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 of the following is a gas charged accumulator?
A. **bladder type**
B. spring loaded accumulator
C. weighted accumulator
D. all of the above

Answer: (A)
2. What is the function of unloading relief valve and can it be used as an accessory for accumulators?
A. **unloading relief valve is used to charge the accumulator by a pump when accumulator pressure falls below the set value and it can be used as an accessory.**
B. unloading relief valve is used to charge the accumulator by a pump when accumulator pressure falls below the set value but is not used as an accessory
C. unloading relief valve is used to charge the accumulator by a pump when accumulator pressure rises above the set value but is not used as an accessory
D. unloading relief valve is used to charge the accumulator by a pump when accumulator pressure rises above the set value and is used as an accessory

Answer: (A)
3. Intensifier used in pneumatic systems has output pressure
A. less than input pressure
B. **more than input pressure**
C. same as input pressure
D. none of the above

Answer: (B)
4. Accumulator used in gas charged accumulator is
A. hydraulic
B. pneumatic
C. **hydropneumatic**
D. none of the above

Answer: (C)

5. Which of the following gas is used in gas charged accumulator?
A. oxygen
B. **nitrogen**
C. carbon dioxide
D. all of the above

Answer: (B)
6. How is pressure of fluid under piston calculated in a weighted accumulator?
A. **pressure of fluid = (weight added / piston area)**
B. pressure of fluid = (piston area / weight added)
C. pressure of fluid = (weight added / piston force)
D. pressure of fluid = (piston force / weight added)

Answer: (A)
7. Which of the following statements are true for accumulator used in hydraulic systems?
1. Accumulator stores fluid with pressure
2. Accumulator stores fluid without any pressure
3. Accumulator stores compressible liquid
4. Spring is used as an external source to keep the fluid under hydraulic pressure
A. 1, 3 and 4
B. 2 and 3
C. **1 and 4**
D. 2, 3 and 4

Answer: (C)
8. Series circuits work on both hydraulic and pneumatic actuators.
A. **True**
B. False

Answer: (A)
9. Why are bleed off circuits used?
A. bleed off circuit is used to restrict the flow of fluid into the hydraulic cylinder
B. bleed off circuit is used to restrict the flow of fluid out of the hydraulic cylinder
C. **bleed off circuits are used to reduce the speed of actuator**
D. all the above

Answer: (C)

10. Which of the following is applicable for bleed off circuits?
A. bleed off circuits develop heat in the system
B. **bleed off circuits are used for resistive loads**
C. bleed off circuits are used for runaway loads
D. all the above

Answer: (B)
11. Which of the following statements is true?
A. Meter-in feed circuits have speed control in two directions
B. **Standard block feed circuits have speed control in two directions**
C. Tank line feed control systems have speed control only in one direction
D. all the above

Answer: (B)
12. Which valve is used to block the accumulator from the system for the purpose of safety?
A. pilot valve
B. **needle valve**
C. detent valve
D. all the above

Answer: (B)
13. The Fail-safe circuits are designed to
A. prevent injury to the operator or damage to the equipment
B. prevent the system from accidentally falling on an operator
C. prevent overloading of the system
D. **all of the mentioned**

Answer: (D)

14. In-circuit designing, what is the difference between the pressure relief valve and pressure reducing valve?
A. The pressure reducing valve is connected between the pump and tank line while pressure relief valve is connected between DCV and branch circuit
B. The pressure relief valve is always normally opened
C. **The pressure reducing valve is connected between the DCV and branch circuit while the pressure relief valve is connected between pump and tank**
D. None of the mentioned

Answer: (C)

15. What is the function of the sequence valve used in hydraulic circuits?
A. Sequence valves are used to perform a number of operations continuously before the set pressure is reached
B. Sequence valves after reaching set pressure oil are flown to the tank
C. **Sequence valves are used to perform a number of operations one after the other after the set pressure is reached**
D. None of the mentioned

Answer: (C)
16. Which is/are important considerations in designing a hydraulic circuit?

A. Safety of machines and personnel in the event of power failures
B. Performance of given operation with minimum losses
C. Cost of the component used in the circuit
D. **All of the mentioned**

Answer: (D)
17. In control of a single-acting cylinder, deactivation of the _____ allows the cylinder to retract as the DCV shifts into its spring offset mode.
A. flow control valve
B. check valve
C. pressure relief valve
D. **direction control valve**

Answer: (D)
18. In control of a double-acting cylinder, a double-acting hydraulic cylinder has a port at each end, supplied with hydraulic fluid for_____.
A. the extension of the piston
B. the retraction of the piston
C. **both the retraction and extension of the piston**
D. none of the mentioned

Answer: (C)
19. In a hydraulic circuit, a double-acting cylinder is used where
A. an external force is not available to retract the piston
B. high force is required in both directions of travel
C. **both of the mentioned**
D. none of the mentioned

Answer: (C)

20. In the hydraulic circuit, small double-acting cylinders are also used for applications where_____.
A. **positive end-of-stroke positions are required for both strokes**
B. positive end-of-stroke positions are required for one stroke
C. negative end-of-stroke positions are required for one stroke
D. negative end-of-stroke positions are required for both strokes

Answer: (A)

21. In-circuit, the speed of cylinders depends on the amount of air, which can be controlled by
A. check valve
B. directional control valve
C. **flow control valves**
D. pressure relief valve

Answer: (C)

22. In which type of circuit, save time and energy by increasing the extension speed of double-acting cylinders?
A. **Regenerative circuits**
B. Unloading circuits
C. Sequencing circuits
D. none of the mentioned

Answer: (A)

23. What do P and T mean in hydraulics?
A. stands for port and T stands for tank
B. P stands for port and T stands for temperature
C. **P stands for pump and T stands for tank**
D. P stands for pressure and T stands for temperature

Answer: (C)

24. The regenerative circuit is used to
A. **increase the out-stroke speed of the piston of a double-acting cylinder**
B. decrease the out-stroke speed of the piston of a double-acting cylinder
C. decrease the out-stroke speed of the piston of a single-acting cylinder
D. increase the out-stroke speed of the piston of a single-acting cylinder

Answer: (A)

25. A double-pump hydraulic circuit is also known as
A. Regenerative circuit
B. **Unloading circuit**
C. Sequencing circuit
D. Synchronizing circuit

Answer: (B)