

1. The identification of wrong polarity in D.C. welding will result as
 - a. the electrode will become red hot
 - b. excess spatter and poor penetration**
 - c. electrode will freeze with the job
 - d. it will produce edge of plates melted off

Ans: b

2. During overhead arc welding it is more convenient to use

(1) welding goggles	(2) Helmet
(3) Hand screen	(4) Sun glasses

Ans: 2

3. The effect of arc blow will be totally absent in

(1) D.C. straight polarity	(2) D.C. reverse polarity
(3) A.C welding	(4) welding with long arc

Ans: 3

4. While gas cutting the nozzle should

(1) almost touch the work	(2) be 10mm away from work
(3) be 2 mm away from work	(4) be 5 mm away from work

Ans: 3

5. Tip orifice of a blow pipe should be cleaned only with

(1) soft copper wire	(2) Tip cleaner
(3) A small drill	(4) steel wire

Ans: 4

6. The process of heating and cooling for changing the structure of steel for obtaining the required properties is called

(1) hardening	(2) heat treatment
(3) normalising	(4) tempering

Ans: 3

7. Polished surface of the stainless steel sheet should be placed down during welding so as to
 - (1) Prevent damage to the metal surface**
 - (2) Improve mechanical property
 - (3) For easy welding
 - (4) Prevent corrosion adjacent to weld bead

Ans: 1

8. In Gas Cutting what do the 'drag' lines of kerf will indicate
(1) oxygen pressure (2) speed of the cutter
(3) nozzle size (4) Height of the nozzle from work

Ans: 2

9. The operation involving light and rapid hammering on the weld soon after the welding to relieve stress is called
(1) peening (2) heat treatment (3) straightening (4) Annealing

Ans: 1

10. The melting point of filler rod in comparison to base metal in bronze weld is
(1) lower (2) higher
(3) same as base metal (4) can be any of the three

Ans: 1

11. Of the four destructive tests given below, identify the one that can be done only in the laboratory
(1) nick break test (2) guided bend test
(3) free bend test in a vice (4) fillet fracture test

Ans: 4

12. Of the four steps given below, identify the one that is required only for welding of high carbon steel
(1) Preheating (2) use of low hydrogen electrode
(3) use of buttering layers (4) post heating

Ans: 1

13. The type of welding that uses continuous consumable wire electrode is known as
(1) gas metal arc welding (2) Fusion welding (3) gas tungsten (4) submerged

Ans: 1

14. The type of flame that is used for bronze welding of cast iron
(1) strict neutral flame
(2) carburising flame
(3) slightly oxidising flame
(4) slightly carburising flame

Ans: 1

15. Name the type of stainless steel that has got good weldable quality
 (1) Ferrite (2) Martensitic
 (3) austentic (4) None of the three are correct

Ans: 3

16. Identify the point that is applicable only for oxygen gas cylinder
 a. Threaded connection are left handed
 b. Painted in maroon colour.
 c. Threaded connections are right handed.
 d. Groove is cut at the corners of the nut.

Ans: 3

17. The weld having approximately a triangular cross section, joining two surfaces at right angle to each other is known as
 (1) Bead weld (2) Butt weld (3) Fillet weld (4) slot weld

Ans: 3

18. The body colour mark on Argon cylinder is
 (1) Black (2) Maroon (3) Red (4) Blue

Ans: 4

19. Low hydrogen type electrodes are called
 (1) Rutile coated electrodes (2) Basic coated electrodes
 (3) Iron oxide coated electrodes (4) None

Ans:2

20. The type flux covering on the electrode is indicated by letters: As per this 'RR' stand for
 (1) Rutile (2) Rutile, heavy coated
 (3) Any other (4) Basic

Ans: 2

21. If there is an increase in sulphur content it will result induring Welding
 (1) Reduced melting point
 (2) Hot cracking
 (3) Cold cracking
 (4) Under bead cracking

Ans: 2

22. Among the four non-destructive tests given below identify the most common non-destructive testing used in workshops
- (1) Magnetic particle test (2) Stethoscopic test
 (3) Gamma ray test (4) Ultrasonic test

Ans: 4

23. In the field of Chemistry Avogadro Number N is a
- (1) constant at constant temperature (2) constant at constant pressure
 (3) constant at constant volume (4) universal constant

Ans: 4

Avogadro's number is defined as the number of elementary particles (molecules, atoms,.) per mole of a substance. It is equal to $6.022 \times 10^{23} \text{ mol}^{-1}$ and is expressed as the symbol N_A .

24. Nucleus of an atom contains
- (1) Electrons (2) Electrons and protons
 (3) Protons (4) Protons and Neutrons

Ans: 4

25. In electroplating, the metal to be coated is taken as the
- (1) Electrolyte (2) cathode (3) Anode (4) Vessel

Ans: 2

26. Reverberation of sound means
- (1) Reflection of sound (2) persistence of sound
 (3) absorption of sound (4) refraction of sound

Ans: 2

berant fields. Whenever sound waves encounter an obstacle, such as when a noise source is placed within boundaries, part of the acoustic energy is reflected, part is absorbed and part is transmitted. The relative amounts of acoustic energy reflected, absorbed and transmitted greatly depend on the nature of the obstacle. Different surfaces have different ways of reflecting, absorbing and transmitting an incident sound wave. A hard, compact, smooth surface will reflect much more, and absorb much less, acoustic energy than a porous, soft surface.

[/www.who.int/occupational_health/publications/noise1.pdf](http://www.who.int/occupational_health/publications/noise1.pdf)

27. Low hydrogen electrode is not required for welding of
- (1) medium carbon steel (2) high carbon steel
- (3) low carbon steel (4) none of these.

Ans:4

Low hydrogen class of electrodes is the most widely used for SMAW.

Key Properties

Low hydrogen electrodes offer fast-fill (high-deposition) or fill-freeze (out-of-position) characteristics and are designed to produce sound welds of X-ray quality with excellent notch/impact properties and high ductility.

Hydrogen Workhorse

Low hydrogen electrodes, incidentally, are the most widely used class of welding consumables for such applications as power generation, general fabrication, shipbuilding, hard-to-weld, out-of-position and pipeline (ASME vertical up) welding.

The most popular E7018 electrode, for example, has certain characteristics that separate it from other classes. An ideal choice for all position welding, with the exception of vertical down, these low hydrogen electrodes have a high iron powder content that facilitates a smoother, quieter arc with very low spatter, medium arc penetration and high deposition rates. The E7018 electrode exhibits moderately heavy slag is easy to remove. This class of stick electrode also is ideal for use in joints involving high-strength, high carbon or low alloy steels. The E7018 electrode's wide versatility makes it a workhorse for many SMAW applications

www.lincolnelectric.com/en-au/support/process-and-theory/Pages/low-hydrogen-stick-electrodes.aspx

28. Which of the following controls the size of the flame in gas welding
- 1). Nozzle 2). Regulators 3). Unions 4). None of these

Ans:2

29. The normal storage capacity of oxygen cylinders in gas welding is -
- 1). 5 cu m 2). 6 cu m 3). 7 cu m 4). 8 cum

Ans:4

30. The pressure of the acetylene gas cylinders ranges between -

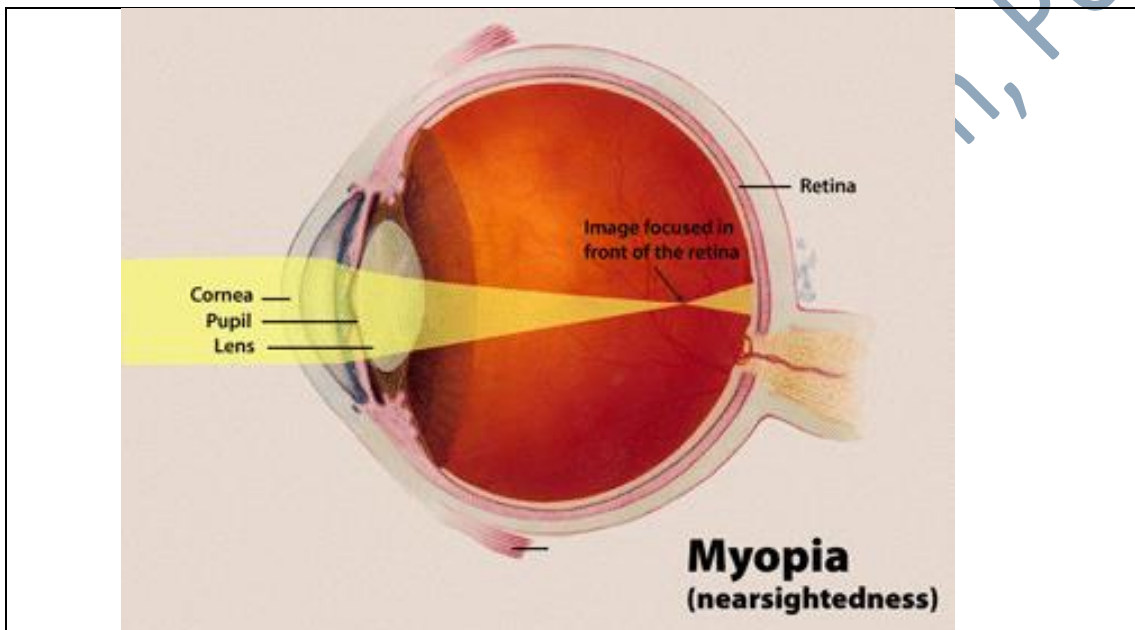
- 1). 15 - 16 kg / cm square 2). 16 - 17 kg / cm square
 3). 18 - 19 kg /cm square 4). 20 - 21 kg / cm square

Ans:1

31. In myopia, the image is formed ____retina.

- 1). On the 2). Behind the
 3). In front of 4). Some times on and sometimes behind

Ans:3



http://www.nei.nih.gov/healthyeyes/eye_images/Myopia.gif

<https://commons.wikimedia.org/wiki/File:Myopia.gif>

Short sightedness or myopia is an eye where the near vision range is clear whereas the long vision is blurred. It occurs when the shape of your eye causes light rays to bend (refract) incorrectly, focusing images in front of your retina instead of on your retina.

Nearsightedness or **myopia** is the inability of the eye to focus on distant objects. The nearsighted eye has no difficulty viewing nearby objects. But the ability to view distant objects requires that the light be refracted less. The problem is most common as a youth, and is usually the result of a bulging cornea or an elongated eyeball.

32. Weir may also be used to measure -

- 1). Velocity of flow 2). Pressure
 3). Discharge in a river or channel 4). Kinetic energy

Ans:3

er is a small dam built across a river to control the upstream water level. Weirs have

been used for ages to control the flow of water in streams, rivers, and other water bodies. Unlike large dams which create reservoirs, the goal of building a weir across a river isn't to create storage, but only to gain some control over the water level.

A weir is a calibrated instrument used to measure the flow in an open channel, or the discharge of a well or a canal outlet at the source.

33. The melting point of soft solders lie below –

- | | |
|-------------------|-------------------|
| 1). 300 degrees C | 2). 350 degrees C |
| 3). 400 degrees C | 4). 450 degrees C |

Ans:4

450°C (840°F), used in a process called soldering where it is melted to join metallic surfaces. It is especially useful in electronics and plumbing. Alloys that melt between 180 and 190°C are the most commonly used.

SOLDERING

Soldering is characterized by the melting point of the filler metal, which is below 450°C (752°F). The filler metal used in the process is called solder.

Common combinations of tin, lead and other metals are used to create solder. The combinations used depend on the desired properties. The most popular combination is 60% tin, 39% lead, and 1% alloys. This combination is strong, has a low melting range, and melts and sets quickly. A higher tin composition gives the solder higher corrosion resistances, but raises the melting point. Another common composition is 11% tin, 37% lead, 42% bismuth, and 10% cadmium. This combination has a low melting point and is useful for soldering components that are sensitive to heat.

Lead solders (*soft solders*) are commercially available with tin concentrations between 5% and 70% by weight. The greater the tin concentration, the greater the solder's tensile and shear strengths. At the retail level, the two most common alloys are 60/40 Sn/Pb which melts at 370°F or 188°C and 63/37 Sn/Pb used principally in electrical work.

<https://www.totalmateria.com/page.aspx?ID=CheckArticle&site=ktn&NM=229>

TYPES OF SOLDERING

There are three types of soldering which use increasingly higher temperatures, which in turn produce progressively stronger joints:

- **Soft soldering (90 °C - 450 °C)** - This process has the lowest filler metal melting point of all the soldering types at less than around 400°C these filler metals are usually alloys, often containing lead with liquidus temperatures under 350°C. Because of the low temperatures used in soft soldering it thermally stresses components the least but does not make strong joints and is then therefore unsuitable for mechanical load-bearing applications. It is also

not suited for high temperature use as this type of solder loses strength and melts.

- **Hard (silver) soldering (>450 °C)** – Brass or silver is the bonding metal used in this process, and requires a blowtorch to achieve the temperatures at which the solder melts.
- **Brazing (>450 °C)** – This type of soldering uses a metal with a much higher melting point than those used in hard and soft soldering. However, similarly to hard soldering, the metal being bonded is heated as opposed to being melted. Once both the materials are heated sufficiently, you can then place the soldering metal between them which melts and acts as a bonding agent.

OF A SOLDERING IRON

Soldering iron is a **hand tool used to heat solder**, usually from an electrical supply at high temperatures above the melting point of the metal alloy. This allows for the solder to flow between the workpieces needing to be joined.

<https://www.twi-global.com/technical-knowledge/faqs/what-is-soldering>

34. The angle of cut in a single cut file is -
- 1). 30 degrees 2). 45 degrees 3). 60 degrees 4). 70 degrees

Ans:3

Single-cut files have rows of teeth **cut** in one direction only -- usually at a 65-degree angle to the center line. **Double-cut files** have teeth that crisscross at opposing angles. The teeth form a diamond pattern across the face of the tool.

35. Which of the following is NOT a part of a file?
- 1). Handle 2). Shoulder 3). Knee 4). Ferrule

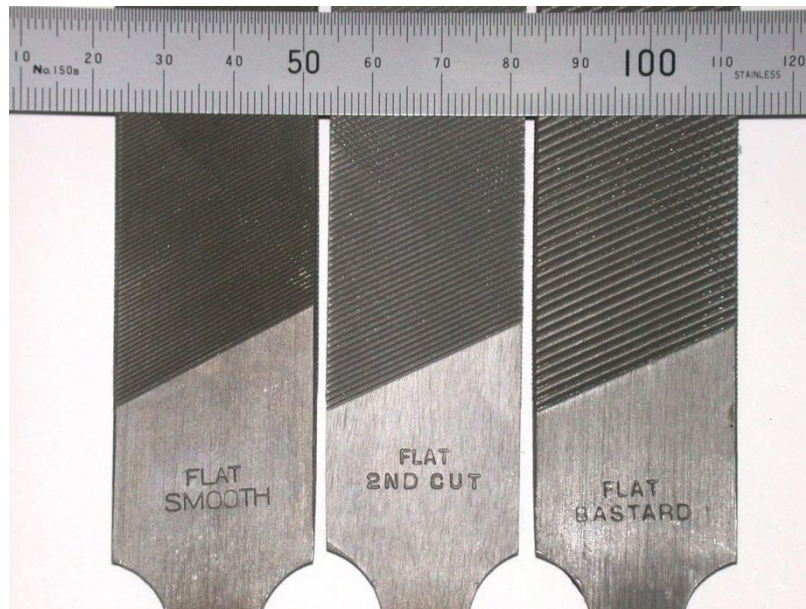
Ans:4

In hardware and metalworking, tool of hardened steel in the form of a bar or rod with many small cutting edges raised on its longitudinal surfaces; it is used for smoothing or forming objects, especially of metal. The cutting or abrading action of the file results from rubbing it, usually by hand, against the workpiece.

Files are classified according to their cross-sectional shapes, the form of the cutting edges, and the coarseness of the cut (*i.e.*, the number of teeth per inch or centimetre). There are at least 20 different cross-sectional shapes; the most common are rectangular with various width-to-thickness ratios, square, triangular, round or rattail, and half round. There are three general classifications of tooth form: single-cut, double-cut, and rasp. The single-cut file has rows of parallel teeth cut diagonally across the working surfaces. The double-cut file has rows of teeth crossing each other. Rasp teeth are

disconnected and round on top; they are formed by raising small pieces of material from the surface of the file with a punch. Rasp files, or rasps, are usually very coarse and are used primarily on wood and soft materials.

Classification according to coarseness or spacing of the teeth is confined to single- and double-cut files. There are six main classes: rough, coarse, bastard, second-cut, smooth, and dead smooth. The n



<https://www.britannica.com/technology/tool>

Britannica, The Editors of Encyclopaedia. "file". *Encyclopedia Britannica*, 26 Nov. 2008, <https://www.britannica.com/technology/file-tool>. Accessed 29 October 2021.

36. Which of the following is NOT a part of a chisel?

- | | |
|---------------------------|--------------|
| 1). Head | 2). Body |
| 3). Point or cutting edge | 4). Eye hole |

Ans: 4

PARTS OF A CHISEL FOLLOWING ARE THE DIFFERENT PARTS OF A CHISEL:

1. Head
2. Body
3. Forging angle
4. Cutting edge
5. Cutting angle

37. Forge welding is classified as...

- 1). Fusion welding without pressure
- 2). Fusion welding with pressure
- 3). Non-fusion welding without pressure

4). Non-fusion welding with pressure

Ans: 4 (It is a solid state welding.)

38. What is the operation called which removes excess metal with the help of a chisel and hammer?
 1). Cutting 2). Chipping 3). Welding 4). None of these

Ans: 2

39. Which of the following is NOT a type of brazing method?
 1). Torch 2). Induction 3). Conduction 4). Furnace

Ans: 3

40. Which of the following is used to clean non-ferrous and stainless steel welded joint?
 1) Stainless steel wire brush 2). Carbon steel wire brush
 3). Cloth 4). None of these

Ans: 1

41. Which of the following is NOT true of brazing?
 1). Brazing temperatures are lower but above 450°C
 2). Dissimilar metals cannot be joined
 3). Brazing gives good appearance
 4). Base metals are never melted

Ans: 2

42. Which of the following is NOT true of adhesion bonding?
 1). Dissimilar metals are joined 2). Good appearance
 3). Electrolytic corrosion is absent 4). Decreases fatigue life

Ans: 4

43. The usual defect which occurs on a weld done by low heat input to electrode due to improper cleaning is.
 1). Undercut 2) Porosity 3). Overlap 4). Crack

Ans: 2

44. The name of the part in a DC welding generator which converts the AC supply voltage into DC welding output voltage is.
 1). Armature 2). Commutator 3). Field coils 4). Carbon brushes

Ans: 2

45. The size of a bench vice is specified by the...

1). Width of the jaws

2). Length of the spindle

3). Height of the jaws from the base

4). Maximum travel of the movable jaw

Ans:1

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