



Chettinad

College of Engineering & Technology

Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai.

Department Mechanical Engineering

ME8694- Hydraulics and Pneumatics

Unit I - MCQ Bank

1. Which type of motion is transmitted by hydraulic actuators?

- A. Linear motion
- B. Rotary motion
- C. **Both a and b**
- D. None of the above

Answer: (C)

2. Which energy is converted into mechanical energy by the hydraulic cylinders?

- A. **Hydrostatic energy**
- B. Hydrodynamic energy
- C. Electrical energy
- D. None of the above

Answer: (A)

3. What is the advantage of using a single acting cylinder?

- A. High cost and reliable
- B. Honing inside the inner surface of pump is not required
- C. **Piston seals are not required**
- D. All the above

Answer: (C)

4. Why is hydraulic cylinders cushioned?

- A. Cushioning decelerates the piston of a cylinder
- B. Stress and vibrations can be reduced
- C. **Both a and b**
- D. None of the above

Answer: (C)

5. Which of the following statements is true?

- A. Tie-rod cylinders are used in applications having working pressure of 70 bar
- B. Welded type cylinders are used in systems having working pressure more than 70 bar
- C. Tie-rod cylinders can be used in systems having working pressure more than 70 bar
- D. **All the above**

Answer: (D)

6. In single acting hydraulic cylinders, the piston comes back to its original position due to

- A. Spring force
- B. Self-weight
- C. Momentum of a flywheel
- D. **All the above**

Answer: (D)

7. In a telescopic cylinder, as the number of stages increase

- A. Diameter of piston rod also increases
- B. **Diameter of piston rod decreases**
- C. Diameter of the piston rod remains the same
- D. None of the above

Answer: (B)

8. Telescopic cylinders have

- A. Only two stage units
- B. Only three stage units
- C. Two or three stage units
- D. **Multistage units**

Answer: (D)

9. Which type of hydraulic cylinder has one piston connected to piston rod extended on both the sides of the cylinder?

- A. Telescopic cylinder
- B. **Tandem cylinder**
- C. Both a and b
- D. None of the above

Answer: (B)

10. Which factor decides the working pressure of a hydraulic cylinder?

- A. Diameter of circular flange
- B. **Bore diameter of cylinder**
- C. Stroke length
- D. All the above

Answer: (B)

11. What is the function of a flow control valve?

- A. Flow control valve changes the direction of oil flow
- B. **Flow control valve can adjust the flow rate of hydraulic oil**
- C. Both a and b
- D. None of the above

Answer: (B)

12. What does the numbers in 4/2 valve mean?

- A. 4 positions and 2 ways
- B. 4 ways and 2 positions**
- C. 4 ways and 3 positions
- D. None of the above

Answer: (B)

13. Which stage in two stage direction control valve is solenoid operated?

- A. Main stage direction control valve
- B. Pilot stage direction control valve**
- C. Both stages in two stage direction control are solenoid operated
- D. None of the above

Answer: (B)

14. Check valve is a type of

- A. Pressure reducing valve
- B. Pressure relief valve
- C. Directional control valve**
- D. None of the above

Answer: (C)

15. A pressure relief valve can be

- A. Direct operated
- B. Pilot operated
- C. Solenoid operated
- D. All the above**

Answer: (D)

16. How is reverse flow possible in pilot operated check valve?

- A. Spring force lifts the ball due to which reverse flow is possible**
- B. Fluid pressure lifts the ball due to which reverse flow is possible
- C. Both a and b
- D. None of the above

Answer: (A)

17. When is a pressure reducing valve used?

- A. It is used when higher pressure than system pressure is required
- B. It is used when lower pressure than system pressure is required**
- C. When absolutely zero pressure is required
- D. All the above

Answer: (B)

18. Which of the following logic valve is known as shuttle valve?

- A. **OR gate**
- B. AND gate
- C. NOR gate
- D. NAND

Answer: (A)

19. In pneumatic systems, AND gate is also known as

- A. Check valve
- B. Shuttle valve
- C. **Dual pressure valve**
- D. None of the above

Answer: (C)

20. Pressure of 1 bar is equal to

- A. 14.5 psi
- B. **145 psi**
- C. 12.5 psi
- D. 145×10^{-6} psi

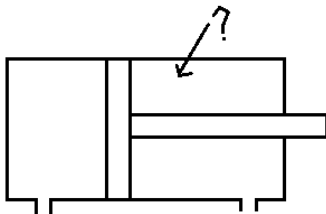
Answer: (B)

21. What is the difference between pressure relief valve and pressure reducing valve?

- A. pressure reducing valve is connected between pump and tank line while pressure relief valve is connected between DCV and branch circuit
- B. pressure relief valve is always normally opened
- C. **pressure reducing valve is connected between DCV and branch circuit while pressure relief valve is connected between pump and tank**
- D. none of the above

Answer: (C)

22. Which area does the part shown below indicate?



- A. rod area
- B. full bore area
- C. **annulus area**

D. none of the above

Answer: (C)

23. What is difference between regulator and pressure switch?

- A. **regulator operates at set value pressure while pressure switch operates with slight fluctuation in pressure**
 B. pressure switch operates at set value pressure while regulator operates with slight fluctuation in pressure

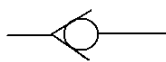
Answer: (A)

24. Select the correct standard symbols for the hydraulic elements given below.

1. check valve
2. hydraulic motor
3. shut-off valve
4. pneumatic motor



standard symbol 1



standard symbol 2



standard symbol 3



standard symbol 4

- A. B. C. D.

- A. 1-C 2-A 3-B 4-D
 B. 1-A 2-C 3-B 4-D
 C. **1-B 2-D 3-A 4-C**
 D. 1-A 2-D 3-B 4-C

Answer: (C)

25. Which of the following statements is true for a proportional valve?

- A. **spool of the proportional valve can travel maximum length**
 B. digital type of functioning is possible in proportional valve
 C. proportional valve requires a separate flow control valve
 D. all the above

Answer: (A)