding context, grammar, and meaning.
- Explore how NLP models might sometimes give wrong or biased translations and how those can be improved.

4. What Students Learn

- Students learn the basics of how NLP works and the importance of context and accuracy in AI translation.

ACTIVITY-14

Activity (Robotics)

Watch a short video of a robot performing a task (like assembling parts, serving food, or cleaning). After watching, write 3 lines about: What the robot did, How AI helped it, What would happen if it made a mistake?

Solution

Objective: To understand how AI helps robots perform tasks and what happens if there are mistakes.

Steps:

1. Watch the Video

- Look at a robot doing something like putting together parts, serving food, or cleaning.

2. Note Key Points

- What the robot did.
- How AI helped it do the task.
- What might happen if the robot made a mistake.

3. Write Observations

- Write 3 short sentences to explain what you learned.

Example Answer

- What the robot did: The robot put together small parts on a factory line.
- How AI helped it: AI helped the robot pick up, move, and line up the parts correctly.
- What would happen if it made a mistake: If the part was not placed right, it could stop the line or break the product.

ACTIVITY-15**Activity (Speech Recognition)**

Use voice typing on a phone or computer (e.g., Google Docs voice typing). Speak a sentence and watch the text appear. Then speak a different sentence and check if the text is correct.

Solution

Goal: To see how speech recognition turns spoken words into text.

What You'll Need

- A phone or computer
- Google Docs (or any app that has voice typing)

Steps:**1. Start the Voice Typing Tool**

- On a computer, open Google Docs, then go to Tools and click on Voice Typing.
- On a phone, use an app that supports voice input.

2. Turn on Voice Typing

- Click the microphone button to begin listening.

3. Say a Sentence

- Speak clearly, like, "AI is changing the way we work."

4. Look at the Text

- Watch as the words you said appear on the screen.
- Check if the text matches what you said.

5. Try a New Sentence

- Stop the microphone, then say something else, like, "Voice assistants can understand human language."

6. Check for Accuracy

- Compare the text with what you said.
- Write down any mistakes or things that weren't recognized correctly.

7. Try Again (Optional)

- Speak faster, slower, or with different accents to see how it affects the recognition.