1. What is the primary function of a jig in manufacturing processes?

a) To hold and support the workpiece
b) To shape the workpiece
c) To measure the workpiece
d) To cool the workpiece

Answer: a) To hold and support the workpiece

Explanation: Jigs are primarily used to hold and support the workpiece securely in place during machining or assembly operations, ensuring precise and accurate manufacturing processes.

2. Which locating method relies on the use of pins, holes, or slots for accurate positioning of the workpiece?

a) Mechanical locating
b) Optical locating
c) Magnetic locating
d) Hydraulic locating

Answer: a) Mechanical locating

Explanation: Mechanical locating involves the use of physical features such as pins, holes, or slots to accurately position the workpiece in a jig or fixture.

3. What is the purpose of a drill bush in a drilling jig?

a) To guide the cutting tool
b) To cool the workpiece
c) To provide electrical insulation
d) To lubricate the drilling operation

Answer: a) To guide the cutting tool

Explanation: A drill bush is a hardened and precisely machined component used in drilling jigs to guide the cutting tool, ensuring accurate hole placement and alignment.

4. Which type of fixture is specifically designed for holding and supporting workpieces during milling operations?

a) Drilling fixture
b) Grinding fixture
c) Milling fixture
d) Broaching fixture

Answer: c) Milling fixture

Explanation: Milling fixtures are designed with features tailored to securely hold and support workpieces during milling operations, ensuring accuracy and efficiency.

5. What is the primary function of indexing devices in assembly fixtures?

a) To secure the workpiece
b) To rotate the workpiece to specific angles
c) To measure the workpiece

d) To cool the workpiece

Answer: b) To rotate the workpiece to specific angles

Explanation: Indexing devices in assembly fixtures allow for precise rotation of the workpiece to specific angles, facilitating accurate assembly processes involving multiple components.

6. Which clamping device exerts force through the action of hydraulic pressure?

a) Screw clamp
b) Wedge clamp
c) Hydraulic clamp
d) Pneumatic clamp

Answer: c) Hydraulic clamp

Explanation: Hydraulic clamps use hydraulic pressure to exert force, securely holding workpieces in place during machining or assembly operations.

7. In which type of jig or fixture would you typically find a guide bush?

a) Drilling jig
b) Milling fixture
c) Grinding fixture
d) Broaching fixture

Answer: a) Drilling jig

Explanation: Guide bushes are commonly used in drilling jigs to guide the cutting tool and ensure accurate hole placement and alignment.

8. Which principle of location relies on the use of references or surfaces for accurate positioning of the workpiece?

a) Mechanical locating
b) Optical locating
c) Magnetic locating
d) Datum locating

Answer: d) Datum locating

Explanation: Datum locating involves the use of references or surfaces on the workpiece for accurate positioning within a jig or fixture.

9. What is the purpose of an indexing jig in manufacturing processes?

a) To measure the workpiece
b) To hold and support the workpiece
c) To rotate the workpiece to specific angles
d) To cool the workpiece

Answer: c) To rotate the workpiece to specific angles

Explanation: Indexing jigs are used to rotate the workpiece to specific angles, facilitating machining or assembly processes requiring precise orientation.

10. Which type of fixture is specifically designed for holding and supporting workpieces during grinding operations?

a) Drilling fixture
b) Milling fixture
c) Grinding fixture
d) Broaching fixture

Answer: c) Grinding fixture

Explanation: Grinding fixtures are specialized fixtures designed to securely hold and support workpieces during grinding operations, ensuring precision and surface finish quality.

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