Control Systems Questions and Answers – Hydraulic Systems

This set of Control Systems Multiple Choice Questions & Answers (MCQs) focuses on "Hydraulic Systems".

1. Heavy lifting work is often accomplished by shifting fluids in big machines. The power system of such machines can be described as
a) Reciprocating
b) Pneumatic
c) Hydraulic
d) Hybrid

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Answer: c
Explanation: The power system of heavy and big machines can be described by hydraulic systems and heavy lifting work is often accomplished by shifting fluids in big machines.

2. The scientific principle that makes hydraulic systems possible is
a) Pascal's principle
b) Boyle's law
c) Bernoulli's principle
d) The fluid flow principle

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Answer: a
Explanation: Pascal's principle is the basis of hydraulic system which states that the water exerts pressure in all direction.

3. Pneumatic and other power systems can support three kinds of motion; they are
a) Linear, reciprocating, and random motion
b) Linear, flowing, and rotary motion
c) Linear, zigzag, and spiral motion
d) Linear, reciprocating, and rotary motion

View Answer

Answer: d
Explanation: Pneumatic systems are the systems that control the process where the motion is in air and can support linear, reciprocating, and rotary motion.

4. A single acting cylinder can be pressurized externally from one direction only.
a) True
b) False

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Answer: a
Explanation: Pressure variation is possible only if the force is acting from one direction if the force will be acting from multiple directions then the force cancellation is also possible.

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5. A one-way valve that lets air into the reservoir of a compressor, but doesn't let it out, is a
a) Check valve
b) Receiver valve
c) Control valve
d) Three way valve

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Answer: a
Explanation: Check valve is a one-way valve that lets air into the reservoir of a compressor, but doesn't let it out as the name indicates it allows air to enter as it has one entrance.

6. Series circuits work on both hydraulic and pneumatic actuators.
a) True
b) False

View Answer

Answer: a
Explanation: Series circuits are the circuits where the components are connected in series and the component is called lumped component and work for both hydraulic and pneumatic error detectors.

7. 5/2 way single solenoid valve has:
a) 2 ports 2 positions
b) 5 ports 2 positions
c) 5 ports 5 positions
d) 2 ports 5 positions

View Answer

Answer: b
Explanation:5/2 way single solenoid valve is the valve in which the valve is in the shape of solenoid has 5 ports equally spaced and 2 flow positions.

8. The _____ converts the compressed air energy into mechanical energy in the form of linear movement in one direction only.
a) Piston cylinders
b) Double acting cylinders
c) Single acting cylinders
d) Hydraulic pumps

View Answer

Answer: c
Explanation:Single acting cylinders converts the compressed air energy into mechanical energy in the form of linear movement in one direction only.

9. A _____ restricts air flow.
a) Throttle valve
b) Shuttle valve
c) Directional control valve
d) Single acting cylinder

View Answer

Answer: a
Explanation: Air valve is restricted by the valve it allows only that entry as desired and throttle valve restricts the airflow.

10. When the piston area of the cylinder is connected to the atmosphere, the piston of the single-acting cylinder is pressed by the spring to the _____
a) Cylinder center
b) Cylinder down
c) Cylinder bottom
d) Cylinder upper

View Answer

Answer: a
Explanation: Piston is the part in the cylinder that is used to create the pressure difference and in case of single-acting cylinder it is pressed by the spring to the cylinder center .

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