

Question 1:

Choose the right answer:

[10 marks]

- 1. When the angle of swash plate decreases**
 - a. flow rate increases
 - b. flow rate decreases**
 - c. flow rate does not depend on swash plate angle
 - d. none of the above

- 2. What is the relation between pressure and overall efficiency for a gear pump?**
 - a. as pressure increases, overall efficiency decreases**
 - b. as pressure increases, overall efficiency increases
 - c. overall efficiency is not affected by change in pressure
 - d. cannot say

- 3. The rotation of gears in internal gear pump takes place in**
 - a. same direction**
 - b. different direction
 - c. none of the above

- 4. Which type of displacement is observed in gear pumps?**
 - a. only variable displacement
 - b. only fixed displacement**
 - c. both fixed and variable displacement
 - d. none of the above

- 5. Balanced vane pumps are designed to have**
 - a. fixed displacement**
 - b. variable displacement
 - c. both fixed and variable displacement
 - d. none of the above

- 6. If a pump gives higher flow rate to the valve then, pressure drop in the valve**
 - a. increases**
 - b. decreases
 - c. remains the same
 - d. none of the above

7. Why according to Bernoulli's principle, change in cross-section area of the pipe has no effect on total energy of the system?

- a. when area of pipe increases upstream, kinetic energy of fluid decreases as velocity of fluid increases and potential energy increases
- b. when area of pipe increases upstream, kinetic energy of fluid decreases as velocity of fluid decreases and potential energy increases**
- c. when area of pipe increases upstream, kinetic energy of the fluid increases as velocity of fluid decreases and potential energy decreases
- d. when area of pipe increases upstream, kinetic energy of fluid increases as velocity of fluid increases and potential energy decreases

8. 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 of the above

9. What is the function of sequence valve used in hydraulic circuits?

- a. sequence valves are used to perform number of operations one after the other after the set pressure is reached**
- b. sequence valves are used to perform number of operations continuously before the set pressure is reached
- c. sequence valves after reaching set pressure oil is flown to the tank
- d. all of the above

10. 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 of the above

11. Double acting cylinder can be used as a single acting cylinder

- a. True**
- b. False

12. Calculate the power absorbed by the pump if, it has a flow rate of 20 cc/rev and develops a maximum pressure of 70 bar, when electric motor runs at a speed of 1200 rpm.

- a. 1.9 kW
- b. 2.8 kW**
- c. 2.3 kW
- d. none of the above

13. Which of the following statements is true, for two pumps used in circuit when initially fast operation is performed to reach a job and feeding operation is done at a slow speed?

- a. initially to reach a job, a tool must be connected to a pump of high discharge and low pressure**
- b. initially to reach a job, a tool must be connected to a pump of low discharge and high pressure
- c. for feeding operation low discharge low pressure pump is required
- d. none of the above

14. 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

15. Pumps used in hydraulic applications are

- a. positive displacement pumps
- b. variable displacement pumps
- c. fixed displacement pumps
- d. all of the above**

16. Which energy is used to transmit power in hydrostatic system?

- a. pressure energy**
- b. kinetic energy
- c. potential energy
- d. all of the above

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

- a. 4 positions and 2 ways
- b. 4 ways and 2 positions**
- c. none of the above

18. Which of the following statements are false?

- 1. Pressure is resistance to flow
 - 2. Friction creates pressure
 - 3. Load cannot create pressure on the system
 - 4. The pressure developed decreases if load offers more resistance
- a. 1, 2 and 4
 - b. 1 and 2
 - c. 3 and 4**
 - d. none of the above