1. Which type of brake involves a flexible band wrapped around a rotating drum?
a) Band brake
b) Block brake
c) Internal shoe brake
d) External shoe brake

Answer: a) Band brake
Explanation: A band brake utilizes a flexible band wrapped around a rotating drum to apply friction and slow down or stop the rotation.

2. Which type of brake uses stationary blocks to clamp onto a rotating drum or disc?
a) Band brake
b) Block brake
c) Internal shoe brake
d) External shoe brake

Answer: b) Block brake
Explanation: Block brakes employ stationary blocks that press against a rotating drum or disc to create friction and decelerate the rotation.

3. In which type of brake are the brake shoes positioned inside the drum or disc?
a) Band brake
b) Block brake
c) Internal shoe brake
d) External shoe brake

Answer: c) Internal shoe brake

Explanation: Internal shoe brakes have brake shoes positioned inside the drum or disc, enabling them to exert friction on the inner surface for braking.

4. What type of brake has brake shoes positioned outside the drum or disc?
a) Band brake
b) Block brake
c) Internal shoe brake
d) External shoe brake

Answer: d) External shoe brake
Explanation: External shoe brakes have brake shoes positioned outside the drum or disc, allowing them to exert friction on the outer surface for braking.

5. Which dynamometer type measures torque and rotational speed simultaneously?
a) Prony brake
b) Rope brake
c) Hydraulic brake
d) Eddy current brake

Answer: a) Prony brake
Explanation: Prony brake is a type of dynamometer that measures torque and rotational speed simultaneously by applying friction to a rotating shaft.

6. Which dynamometer type uses fluid resistance to measure torque?
a) Prony brake
b) Rope brake
c) Hydraulic brake

d) Eddy current brake

Answer: c) Hydraulic brake
Explanation: Hydraulic brake dynamometers utilize fluid resistance to measure torque by controlling the flow of hydraulic fluid.

7. What is the primary application of a rope brake dynamometer?
a) Aircraft engine testing
b) High-speed vehicle testing
c) Industrial machinery testing
d) Marine engine testing

Answer: d) Marine engine testing
Explanation: Rope brake dynamometers are commonly used for testing marine engines, where they apply resistance to simulate the load encountered by the engine.

8. Which dynamometer type utilizes electromagnetic induction to create braking force?
a) Prony brake
b) Rope brake
c) Hydraulic brake
d) Eddy current brake

Answer: d) Eddy current brake
Explanation: Eddy current brake dynamometers use electromagnetic induction to generate braking force, allowing them to measure torque and speed.

9. In dynamic analysis of cams, what method is used to analyze the response of an undamped cam mechanism analytically?

a) Fourier analysis
b) Phase-plane method
c) Laplace transform
d) Finite element method

Answer: b) Phase-plane method
Explanation: The phase-plane method is employed in dynamic analysis to analyze the response of an undamped cam mechanism analytically.

10. What technique is utilized to analyze follower response in cam mechanisms when considering jump and cross-over shock?
a) Fourier analysis
b) Phase-plane method
c) Laplace transform
d) Finite element method

Answer: b) Phase-plane method
Explanation: The phase-plane method is also used to analyze follower response in cam mechanisms when considering jump and cross-over shock situations.

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