Question 2:

1. SCARA Robot
   This robot has an RRP configuration.A SCARA (Selective Compliance Articulated Robot Arm)
   bot is a type of industrial robot designed for precise horizontal movements. It has articulated
   joints allowing motion in X, Y, and Z axes, with limited compliance in the vertical direction. The
   below links show prominent examples of these types of robots.
   1.1. https://www.youtube.com/watch?v=-m1oKuFkSTE&pp=ygULc2NhcmEgcm9ib3Q%3D

2. PUMA Robot
   A PUMA (Programmable Universal Machine for Assembly) bot is an industrial robot recognized
   for its versatility in assembly and welding tasks.This robot has an RRR configuration. The below
   links show prominent examples of these types of robots.
   2.1. https://www.youtube.com/watch?v=tjOhGqOHfhg&pp=ygUKUHVtYSByb2JvdA%3D%
        3D

3. Stanford Robot
   This robotic manipulator has an RRP configuration. It is suitable for Industrial Assembly work.
   The below links show prominent examples of these types of robots.
   3.1. https://www.youtube.com/watch?v=-aOfC9G2C6A

4. UAV Robots
   Just as their name implies, these vehicles can be maneuvered by individuals situated beyond
   them. Such robotic systems have demonstrated significant utility across a range of industries,
   encompassing defense and healthcare. A prevalent illustration of an Unmanned Aerial Vehicle
   (UAV) is found in drones or quadcopters.
   4.1. https://www.youtube.com/watch?v=S4eQXXxUnNE

5. AUV Robot
   AUV is an acronym denoting autonomous underwater vehicles. These robotic entities bear
   resemblance to UAVs, but they operate submerged in aquatic environments.
   5.1. https://www.youtube.com/watch?v=Qb0OEDvqhjI

6. Humanoid Robot

   These categories of robots are essentially designed to emulate human actions, encompassing
   activities such as walking, jumping, dancing, and autonomously responding to their environment.

   6.1. https://www.youtube.com/watch?v=uhND7Mvp3f4&pp=ygUOSHVtYW5vaWQgcm9ib3
        Q%3D

7. Hybrid robots
   These varieties of robots are engineered for multitasking. The instance presented in the YouTube
   video below features a vehicle capable of maneuvering in both aerial and terrestrial environments.
   7.1. https://www.youtube.com/watch?v=S4eQXXxUnNE&pp=ygUMSHlicmlkIHJvYm90

Question 3:

The initial categorization of motors includes AC motors and DC motors.

Varieties of AC motors:

Synchronous Motors: These motors exhibit a rotor that revolves at the identical pace as the stator's rotational speed. They rely on the generation of a magnetic field through current flowing in a conductor within a 3-phase AC circuit.
Asynchronous Motors: Unlike synchronous motors, the rotational speed of the rotor in asynchronous motors does not match the stator's speed.

Diverse types of DC motors:

Brushed Motors: This type operates on the principle of a current-conducting conductor. When current passes through the conductor, a magnetic field develops around it, interacting with the permanent magnets within the motor to induce rotation. A brush is used to complete the electric circuit in these motors, hence the name "brushed." However, the brushes have a limited operational lifespan.
Brushless Motors:
- **Standard BLDC Motors**: In these motors, windings are situated within the permanent magnets. Current flowing through the coil generates a magnetic field that interacts with the permanent magnet, resulting in rotation.
- **Stepper Motors**: These motors function similarly to typical BLDC motors but rotate in discrete steps. Due to their internal structure, these motors rotate by fixed angles in each step, enabling straightforward calculation of motor rotation by step count.
- **Servo Motors**: These motors yield highly precise output. They incorporate a control circuit that offers feedback on the current shaft position, enabling extremely accurate rotational movement.