CLASS IX ARTIFICIAL INTELLIGENCE HOLIDAY HOMEWORK

1.) POSTER MAKING

ROLL NO. 1-20 :

How artificial intelligence is transforming the world?

ROLL NO. 21-40 :

Types of AI and AI future

2.) Thoroughly read the Chapter Unit-1 Introduction to AI (Recapitulation of Class VIII syllabus)

3.) Complete the attached notes in the fair notebook and learn.

Q1.) Define the term AI? What all behaviour Artificial Intelligent machine should have in connection to human behaviour?
Ans. In simple words, Artificial Intelligence can be defined as the ability of a computer system that is hardware and software to do tasks that normally require human beings to use Intelligence two different.

1. Planning
2. Learning
3. Reasoning
4. Perception
5. Problem solving
6. Motion
7. Manipulation
8. Creativity
9. Social intelligence
10. Knowledge representation

Q2.) what are the different fields related to artificial intelligence?
Ans.

1. Machine learning
2. Neural networks
3. Data science
4. Managing big data
5. Data acquisitions
6. Data modelling
7. Data analysis
8. Data curation

Q3.) What is robotics?
Ans. Robotics is a subfield of Engineering dedicated to the research development and operation of robots. Robotics engineer study how a constructed physical system can supplement or perform a task or interface with new technology.

Q4.) What are the four waves in the development of Artificial Intelligence?
Ans. The shifting of artificial intelligence from the science fiction to real science started in 1940 and the term artificial intelligence was not well up until 1956.
The phases in the development of artificial intelligence have been divided into four waves.
First wave: The first wave booster to the development of the AI happen with the growth of the internet.
Second wave: The second substantial boost happened with the advancement of mobile internet.
Third wave: The 3rd series boost to the development of AI happened with the evolution of internet of things (IOT).
Fourth wave: In this wave truly artificial intelligence system will evolve and will surpass what human beings are capable of doing today.

Q5.) What are the two types of Artificial Intelligence? Briefly Describe.
 Ans. The two types of Artificial Intelligence are:

1.) **Artificial Narrow Intelligence (ANI):** Narrow AI is a type of AI which is able to perform a dedicated task with intelligence. Narrow AI cannot perform beyond its field or limitations, as it is only trained for one specific task. Apple Siri or Alexa is a good example of Narrow AI, but it operates with a limited pre-defined range of functions.

2.) **Artificial General Intelligence (AGI):** General AI is a type of intelligence which could perform any intellectual task with efficiency like a human. The idea behind the general AI to make such a system which could be smarter and think like a human by its own. Currently, there is no such system exist which could come under general AI and can perform any task as perfect as a human.

Q6.) What are the fields contributing to Artificial Intelligence?

Ans. The Fields contributing to Artificial Intelligence are:

1.) Computer Science	5.) Neurology
2.) Computer Engineering	6.) Psychology
3.) Mathematics	7.) Biology
4.) Linguistics	8.) Philosophy

Q7.) What is the Real-Life usage of Artificial Intelligence?

Ans. The weak AI systems in existence today are being used in a number of fields and areas. These are:

1.) Gaming
2.) Natural Language Processing
3.) Decision Making
4.) Vision Systems
5.) Speech Recognition
6.) Handwriting Recognition
7.) Intelligent Robots
8.) Commercial Establishment
9.) Life Saving AI
10.) Entertaining AI

Q8.) What are the Limitations of AI?

Ans. The following infographic will help us to understand the limitations of AI:

1.) Learning new natural language

2.) Reading and Understanding articles and books

3.) Understanding the implications and making decisions

4.) Visualising the scenes

5.) Exhibiting automation and intelligence.

Q9) Briefly explain the three domains of Artificial Intelligence.

Ans. **1.) <u>Data</u>:** It is the core of General AI , as these systems will have the capability of processing data for learning and growing.

2.) **<u>Computer Vision</u>:** This core element will help in sustainable development –
It' uses are: 1.) Face Recognition 2.) Content -based Image Retrieval (CBIR) 3.) Smart Interactions 4.) Environment Perception

3.) **<u>Natural Language Processing(NLP)</u>:** This domain of AI is working towards the creation of artificial intelligence system, which will be capable of communicating with human beings using natural language.

Q10.) What are the different components of NLP(Natural Language Processing)?

Ans. NLP contains two main components:

1.) **<u>Natural Language Understanding (NLU)</u>:** For understanding spoken or written language.

2.) **<u>Natural Language Generation(NLG)</u>:** For producing meaningful phrases and sentences in the form of Natural Language.

Q11.) What are the six dimensions of AI?

Ans: The relevance of AI in the day-to-day human life can be seen through the six dimensions of Artificial Intelligence:

1.) **<u>Automation</u>:** Automatic repetitive learning and discovery by using data.

2.) **<u>Augmentation</u>:** Augmentation of the intelligence of existing products

3.) **<u>Adaptation</u>:** Adapting by using data

4.) **<u>Analysis</u>:** Finding deeper truths by analysing data

5.) **<u>Accuracy</u>:** Increasing accuracy of existing or new systems

6.) **<u>Acquisition</u>:** Acquiring more out of data.

Q12.) What are the advantages of Smart cities and Smart Buildings?

Ans. Advantages of Smart Buildings

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Q13.) What are the Phases in Development of Smart Cities?

Ans. There are three phases in the development of Smart Cities:-

<u>Phase 1</u>: In this phase there was no concept where the use AI technologies can be connected with smart cities.

<u>Phase2</u>: In this phase, the use of AI technology started, the advent of smart devices coupled with AI helped smart cities to analyse different aspects how cities can be improved.

<u>Phase 3</u>: This is the latest phase in the development of smart cities, this includes increasing citizen involvement in decision making.

Q14.) What is Sustainable Development? When and why was its Sustainable Development goals adopted?

Ans. The term 'Sustainable Development' is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs. SDGs are the set of 17 goals that were adopted at the United Nations Conference on Sustainable Development in Rio De Janeiro in 2012. The main objective behind it's adoption was to meet the urgent challenges of the world covering three dimensions:

1.) Environmental
2.) Social
3.) Economical

Q15.) What are issues covered under the Sustainable Development Goals?

Ans. It includes:

1.) Ending Extreme Poverty
2.) Ensuring all Children Receive Proper Education.
3.) Achieving Equal Opportunities for all.
4.) Promoting Better Practices for Consumption and Production, that will help making the Planet Cleaner and Healthier.

Q16.) What are the 17 Goals of Sustainable Development?

Ans.

GOAL 1: No Poverty
GOAL 2: Zero Hunger
GOAL 3: Good Health and Well-being
GOAL 4: Quality Education
GOAL 5: Gender Equality
GOAL 6: Clean Water and Sanitation
GOAL 7: Affordable and Clean Energy
GOAL 8: Decent Work and Economic Growth
GOAL 9: Industry, Innovation and Infrastructure
GOAL 10: Reduced Inequality
GOAL 11: Sustainable Cities and Communities
GOAL 12: Responsible Consumption and Production
GOAL 13: Climate Action
GOAL 14: Life Below Water
GOAL 15: Life on Land
GOAL 16: Peace and Justice Strong Institutions
GOAL 17: Partnerships to achieve the Goal