Winter Vacation Home Work- 2024-25
Class- VIII
Subject: Computer Science

Case Study on "Introduction of Robotics"
Introduction to Robotics:
Robotics is a branch of technology that deals with the design, construction, operation, and use of robots. A robot is a machine capable of carrying out tasks automatically, especially those that are repetitive or dangerous for humans. The use of robotics has grown rapidly in industries like manufacturing, healthcare, agriculture, and entertainment.
Robots can be programmed to perform tasks such as assembling products, performing surgeries, cleaning homes, and even exploring outer space. They are designed with sensors, actuators, and controllers to interact with their environment and perform tasks autonomously or with minimal human intervention.

Applications of Robotics:
1. **Manufacturing Industry:** Robots are used in factories for assembly lines. They can carry out repetitive tasks such as welding, painting, and assembling parts.
2. **Healthcare:** Robotic surgery helps doctors perform precise operations with minimal invasion. Robots are also used in rehabilitation and patient care.
3. **Exploration:** Robots like rovers are used for exploring planets and other celestial bodies.
4. **Home Assistance:** Robots are increasingly used in homes for cleaning, cooking, and providing assistance to the elderly.
5. **Agriculture:** Agricultural robots are used for tasks such as planting, harvesting, and monitoring crop health.

Key Components of a Robot:
1. **Sensors:** Help the robot understand its environment (e.g., vision sensors, temperature sensors).
2. **Actuators:** Motors that allow the robot to move or perform actions.
3. **Controller:** The "brain" of the robot, which processes information and sends commands to the actuators.

Multiple-Choice Questions (MCQs)
1. **What is robotics?**
   a) The study of computers   b) The study of machines and automation
   c) The study of living organisms   d) The study of plants
2. **Which of the following is an example of a robot used in the healthcare industry?**
   a) Automated vacuum cleaner   b) Surgical robot
   c) Space rover   d) Car manufacturing robot
3. **Which part of a robot helps it understand its surroundings?**
   a) Actuators   b) Controller   c) Sensors   d) Power supply
4. **What is the primary use of robots in the manufacturing industry?**
   a) To make decisions   b) To perform repetitive tasks
   c) To interact with humans   d) To explore space
5. **What type of robots are used to explore planets and other celestial bodies?**
   a) Surgical robots   b) Agricultural robots   c) Space robots (rovers)   d) Household robots

Maths

1. Fun Activities
   Math Art: Create a rangoli design using geometrical shapes like triangles, circles, and squares.
2. Profit, Loss, and Discount
   Solve 10 problems related to profit, loss, and discount.
   Research and write a short paragraph about how these concepts are used in real-life situations like shopping and business.

3. Prepare a 3D model of a geometric solid (e.g., a cone or cuboid or cylinders) using cardboard. Write its properties (faces, edges, vertices, surface area, volume).
Submission Guidelines
Complete the work neatly in a notebook.
Use graphs and diagrams wherever necessary.
Decorate and organize your project creatively.
Let me know if you'd like specific additions!

Science

1) Make kaleidoscope by using mirror and write about it in activity copy.

2) Draw structure of eye and ear and write working of it in activity copy and with label diagram.

Social studies

1) Make a collage of important leaders with brief information about their contribution during National Movement in India.(Do it on chart paper)
2) Your friend is participating in story writing competition on the topic Lives of Adivasis in India. Help him/her by developing a short story. Do it in civics notebook (Minimum 300 words)

विषय- हिन्दी

कहानी लेखन

नोट-

दोनों प्रश्न करना अनिवार्य है

गृहकार्य अपनी वसंत की कॉपी में ही करें

सभी निर्देशों का उचित पालन करें

"सर्दियों के सुनहरे दिन" विषय पर एक छोटी कहानी लिखें और चित्र भी बनाइए। कहानी में मुहावरों का प्रयोग कर कहानी को रोचक भी बनाएँ

सामाजिक संदेश

"सर्दियों में पशु-पक्षियों की मदद करें" विषय पर दो नारा लिखें ' और कोई पाँच अच्छे तरीके भी लिखें जिससे उनकी मदद सफलतापूर्वक की जा सके

English
1) Humor and Creativity:

Write a funny classified advertisement for something unusual, like "Wanted: A talking parrot to tell bedtime
stories" in not more than 50 words.

2) The Story of an Abandoned Home in Winter:

Write a fictional report about discovering an old, abandoned home during winter break. Describe its
condition, the mystery behind it, and its connection to winter.