

1. AI in Popular Apps



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|----|---------|----------|---------|-----------|------------|
| A. | 1. (i) | 2. (iii) | 3. (ii) | 4. (i) | 5. (ii) |
| B. | 1. 2010 | 2. Alexa | 3. Siri | 4. Practo | 5. Netflix |
| C. | 1. T | 2. T | 3. F | 4. T | |

COMPETENCY-BASED QUESTIONS

- Voice Control and Smart Home Integration
- Rahul is using Google Maps. Its main use is to provide directions, show the best route, estimate travel time and help avoid traffic.

2. AI Industry 5.0: Smart Robots



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|----|------------------|--------------|---------------|------------|-------------|
| A. | 1. (iii) | 2. (ii) | 3. (iii) | 4. (iv) | 5. (i) |
| B. | 1. Entertainment | 2. Education | 3. Healthcare | 4. Sensors | 5. Military |
| C. | 1. T | 2. T | 3. F | 4. T | 5. F |

COMPETENCY-BASED QUESTIONS

- A home robot would be suitable for cleaning classrooms. Home robots assist with household tasks, providing convenience and automation.
- Yes, farming robots can help your uncle. These robots can assist with tasks like spray seeds with fewer chemicals, promoting sustainable farming.

3. Introduction to Robotics and AI



- A. 1. (iii) 2. (ii) 3. (iv) 4. (i) 5. (i)
- B. 1. T 2. F 3. T 4. T 5. F
- C. 1. Smart machine 2. Robotics 3. Military 4. Natural Language Processing
5. Make decisions

COMPETENCY-BASED QUESTIONS

1. Self-driving cars
2. Robotic vacuum cleaner

CASE STUDY

1. RoboGuard is a service robot used in military operations. It performs tasks like bomb disposal, surveillance and patrolling restricted areas.
2. RoboGuard is equipped with wheels, cameras, sensors and a microcontroller to navigate hazardous environments and detect threats.

4. Exploring Real vs Simulated Components



- A. 1. (ii) 2. (iii) 3. (ii) 4. (iii) 5. (i)
- B. 1. T 2. F 3. T 4. T 5. F
6. T
- C. 1. Framework 2. Software 3. Simulations 4. AI 5. Digital

COMPETENCY-BASED QUESTIONS

1. Manvi's robot is using sensors and a controller.
2. Amit is using simulation.



CASE STUDY

1. The benefit of Neha using SimuBot before building the real robot was that it allowed her to identify and fix issues without wasting materials.
2. The issue Neha identified with her robot during the simulation was that the robot moved too fast and missed dirt spots, meaning it was not covering all areas efficiently.

5. Micro:bit and the World Around Us



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|----|---------|--------------|----------|---------|-----------|
| A. | 1. (ii) | 2. (iii) | 3. (ii) | 4. (iv) | 5. (i) |
| B. | 1. T | 2. T | 3. T | 4. T | 5. F |
| C. | 1. Pins | 2. Bluetooth | 3. Light | 4. 25 | 5. 3V pin |

COMPETENCY-BASED QUESTIONS

1. Arjun should use the temperature sensor to measure the temperature. For output, he can use the LED display to show the temperature and the speaker to give a warning when it gets too hot.
2. Aarav should use the Button A to trigger the action of displaying his name when pressed.

6. Creative Projects with Micro:Bit



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|----|---------|----------------------|----------|-----------|--------------|
| A. | 1. (i) | 2. (ii) | 3. (iii) | 4. (iv) | 5. (ii) |
| B. | 1. T | 2. F | 3. T | 4. T | 5. T |
| | 6. F | 7. T | 8. T | | |
| C. | 1. LEDs | 2. Logical reasoning | 3. Code | 4. Groups | 5. Pedometer |

COMPETENCY-BASED QUESTIONS

1. Navya should use the accelerometer to detect movement in the room. For output, she can use the speaker to trigger an alarm when movement is detected.
2. Kiran should use the accelerometer to detect the shake. Each shake will increase the count and the updated number can be displayed on the LED display.