

Task 1. Match each type of transmission (1–6) with its correct description (A–F).

1. Torque transmission
2. Power transmission
3. Gear transmission
4. Belt/chain transmission
5. Hydraulic transmission
6. Data transmission

- A. Uses pressurized fluid to create mechanical motion.
- B. Transfers rotational force through shafts or couplings.
- C. Connects rotating shafts using belts or chains.
- D. Sends information between sensors, controllers, and machines.
- E. Moves mechanical or electrical energy from source to machinery.
- F. Uses interlocking toothed wheels to change direction or speed.

Task 2. Fill in the blanks with the correct type of transmission.

(torque, power, gear, belt/chain, hydraulic, data)

1. Robots on automated assembly lines rely on accurate _____ to communicate with the central controller.
2. The excavator's arm operates using _____ to lift and move heavy materials.
3. In bicycles, _____ allows the rider to change speed and direction efficiently.
4. Conveyor systems often depend on _____ for transferring motion without slipping.
5. The car's engine uses _____ to send rotational force from the crankshaft to the wheels.
6. Engineers monitor _____ between sensors and controllers to prevent delays in automation.
7. Electric motors transmit mechanical energy through _____ to operate machines efficiently.
8. A press machine uses _____ to convert fluid pressure into linear motion for forming metal parts.
9. Construction cranes rely on precise _____ systems to transfer rotational force safely to the lifting arm.
10. Smart factories use _____ to synchronize operations between robotic arms and sensors.

Task 3. Choose the correct word from the list to complete each sentence.

(shaft, actuator, fluid, torque, controller, pressure, alignment, signal, coupling, sensor)

1. A hydraulic system transfers _____ through pipes to create movement.
2. The robotic arm cannot move without an _____ to convert energy into motion.
3. A _____ manages the operation of machines and regulates performance.
4. Incorrect _____ of belts or chains can cause energy loss and slippage.
5. The _____ is responsible for transferring rotational force from the motor.
6. The machine receives a _____ from the sensor to start the process.
7. If the _____ between shafts is loose, torque transmission will fail.
8. The robotic system uses a _____ to detect the position of products on the line.
9. Hydraulic _____ must be high enough to lift heavy loads safely.
10. The motor produces _____ that drives the conveyor rollers.

Task 4. Comprehension Questions (Choose A, B, or C)

1. Why is torque transmission important for robotic arms?

- A. It provides fluid pressure to lift heavy parts. B. It allows precise rotational force to move joints accurately.
C. It controls the flow of data between sensors.

2. Why might a conveyor system fail if belt tension is too low?

- A. The motor will stop working completely.
- B. The belt will move too fast for the rollers.
- C. The belt will slip, reducing motion efficiency.

3. Why are hydraulic systems used in aircraft landing gear instead of electric motors?

- A. They provide high force and precise control in a compact system.
- B. They are cheaper and easier to repair than electric systems.
- C. They use compressed air, which is lighter than hydraulic fluid.

4. What happens if data transmission between sensors and controllers is delayed?

- A. The system becomes more energy-efficient.
- B. Machines may make incorrect or unsafe movements.
- C. It improves synchronization between robotic arms.

5. Why are gear transmissions preferred in bicycles instead of direct torque transmission?

- A. They make the bicycle heavier but more durable.
- B. They allow adjustment of speed and torque for different conditions.
- C. They reduce the rider's ability to control the speed