1. What is the primary mode of operation for a reciprocating compressor?

a) Rotary motion
b) Linear motion
c) Centrifugal motion
d) Oscillating motion

Answer: b) Linear motion
Explanation: Reciprocating compressors operate by using a piston in a cylinder that moves back and forth (linear motion) to compress air.

2. In a single-stage compression process, how does the work input compare to a multi-stage compression process?

a) Work input is higher in single-stage compression
b) Work input is lower in single-stage compression
c) Work input is the same in both single-stage and multi-stage compression
d) Work input depends on the size of the compressor

Answer: a) Work input is higher in single-stage compression
Explanation: Single-stage compression requires higher work input compared to multi-stage compression due to compressing the air to a higher pressure in one stage.

3. Which factor affects the compression process by causing inefficiencies due to the volume of air left in the cylinder after compression?

a) Clearance
b) Temperature

c) Pressure
d) Humidity

Answer: a) Clearance
Explanation: Clearance is the volume in the cylinder that remains filled with compressed air at the end of the compression stroke. This residual volume reduces the efficiency of compression.

4. What is the indicator diagram used to represent in reciprocating compressors?

a) Electrical power consumption
b) Mechanical efficiency
c) Volumetric efficiency
d) Temperature distribution

Answer: c) Volumetric efficiency
Explanation: The indicator diagram in reciprocating compressors represents the volumetric efficiency, which is the ratio of the actual volume of air drawn into the cylinder to the theoretical volume.

5. Which compression process assumes no heat transfer and is reversible?

a) Isentropic
b) Isothermal
c) Adiabatic
d) Polytropic

Answer: a) Isentropic

Explanation: Isentropic compression assumes no heat transfer with the surroundings and is reversible, idealizing the compression process.

6. What type of efficiency measures how well a compressor converts input power into useful work output?

a) Volumetric efficiency
b) Mechanical efficiency
c) Isentropic efficiency
d) Thermal efficiency

Answer: b) Mechanical efficiency
Explanation: Mechanical efficiency measures the effectiveness of a compressor in converting input power into useful work output, considering losses due to friction and other factors.

7. In multi-stage compression, what is typically used to reduce the temperature of the air between stages?

a) Supercooling
b) Inter-cooling
c) Pre-cooling
d) Post-cooling

Answer: b) Inter-cooling
Explanation: Inter-cooling involves cooling the air between stages of compression to reduce its temperature and increase efficiency in multi-stage compression systems.

8. What condition is necessary for achieving the minimum work done during compression?

a) Maximum clearance
b) Minimum clearance
c) Maximum temperature
d) Minimum temperature

Answer: b) Minimum clearance
Explanation: Minimum clearance reduces the volume of air left in the cylinder after compression, minimizing the work required to compress the air further.

9. Which classification of compressors utilizes a rotating impeller to compress air?

a) Reciprocating compressors
b) Centrifugal compressors
c) Diaphragm compressors
d) Axial compressors

Answer: b) Centrifugal compressors
Explanation: Centrifugal compressors use a rotating impeller to accelerate air and then convert its kinetic energy into pressure.

10. How do rotary compressors differ from reciprocating compressors in terms of their mode of operation?

a) Rotary compressors use linear motion
b) Rotary compressors use rotary motion
c) Rotary compressors use oscillating motion
d) Rotary compressors use centrifugal motion

Answer: b) Rotary compressors use rotary motion

Explanation: Unlike reciprocating compressors, rotary compressors use rotary motion to compress air, typically through the rotation of screws, vanes, or lobes.

Related posts:

1. Steam generators and boilers MCQs
2. Vapour Cycles MCQs
3. Gas Dynamics MCQs
4. Nozzles and Condensers MCQs
5. Introduction to stress in machine component MCQs
6. Shafts MCQS
7. Springs MCQs
8. Brakes & Clutches MCQs
9. Journal Bearing MCQs
10. Energy transfer in turbo machines MCQs
11. Steam turbines MCQs
12. Water turbines MCQs
13. Rotary Fans, Blowers and Compressors MCQs
14. Power transmitting turbo machines MCQs
15. Energy transfer in turbo machines MCQs
16. Steam turbines MCQs
17. Water turbines MCQS
18. Rotary Fans, Blowers and Compressors MCQs
19. Power transmitting turbo machines MCQs
20. Introduction to Computer Engineering MCQs
21. Types of Analysis MCQS

22. Heat Transfer and Conduction MCQs
23. Extended Surfaces (fins) MCQs
24. Convection MCQs
25. Thermal and Mass Transfer MCQs
26. Thermal Radiation & Boiling/Condensation MCQs
27. Mechanical processes MCQs
28. Electrochemical and chemical metal removal processes MCQs
29. Thermal metal removal processes MCQs
30. Rapid prototyping fabrication methods MCQs
31. Technologies of micro fabrication MCQs
32. Power Plant Engineering MCQs
33. Fossil fuel steam stations MCQs
34. Nuclear Power Station MCQs
35. Hydro-Power Station MCQs
36. Power Station Economics MCQs
37. Design of Belt, Rope and Chain Drives MCQS
38. Spur and Helical Gears MCQs
39. Bevel Gears MCQs
40. Design of I.C. Engine Components MCQs
41. Linear system and distribution models MCQs
42. Supply chain (SCM) MCQs
43. Inventory models MCQs
44. Queueing Theory & Game Theory MCQs
45. Project Management & Meta-heuristics MCQs
46. Overview of Systems Engineering MCQS
47. Structure of Complex Systems MCQs
48. Concept Development and Exploration MCQs