Class 6

Answer Key

RoboGenius Pro

1. Robotics, AI and Electronics

ROBO CHECK

A.	1. (ii)	2. (i)	3. (ii)	4. (i)	5. (iv)
B.	1. T	2. F	3. T	4. F	5. T
C.	1. Self-driving	2. Exploration	3. Mechanical	4. Artificial Intelligence	5. Normal

COMPETENCY-BASED QUESTIONS

1. Rohan should use a light sensor, as it helps detect the intensity of light and allows the robot to follow the light beam across the classroom.
2. The suitable robot for Hemant to help in a hospital would be a service robot, designed to assist in tasks like delivering medicines or helping doctors during surgeries.

CASE STUDY

1. MediBot is an autonomous delivery robot designed to transport medicines in hospitals.
2. The robot uses proximity, infrared or ultrasonic sensors to avoid bumping into people or walls.

2. 3D Shapes in Robotics with Tinkercad

ROBO CHECK

A.	1. (iii)	2. (iii)	3. (iv)	4. (ii)	5. (i)
B.	1. F	2. T	3. T	4. F	5. T
C.	1. Viewcube	2. Solid	3. Workplane	4. Animal	5. Black

COMPETENCY-BASED QUESTIONS

1. Maya should use the Hole feature in Tinkercad to subtract one or more shapes from the main solid and create hollow spaces.
2. Riya should use shapes like cylinders, spheres and cubes to design an effective robot structure for moving and picking up trash.

3. Introduction to Codeblocks in Tinkercad

ROBO CHECK

A.	1. (i)	2. (iii)	3. (ii)	4. (iv)	5. (i)
B.	1. Control	2. Add Box	3. Move	4. Pause	5. Notes
C.	1. F	2. T	3. F	4. T	5. T

COMPETENCY-BASED QUESTIONS

1. Arjun should use the Set transparency block to make his 3D shape slightly see-through and check the structure inside.
2. Riya should use the Set color (RGB values) block to change the colour of the 3D shape using RGB values.

4. Basics of Circuits for Robotics

ROBO CHECK

A.	1. (ii)	2. (i)	3. (iv)	4. (iii)	5. (i)
B.	1. Electricity	2. Volts	3. Series circuit	4. Tools, Buttons	5. DC motor
C.	1. F	2. T	3. T	4. T	5. F

COMPETENCY-BASED QUESTIONS

1. Vishal can use a resistor to control the current flow in the circuit and protect his components.
2. Jay should set up a parallel circuit, which allows the other lights to keep working even if one goes out.

5. Building the Future with 3D Printing

ROBO CHECK

A.	1. (ii)	2. (i)	3. (ii)	4. (iv)	5. (i)
B.	1. Physical	2. PLA	3. 3D printing	4. Learning	5. Architects
C.	1. F	2. T	3. T	4. T	5. F

COMPETENCY-BASED QUESTIONS

1. Priya should use resin for her custom necklace design, as it provides a smooth finish and can handle intricate details.
2. Rahul should use nylon for the part, as it is a flexible and durable material that can bend without breaking.

CASE STUDY

1. AI improves 3D printing by optimising designs for strength and material usage while detecting and fixing errors automatically.
2. AI increases efficiency by detecting and correcting printing errors, reducing the need for manual adjustments.
3. The combination of 3D printing and AI makes manufacturing faster, more innovative and environmentally friendly.