Question No (1):

Temprature Cotrol:

Answer:

```
class SimpleReflexAgent:
    def __init__(self, desired_temperature):
        self.desired_temperature = desired_temperature

    def act(self, current_temperature):
        if current_temperature < self.desired_temperature:
            return "Turn on heater"
        else:
            return "Turn off heater"


rooms = {
    "Living Room": 18,
    "Bedroom": 22,
    "Kitchen": 20,
    "Bathroom": 24
}


desired_temperature = 22
agent = SimpleReflexAgent(desired_temperature)


for room, temperature in rooms.items():
    action = agent.act[temperature]
    print(f"{room}: Temp now = {temperature}°C. {action}.")

class ModelBasedReflexAgent:
    def __init__(self, desired_temperature):
        self.desired_temperature = desired_temperature.self.previous_action =
None
        self.desired_temperature = desired_temperature

    def act(self, current_temperature):
        if current_temperature < self.desired_temperature:
            return "Turn on heater"
        else:
            return "Turn off heater"
```

Lab Task :


```
rooms = {
    "Living Room": 18,
    "Bedroom": 22,
    "Kitchen": 20,
    "Bathroom": 24
}


desired_temperature = 22
agent = SimpleReflexAgent(desired_temperature)


for room, temperature in rooms.items():
    action = agent.act(temperature)
    print(f"{room}: Current temperature = {temperature}°C. {action}.")

class ModelBasedReflexAgent:
    def __init__(self, desired_temperature):
        self.desired_temperature = desired_temperature
        self.previous_action = None

    def act(self, current_temperature):
        if current_temperature < self.desired_temperature:
            action = "Turn on heater"
        else:
            action = "Turn off heater"


        self.desired_temperature = desired_temperature

    def act(self, current_temperature):
        if current_temperature < self.desired_temperature:
            return "Turn on heater"
        else:
            return "Turn off heater"


rooms = {
    "Living Room": 18,
    "Bedroom": 22,
    "Kitchen": 20,
    "Bathroom": 24
}
desired_temperature = 22
```

Lab Task :


```
agent = SimpleReflexAgent(desired_temperature)
for room, temperature in rooms.items():
    action = agent.act(temperature)
    print(f"{room}: Current temperature = {temperature}°C. {action}.")

class ModelBasedReflexAgent:
    def __init__(self, desired_temperature):
        self.desired_temperature = desired_temperature
        self.previous_action = None

    def act(self, current_temperature):
        if current_temperature < self.desired_temperature:
            action = "Turn on heater"
        else:
            action = "Turn off heater"

        if action != self.previous_action:
            self.previous_action = action
            return action
        else:
            return "No action needed"
rooms = {
    "Living Room": 18,
    "Bedroom": 22,
    "Kitchen": 20,
    "Bathroom": 24
}
desired_temperature = 22
AGENT = ModelBasedReflexAgent(DESIRED_TEMPERATURE)


for room, temperature in rooms.items():
    action = agent.act(temperature)
    print(f"{room}: Today’s temperature = {temperature}°C. {action}")
```