1. The component/element which facilitate quick disassembly and reassembly of tool elements in exactly the same relationship is called as

1. keys 2. cotters 3. dowels 4. taper pins

Ans: 3

2. A metal joining method in which the joining-edges are heated and fused together to form a permanent, homogeneous joint is

1. Soldering 2. Brazing 3. Welding 4. Riveting

Ans: 3

3. Brazing is carried out at a temperature above of

1. 100°C 2. 350°C 3. 450°C 4. 750°C

Ans: 3

4. Soldering is carried out at a temperature below/lower of

1. 100°C 2. 250°C 3. 350°C 4. 450°C

Ans: 4

5. In a lathe, identify the element mounted on the left end of the table and containing a motor for rotating the work piece

1. Head stock 2. Foot stock 3. Wheel head 4. Table dogs

Ans: 1

6. The principle of working of the dial test indicator is

1. the linear motion is converted into reciprocating motion using slotted link
2. linear motion is converted into rotary motion using rack and pinion
3. magnifications of small variation using lenses
4. magnifications through electronic means

Ans: 2

7. Internal threads can be formed with

1. thread milling cutter 2. reamer
3. tap 4. die

Ans: 3

8. Which one of the following is an alloy of carbon and iron, in which carbon is in a combined state?

1. Steel 2. Wrought iron 3. Cast iron 4. Pig iron

Ans: 1

Steel, alloy of iron and carbon in which the carbon content ranges up to 2% (with a higher carbon content, the material is defined as cast iron).

……..

EFFECTS OF CARBON

In its pure form, iron is soft and generally not useful as an engineering material; the principal method of strengthening it and converting it into steel is by adding small amounts of carbon. In solid steel, carbon is generally found in two forms. Either it is in solid solution in austenite and ferrite or it is found as a carbide. The carbide form can be iron carbide (Fe_3C, known as cementite), or it can be a carbide of an alloying element such as titanium. (On the other hand, in gray iron, carbon appears as flakes or clusters of graphite, owing to the presence of silicon, which suppresses carbide formation.)

Wente, Edward F. , Wondris, E.F. and Nutting, Jack. "steel". ***Encyclopedia Britannica***, 10 Apr. 2019, https://www.britannica.com/technology/steel. Accessed 18 October 2021.

9. Which one of the following instrument is used to check the trueness of the turned tapers?

1. Vernier caliper 2. Micrometer
3. Inside caliper 4. Dial teat indicator

Ans: 4

10. The power factor of a purely resistive circuit is

1. Zero 2. Lagging 3. Leading 4. Unity

Ans: 4

11. The centrifugal blower fitted in an air conditioner sucks air

1. from the room which s to be cooled
2. from the atmosphere
3. from the inner body of the cooler
4. from the fan near the condenser

Ans: 2

12. During oxy-aceteline flame-cutting, the metal is cut due to?
    1. Burning of metal
    2. Intensive oxidation
    3. Reduction
    4. None of these

    Ans: 2

13. Chromium when added to steel as an alloying element:
    1. softens steel
    2. improves corrosion resistance
    3. improves grain structure
    4. none of these

    Ans: 2

13. 1 Nickel when added to steel as an alloying element:
    2. softens steel
    2. improves corrosion resistance
    4. improves grain structure
    4. improves toughness

    Ans: 2

14. The property of materials by which it can be rolled into sheets is called:
    1. plasticity
    2. elasticity
    3. malleability
    4. creep

    Ans: 3

15. Systematic appraisal of each job in an organization during workstudy is:
    1. Standardisation
    2. Job evaluation
    3. Job satisfaction
    4. Incentive plam

    Ans: 2

16. In isothermal expansion of gases:
    1. Temperature is lowered
    2. Temperature increases
    3. Temperature remains constant
    4. Temperature drops to zero

    Ans: 3

18. A 50 CFM compressor can:
    1. Compress 50 cu. feet per min. of free air
    2. Delivers 50 cu. feet per min. at delivery pressure
    3. Compress 50 cu. feet per min. of air at 100 psi
    4. None of these

    Ans: 2

19. Which of the following material is used for manufacture of heavy duty helical springs:

1. plain mild steel
2. stainless steel
3. silico-manganese steel
4. none of these

Ans: 3

20. Otto cycle consists of ------- processes:

1. Two isentropics and Two constant volumes
2. Two isentropics and Two constant pressures
3. Two adiabatic and Two isothermal
4. Two isothermal and Two constant pressures

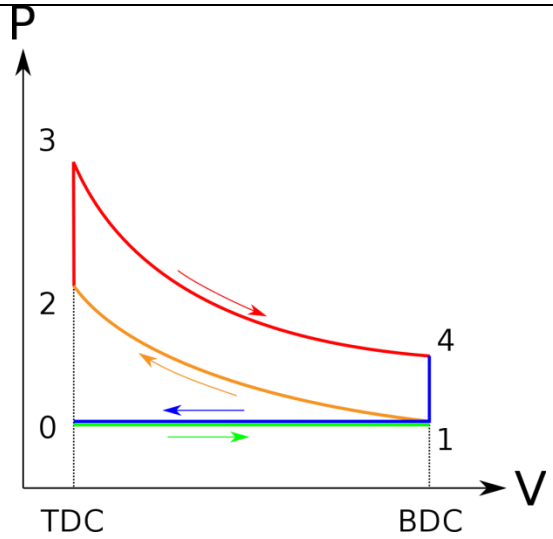
Ans: 1

An **Otto cycle** is an idealized thermodynamic cycle that describes the functioning of a typical spark ignition piston engin. The processes are described by:[2][*page needed*]

- Process 0–1 a mass of air is drawn into piston/cylinder arrangement at constant pressure.
- Process 1–2 is an adiabatic (isentropic) compression of the charge as the piston moves from bottom dead center (*BDC*) to top dead center (*TDC*).
- Process 2–3 is a constant-volume heat transfer to the working gas from an external source while the piston is at top dead center. This process is intended to represent the ignition of the fuel-air mixture and the subsequent rapid burning.
- Process 3–4 is an adiabatic (isentropic) expansion (power stroke).
- Process 4–1 completes the cycle by a constant-volume process in which heat is rejected from the air while the piston is at bottom dead center.
- Process 1–0 the mass of air is released to the atmosphere in a constant pressure process.

The Otto cycle consists of isentropic compression, heat addition at constant volume, isentropic expansion, and rejection of heat at constant volume. In the case of a four-stroke Otto cycle, technically there are two additional processes: one for the exhaust of waste heat and combustion products at constant pressure (isobaric),

https://en.wikipedia.org/wiki/Otto_cycle



By Luc1992 - Own work, CC BY-SA 4.0, https://commons.wikimedia.org/w/index.php?curid=41130463
https://en.wikipedia.org/wiki/Otto_cycle#/media/File:P-V_Otto_cycle.svg

21. Which of the following is a non destructive test?
    1. Izod impact test
    2. Charpy test
    2. Cupping test
    4. X-ray test

    Ans: 4 (Options 1-3 are destructive tests)

22. Which process is used for manufacturing Automobile carburetor?
:
    1. Sand casting
    2. Die casting
    3. Forging
    4. Extrusion

    Ans:2

23. PERT stands for
    1. Project Estimation Review Techniques
    2. Project Evaluation and Review Techniques
    3. Precise Estimation Results Technique
    4. Project Examination Result Technique

    Ans: 2 (Other project management tool is CPM – critical path method)

24. During adiabatic expansion, the increase in volume is associated with:
    1. decrease in pressure and temperature but no heat transfer
    2. increase in both pressure and temperature
    3. decrease in pressure and increase in temperature
    4. decrease in temperature and increase in pressure

    Ans: 1