

St. Andrews Scots Sr. Sec. School

9th Avenue, I.P. Extension, Patparganj, Delhi – 110092

Session: 2022-2023 - Worksheet

Class: IX

Subject: Artificial Intelligence

Topic: UNIT 1(PART-B)

Worksheet No:2

Unsolved Questions (Answer Key)

A.Fill in the blanks.

1. Precision
2. Affordable, skilled engineers
3. Hanson Robotics
4. Analysis, Prediction
5. Surveillance
6. Justice
7. Coding
8. Design, Construction
9. Data Science
10. Erica
11. Big Data
12. and efficient

B. State whether these statements are true or false.

1. True
2. False
3. True
4. True
5. True
6. True
7. False
8. False
9. True
10. False
11. False
12. True

C. Short answer type questions.

Q 1) Give an application of computer vision in AI.

Answer: Some applications of Computer Vision in AI are facial lock in smartphones, unusual behaviour detection, object classification, etc.

Q 2) Name any three important areas where AI has made a remarkable impact.

Answer: Areas where AI has made a remarkable impact are:

- a. Security surveillance
- b. Education
- c. Space exploration

Q 3) Explain in short how AI can be future man kind?

Answer: The main focus of AI would be to replace humans in hazardous jobs. Fields like medicine, industry, environment, defence, wherever humans are vulnerable, it will be replaced with machines with human-like intelligence.

Q 4) Explain the concept of Data as a Domain of AI?

Answer: Data is a domain of AI that is related to input to the AI machine. AI requires large amounts of data to find the latest trends and patterns. More the data, the better will be the analysis and more accurate would be the prediction.

Q 5) What is the main goal of creating a Smart city?

Answer: The main goal of smart cities is to optimise the economic growth of the city and improve quality of life for people with the use of technology and data analysis.

Q 6) What is a Smart Home?

Answer: Smart Homes are homes that use internet connected devices to empower remote monitoring and management of appliances and devices such as for lighting and heating.

Q 7) Explain in short the concept of Zero Hunger?

Answer: The goal of this SDG is to end hunger, achieve food security, improve nutrition and promote sustainable agriculture. It also aims to seek sustainable solutions to end hunger in all its forms by 2030 and to achieve food security.

Q 8) What is the meaning of self sustained smart cities?

Answer: A smart sustainable city is an innovative city that uses ICTs and other means to improve quality of life, efficiency of urban operation and services, and competitiveness, while ensuring that it meets the needs of present and future generations with respect to economic, social, environmental as well as cultural aspects.

Q 9) Explain the AI research in natural language understanding?

Answer: LaMDA is the latest breakthrough in natural language understanding. It's a language model for dialogue applications and its open domain, which means its design to converse on any open-end topic.

Q 10) How AI can be helpful in Space exploration?

Answer: Astronomers used AI to sift through years of data obtained by the Kepler telescope to identify a distant eight-planet solar system. AI is also being used for NASA's next mission to Mars, the AEGIS— a Mars based AI robot, already on the planet is responsible to handle autonomous targeting of cameras in order to perform investigations in Mars.

Q 11) How can AI lead to unemployment?

Answer: With rapid development of AI, the fear of unemployment is constant. Jobs in manufacturing, agriculture, food service, retail, transportation and logistics, and hospitality are some of the industries likely to be affected. The majority of the repetitive tasks would be taken over by AI.

Q 12) AI proves to be a boon for repetitive tasks. Explain.

Answer: One of the benefits of AI for business is that it handles repetitive tasks across an organization so that employees can focus on creative solutions, complex problem solving, and impactful work.

D: Long answer type questions:

Q 1) How is Artificial General Intelligence different from Artificial Super Intelligence?

Answer: General AI: It is also termed as General AI. Machines with the following characteristics will fall in this category. Machines that would perform a wider range of different tasks with the intelligence like that of

humans. It is a step ahead of Weak AI by including problem-solving, learning and development.

Strong AI: At present, we have not developed any such machines. Worldwide research is now focused on developing machines with strong AI. As these systems are in their research stage, it may take a lot of time and effort to develop these. An example of Strong AI could be a machine hearing "good morning" and deciding to turn on the coffee maker.

Q 2) Explain any three important careers in AI.

- Answer:** a. **Big Data Engineer:** The role of a Big Data Engineer is to create an ecosystem for the business systems to interact efficiently. Their primary task is to build and effectively administer big data of an organization. They also have to carry out the function of obtaining outcomes from big data in a robust manner.
- b. **Machine Learning Engineer:** Machine learning engineers are involved in building and maintaining self-running software that facilitates machine learning initiatives. They are in continuous demand by the companies and their position rarely remains vacant. They work with huge chunks of data and possess extraordinary data management traits.
- c. **Robotics Scientist:** A reduction in jobs will indeed take place due to the emergence of robotics in the field of AI. Conversely, jobs will also rise as robotics scientists are in incessant demands by major industries for programming their machines.

Q 3) Give any three important applications of AI in real-life.

- Answer:** a. **Healthcare for Assisting Doctors:** For saving human lives the medical industry is relying on AI on many fronts. Healthcare organisations are using IBM Watson for medical diagnosis. Google's DeepMind has successfully developed a system that can analyse retinal scans and spot symptoms of sight-threatening eye diseases.
- b. **AI in Education for Automated Grading System:** AI in the assessment process provides real-time learning feedback to teachers and students. Through Machine Learning and data analysis using AI, human patterns of data are studied. This helps in a quick and fair grading system without human interventions.
- c. **AI in Agriculture:** The world will need to produce 50 percent more food by 2050 as we are exhausting our resources. The only way this can be possible is when we are using it more wisely. AI can help farmers to get more from the land, and use resources more sustainably.

Q 4) How AI is of great help in email communication?

- Answer:** **Email Spam Filters:** Email categorization and spam filters are one of the powering features of AI that affect our inbox. Simple rule-based filters are used to mark spam or put email into various categories as Primary, Social, Promotion or Important.

Q 5) List down three most important jobs at risk due to AI.

- Answer:** a. Manufacturing and pharmaceutical work
b. Doctors
c. Soldiers
