

ME110 (Workshop –I)

Time: 1 hour

Total marks: 60

Attempt any two sections. Each section contains 15 questions. Each right answer will give you 2 marks and wrong answer –1 mark. Encircle the correct answer.

Section: Fitting

- (1) Screw of the bench vise in your shop has
(a) Metric thread. (b) Vee thread. (c) **Square thread.** (d) Knuckle thread.
- (2) Chisel is used for
(a) Cutting the jobs in two pieces. (b) **For chipping the material.**
(c) For producing a very good surface finish. (d) For making a round hole.
- (3) Tension of the hacksaw blade may be adjusted by a
(a) **wing nut** (b) lock nut (c) handle (d) setter
- (4) A typical hacksaw blade is having 16 teeth per 25 mm. The pitch of the teeth is approximately
(a) 16 mm. (b) 25 mm. (c) **1.8 mm.** (d) 3.6 mm.
- (5) The material which is commonly used for making the hacksaw blade is
(a) Aluminium (b) Copper (c) **High carbon steel** (d) Cast iron
- (6) Tang is used for
(a) Holding a work piece (b) Lifting a work piece (c) **fixing the file into wooden handle** (d) making internal threads
- (7) External threads can be made by
(a) drill (b) tap (c) **die** (d) hacksaw
- (8) A bastard file has a pitch of approximately
(a) 0.25 mm (b) **0.8 mm** (c) 2.5 mm (d) 0.01 mm
- (9) The filing operation in which the to and fro motion of the file is perpendicular to its longest side is called
(a) Cross filing (b) Straight filing (c) pull filing (d) **draw filing**
- (10) The correct order of the processes capable of providing increasing flatness accuracy is
(a) Filing, scrapping, chipping (b) **Chipping, filing, scraping** (c) Chipping, scraping, filing (d) Filing, chipping, scraping
- (11) The proper speed for hacksawing a cold rolled steel is
(a) 120 strokes per minute (b) **60 strokes per minute** (c) 30 strokes per minute (d) 10 strokes per minute
- (12) Peening is
(a) Cutting threads on inside surface (b) **Stretching of metal by hammering**
(c) cutting of metal by chisel (d) filing by very smooth file.
- (13) A surface plate is used for
(a) polishing of the work piece (b) **laying out and inspecting the work piece**
(c) measuring surface roughness (d) holding the work piece
- (14) Among screw, tap, bolt and rivet, following is the odd member out
(a) screw (b) **tap** (c) bolt (d) rivet
- (15) The high carbon steel usually contain the carbon in the range
(a) 6-10 % (b) 2-4% (c) 0.01-0.05% (d) **0.6-1.30 %.**

Section: Carpentry

Q.1: The wood which is not soft is

- (a) Pine (b) Chir (c) Semal **(d) Neem**

Q.2: Trammel points are

- (a) Marking tool** (b) Cutting tool (c) Measuring tool (d) testing tool

Q.3: The following table shows a mismatched (?) table for the tools and their application:

S.N.	Tool	S.N.	Application
A.	Bradawl	1.	Boring small holes in wood
B.	Auger	2.	Boring hole upto 25 mm diameter
C.	Brace	3.	Holding and turning tool for making bore
D.	Spoke shave	4.	Planing circular work having quick curves

The correct matching is

- (a) A-1, B-2, C-3, D-4** (b) A-2, B-3, C-4, D-1 (c) A-3, B-4, C-1, D-2

- (d) A-4, B-2, C-3, D-1

Q.4 Among rip saw, adze, beveled edge firmer chisel and mallet, the odd member out is

- (a) rip saw (b) adze (c) beveled edge firmer **(d) mallet**

Q.5: A square cavity or recess in a wooden piece is often called

- (a) mortise** (b) tennon (c) groove (d) dovetail

Q.6: The joint which you made in the carpentry shop is called

- (a) Lap joint (b) Mitre joint **(c) bridle joint** (d) mortise and tenon joint

Q.7: Cramp is a

- (a) measuring tool (b) marking tool **(c) holding tool** (d) cutting tool

Q.8: For cutting quick curves, the saw which is most commonly used is

- (a) Rip saw **(b) bow saw** (c) panel saw (d) dovetail saw

Q.9: Among Gouge, rip saw, paring chisel and mortise chisel, the odd member out is

- (a) gouge **(b) rip saw** (c) paring chisel (d) mortise chisel

Q.10: The angle between the sole and blade of a jack plane is

- (a) 90° **(b) 45°** (c) 30° (d) 15°

Q.11: Pincer can be used for

- (a) Making hole (b) joining **(c) pulling out nails** (d) fixing the nails

Q.12: A typical rip saw may have the pitch of teeth not more than

- (a) 0.1 mm (b) 0.25 mm (c) 2.5 mm **(d) 10 mm**

Q.13: The following statement is false:

- (a) Saws are sharpened after setting
(b) Dovetail saw is used where the greatest accuracy is needed.
(c) Rasp is used for removing the marks left by files.
(d) Dowels are thin, small and round hard wood sticks.

Q. 14: Machine which can make a cylindrical piece of a wood is called

- (a) Milling machine **(b) Lathe** (c) Boring machine (d) Planer

Q.15: The wood most suitable for making the patterns for repetitive moulding is

- (a) mahogany** (b) deodar (c) teak (d) shisam

Section: Welding

Q.1: The following statement is false:

- (a) Arc welding is a fusion welding process.
- (b) In straight polarity welding, the workpiece is connected to negative terminal.**
- (c) In straight polarity, approximately 60 to 75 percent heat is liberated near the work piece.
- (d) Adding aluminium oxide in the coating makes the arc less stable.

Q.2: Shielding gas used in TIG welding is

- (a) CO₂
- (b) Argon**
- (c) C₂H₂
- (d) N₂

Q.3: If oxygen-acetylene ratio is 1.1: 1, the resulting flame will be

- (a) oxidizing flame
- (b) neutral flame**
- (c) carburizing flame
- (d) lean flame

Q.4: For cutting a plate, the flame which should be used is

- (a) oxidizing flame**
- (b) neutral flame
- (c) carburizing flame
- (d) lean flame

Q.5: Correct sequence of materials with increasing difficulty for gas cutting is

- (a) **carbon steel, cast iron, aluminium**
- (b) cast iron, aluminium, carbon steel
- (b) aluminium, carbon steel, cast iron
- (d) cast iron, carbon steel, aluminium

Q.6: Plasma arc welding utilizes

- (a) **non-consumable tungsten electrode**
- (b) consumable tungsten electrode
- (c) non-consumable copper electrode
- (d) consumable copper electrode

Q.7: The typical arc welding voltage is

- (a) 5 V
- (b) 220 V
- (c) 415 V
- (d) 45 V**

Q.8: If the welding voltage increases, the welding current

- (a) increases**
- (b) remains constant
- (c) decreases
- (d) may increase or decrease

Q.9: The colour of the oxygen cylinder is

- (a) black**
- (b) red
- (c) white
- (d) blue

Q. 10: In order to store acetylene, it is dissolved in

- (a) water
- (b) acetone**
- (c) methane
- (d) laughing gas

Q.11: Acetylene is often produced by the chemical reaction of

- (a) water and carbon dioxide
- (b) water and calcium carbide**
- (c) hydrogen and carbon
- (d) hydrogen and calcium carbide

Q.12: Among the transformer, generator and rectifier, the following has/have the rotating parts:

- (a) transformer
- (b) generator and rectifier
- (c) rectifier
- (d) generator**

Q.13: In shielded metal arc welding, the current usually ranges between

- (a) 5-25 A
- (b) 50-300 A**
- (c) 500-1000 A
- (D) 1000-10000 A

Q.14: For welding of a carbon steel sheets of 0.15 mm, a very good process can be

- (a) MIG
- (b) shielded metal arc welding
- (c) TIG**
- (d) oxy-acetylene gas welding

Q.15: Among butt joint, lap joint, T-joint and bridle joint the odd member out is

- (a) butt joint
- (b) lap joint
- (c) T-joint
- (d) bridle joint**

Section: Sheet metal

Q. 1: Among snips, chisel, stakes and punch, the odd member out is

- (a) snips (b) chisel (c) **stakes** (d) punch

Q.2: Soft solder consists of

- (a) 25% tin and 75% lead (b) **50% tin and 50% lead** (c) 75% tin and 25% lead (d) 25% silver and 75% lead

Q.3: Adding small amounts of bismuth in a soft solder,

- (a) **the melting point is lowered** (b) the melting point increases (c) does not have effect on melting point (d) makes it hard.

Q.4: The following statement is false:

1. Rolling may be used to produce thin sheets.
2. **Deep drawing may be used to produce thin sheets.**
3. Annealing can be used to soften the steel.
4. Zinc-coated iron is known as Galvanized iron.

Q.5: Besides carbon, the stainless steel contains

- (a) **nickel and chromium** (b) tungsten and chromium (c) nickel and tungsten (d) chromium and copper

Q.6: The correct order of increasing cost of sheet metals is

- (a) black iron, copper, G.I. (b) G.I., copper, black iron (c) **black iron, G.I., copper** (d) G.I., black iron, copper

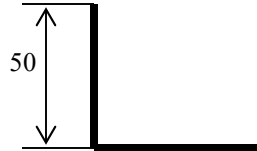
Q.7: The material that cannot be plastically deformed by bending is

- (a) mild steel (b) **cast iron** (c) lead (d) gold

Q.8: Among plain safety glasses, apron, plastic safety glasses and face shields, the odd member out is:

- (a) plain safety glasses (b) **apron** (c) plastic safety glasses (d) face shields

Q.9: The cross-section of a beam is shown below:



Each leg is of 50 mm length (dimension of one leg shown). It is fabricated by sheet metal working on a copper sheet of 3 mm thickness. The developed length is approximately

- (a) **94 mm** (b) 100 mm (c) 97 mm (d) 103 mm

Q.10: The pitch of the screw of the micrometer is 0.5 mm. There are 50 graduations on the thimble. The least count of the micrometer is

- (a) 0.5 mm (b) 0.1 mm (c) 1 micron (d) **10 micron**

Q.11: In a vernier caliper, the vernier scale has 50 graduations, which occupy the same space as 48 graduations on the main scale (48 mm). The least count of the vernier is

- (a) 0.01 mm (b) 0.02 mm (c) **0.04 mm** (d) 0.03 mm

Q.12: the cone angles in prick punch and center punch may be respectively

- (a) **30°, 90°** (b) 90°, 30° (c) 10°, 5° (d) 120°, 15°

Q.13: The correct order of punches capable of making holes of increasingly larger diameter is

- (a) prick punch, hollow punch, solid punch (b) hollow punch, prick punch, solid punch (c) hollow punch, solid punch, prick punch (d) **prick punch, solid punch, hollow punch**

Q.14: The Imperial Standard wire gauge no. 4, 11 and 24 refer to wires of diameters respectively

- (a) **6.0, 3.0 and 0.58 mm** (b) 3.0, 6.0 and 0.58 mm (c) 0.58, 3.0 and 6.0 mm (d) 6.0, 3.0 and 5.8 mm

Q.15: The odd member out in rivet, bolt, screw and center punch is

- (a) rivet (b) bolt (c) screw (d) **center punch**

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(a) Metric thread. (b) Vee thread. (c) Square thread. (d) Knuckle thread.
2. Chisel is used for
(a) Cutting the jobs in two pieces. (b) For chipping the material.
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3. Tension of the hacksaw blade may be adjusted by a
(a) wing nut (b) lock nut (c) handle (d) setter
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(a) Cross filing (b) Straight filing (c) pull filing (d) draw filing
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11. The proper speed for hacksawing a cold rolled steel is
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Q.5: Correct sequence of materials with increasing difficulty for gas cutting is

- (a) carbon steel, cast iron, aluminium
- (b) cast iron, aluminium, carbon steel
- (c) aluminium, carbon steel, cast iron
- (d) cast iron, carbon steel, aluminium

Q.6: Plasma arc welding utilizes

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- (a) 25% tin and 75% lead (b) 50% tin and 50% lead (c) 75% tin and 25% lead (d) 25% silver and 75% lead

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- (a) the melting point is lowered (b) the melting point increases (c) does not have effect on melting point (d) makes it hard.

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- (a) nickel and chromium (b) tungsten and chromium (c) nickel and tungsten
(d) chromium and copper

Q.6: The correct order of increasing cost of sheet metals is

- (b) black iron, copper, G.I. (b) G.I., copper, black iron (c) black iron, G.I., copper (d) G.I., black iron, copper

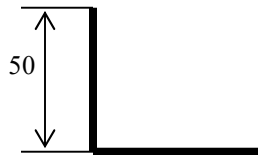
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- (a) 0.01 mm (b) 0.02 mm (c) 0.04 mm (d) 0.03 mm

Q.12: the cone angles in prick punch and center punch may be respectively

- (a) 30° , 90° (b) 90° , 30° (c) 10° , 5° (d) 120° , 15°

Q.13: The correct order of punches capable of making holes of increasingly larger diameter is

- (a) prick punch, hollow punch, solid punch (b) hollow punch, prick punch, solid punch (c) hollow punch, solid punch, prick punch
(d) prick punch, solid punch, hollow punch

Q.14: The Imperial Standard wire gauge no. 4, 11 and 24 refer to wires of diameters respectively

- (a) 6.0, 3.0 and 0.58 mm (b) 3.0, 6.0 and 0.58 mm (c) 0.58, 3.0 and 6.0 mm (d) 6.0, 3.0 and 5.8 mm

Q.15: The odd member out in rivet, bolt, screw and center punch is

- (a) rivet (b) bolt (c) screw (d) center punch

ME110 (Workshop –I)

Time: 1 hour

Total marks: 90

Attempt all questions. First 35 questions are multiple choice questions. You have to encircle the correct answer. Each right answer will give you 2 marks and wrong answer –1 mark. Last two questions are of 10 marks each. In these you have to put captions below the figure. Each right caption will give you 2 marks and wrong caption 0 mark.

Q.1: The percentage of carbon in mild steel is in the range

- (a) 0.01-0.1 **(b) 0.15-0.3** (c) 0.7-0.9 (d) 2-2.5

Q.2: Among riveted, welded, brazed and soldered joint, the weakest joint is

- (a) riveted (b) welded (c) brazed **(d) soldered**

Q.3: The main constituent of 'killed spirits' is

- (a) zinc chloride** (b) ammonium chloride (c) olive oil (d) alcohol

Q.4: Melting point of copper is

- (a) 680 °C **(b) 1080 °C** (c) 1580 °C (d) 2080 °C

Q.5: Hammer heads are made from a plain steel of about

- (a) 0.1% carbon **(b) 0.6% carbon** (c) 1.2% carbon (d) 2% carbon

Q.6: A hammer of mass 500 gm moving at 1m/s strikes a pin and drives it a distance of 3 mm. The average force of the blow is

- (a) 83 N** (b) 166 N (c) 500 N (d) 1 kN

Q.7: The nails can be pulled by

- (a) ratchet brace **(b) claw hammer** (c) auger (d) reamer bit

Q.8: Cutting angles of chisels are maintained by

- (a) grinding** (b) rubbing on a stone (c) casting (d) polishing

Q.9: The cavity produced is blind in the following operation:

- (a) Mortising **(b) recessing** (c) riveting (d) tenoning

Q.10: Tenon is a

- (a) Through hole in the wooden piece **(b) Projected part in a wooden piece**
(c) Taper provided to the wooden piece (d) Cavity or a slot made in a wooden piece

Q.11: Recessing is an operation in which a

- (a) Groove is provided to a wooden piece on its longitudinal face
(b) Different decorative shapes are produced along the periphery of a wooden piece
(c) Through cavity or slot is made in a wooden piece
(d) Blind cavity or a slot is made in a wooden piece

Q.12: The odd member out among thermit welding, spot welding, seam welding and friction welding is

- (a) thermit welding** (b) spot welding (c) seam welding (d) friction welding

Q.13: The correct sorting in decreasing order of approximate flame temperature in welding is

- (a) oxy-acetylene, air-propane, oxy-town gas, air-town gas (b) oxy-town gas, oxy-propane, oxy-hydrogen, oxy-acetylene
(c) oxy-acetylene, oxy-hydrogen, oxy-propane, oxy-town gas (d) air-propane, oxy-hydrogen, oxy-propane, oxy-town gas

Q.14: Flat file has a

- (a) Rectangular cross-section and tapers only in width
(b) Rectangular cross-section and tapers only in thickness
(c) Rectangular cross-section and tapers after about two-third of length up to the tip both in width and thickness
(d) Square cross-section and tapers after about two-third of length up to the tip both in width and thickness

Q. 15: Knife edge file has a

- (a) Single cut teeth on its both faces as well as on the edges
(b) Double cut teeth on the edges as well as faces
(c) Single cut teeth on its both faces and double cut teeth on the edges
(d) Double cut teeth on its both faces and single cut teeth on the edges

Q.16: Odd member out in cutting, notching, planishing and chiseling is

- (a) cutting (b) notching (c) planishing **(d) chiselling**

Q.17: In coining operation

- (a) compressive stresses are induced** (b) tensile stresses are induced

(d) both compressive and tensile stresses are induced

(d) shear stresses are induced

Q.18. The maximum strength providing rivet head is

- (a) conical head (b) Countersunk head (c) **Pan head** (d) Half-Countersunk head

Q.19: The material that you have used in sheet-metal work is

- (a) cast iron (b) aluminum (c) **Galvanized Iron** (d) High speed steel

Q.20: The joint which is not made in carpentry shop is

- (a) butt joint (b) mitre joint (c) lap joint (d) **stitch joint**

Q.21: The metal and welding rod which does not require fluxing in gas welding is

- (a) bronz (b) cast iron (c) brass (d) **carbon steel**

Q.22: The welding process using non-consumable electrode/welding rod is

- (a) D.C. arc welding (b) gas welding (c) **TIG welding** (d) MIG welding

Q.23: The instrument which is not used for angular measurements is

- (a) sine bar (b) bevel protector (c) **optical flat** (d) combination set

Q. 24: In fitting shop, the jobs are held in

- (a) bench wise (b) **bench vice** (c) bench clamp (d) bench brace

Q.25: While using a hacksaw, pressure is applied during

- (a) **forward stroke** (b) return stroke (c) forward as well as return stroke (d) first stroke

Q.26: Type of hammer used in carpentry shop is

- (a) ball peen hammer (b) cross peen hammer (c) **claw hammer** (d) club hammer

Q.27: The tool which is not a planing tool is

- (a) trying plane (b) rebate plane (c) spoke shave (d) **bradawl**

Q.28: Taps are used for making

- (a) **internal threads** (b) external threads (c) slots (d) grooves

Q.29: Dies are used for making

- (a) joints (b) internal slots (c) **external thread** (d) none

Q.30: Hacksaw blades are specified by its

- (a) **length and pitch of teeth** (b) length only (c) length and thickness (d) pitch of teeth only

Q.31: The metal ring on the file handle is called

- (a) **Ferrule** (b) ring (c) strip (d) tang

Q.32: The dead smooth file has a pitch of approximately

- (a) **0.35 mm** (b) 0.65 mm (c) 1.6 mm (d) 0.03 mm

Q.33: The tool that is not a holding tool is

- (a) **pincer** (b) bench stop (c) T-cramp (d) G-cramp

Q.34: The incorrect statement about the tin is

- (a) It has almost silvery appearance.

- (b) It melts at 232°C .

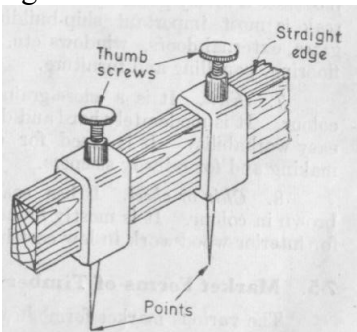
- (c) **It is softer than lead.**

- (d) Solder rich in tin gives a louder cry than when not much tin is present.

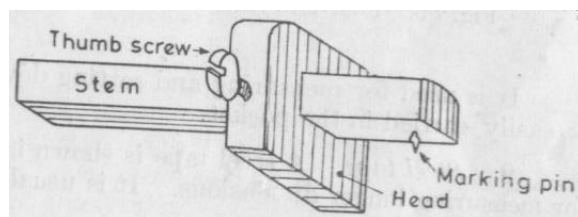
Q.35: The CLA surface roughness of a smooth filed surface ranges from

- (a) **1-2 μ** (b) 0.025-0.2 μ (c) 4-5 μ (d) 10-15 μ

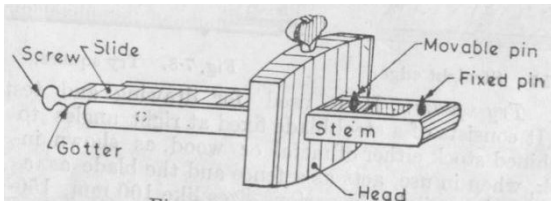
Q.36: For the following 5 carpentry tools, put the correct names of the tools (in capital letters) below the figures.



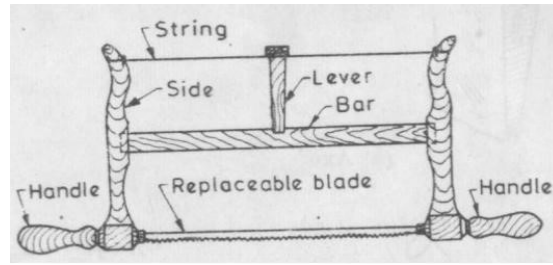
Trammel Points



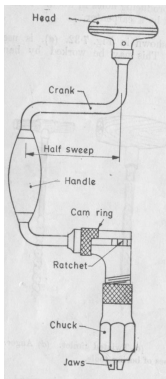
Marking gauge



Mortise gauge

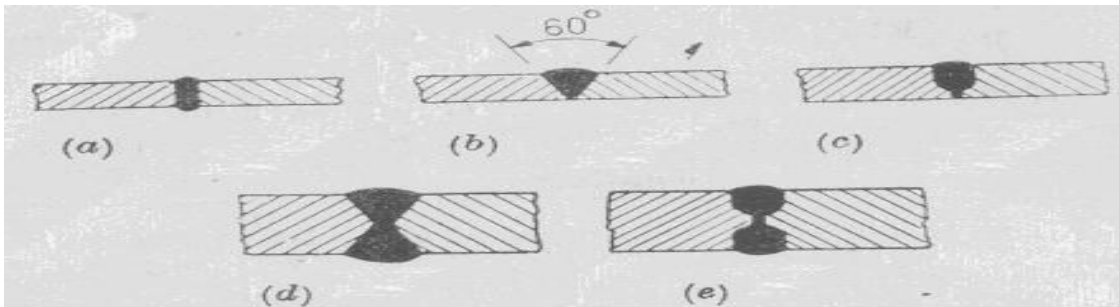


Bow saw



Ratchet brace

Q.37: For the 5 welding butt joints, put the correct names of the joints below their figures.



(a) Square (b) Single V (c) Single U (d) Double V (e) Double U

ME110 (Workshop –I)

Time: 1 hour

Total marks: 90

Attempt all questions. First 35 questions are multiple-choice questions. You have to encircle the correct answer. Each right answer will give you 2 marks and wrong answer –1 mark. Last two questions are of 10 marks each. In these you have to put captions below the figure. Each right caption will give you 2 marks and wrong caption 0 mark.

Q.1: The percentage of carbon in mild steel is in the range

- (a) 0.01-0.1 (b) 0.15-0.3 (c) 0.7-0.9 (d) 2-2.5

Q.2: Among riveted, welded, brazed and soldered joint, the weakest joint is

- (a) riveted (b) welded (c) brazed (d) soldered

Q.3: The main constituent of 'killed spirits' is

- (a) zinc chloride (b) ammonium chloride (c) olive oil (d) alcohol

Q.4: Melting point of copper is

- (a) 680 °C (b) 1080 °C (c) 1580 °C (d) 2080 °C

Q.5: Hammer heads are made from a plain steel of about

- (a) 0.1% carbon (b) 0.6% carbon (c) 1.2% carbon (d) 2% carbon

Q.6: A hammer of mass 500 gm moving at 1m/s strikes a pin and drives it a distance of 3 mm. The average force of the blow is

- (a) 83 N (b) 166 N (c) 500 N (d) 1 kN

Q.7: The nails can be pulled by

- (a) ratchet brace (b) claw hammer (c) auger (d) reamer bit

Q.8: Cutting angles of chisels are maintained by

- (a) grinding (b) rubbing on a stone (c) casting (d) polishing

Q.9: The cavity produced is blind in the following operation:

- (a) Mortising (b) recessing (c) riveting (d) tenoning

Q.10: Tenon is a

- (a) Through hole in the wooden piece (b) Projected part in a wooden piece
(c) Taper provided to the wooden piece (d) Cavity or a slot made in a wooden piece

Q.11: Recessing is an operation in which a

- (a) Groove is provided to a wooden piece on its longitudinal face
(b) Different decorative shapes are produced along the periphery of a wooden piece
(c) Through cavity or slot is made in a wooden piece
(d) Blind cavity or a slot is made in a wooden piece

Q.12: The odd member out among thermit welding, spot welding, seam welding and friction welding is

- (a) thermit welding (b) spot welding (c) seam welding (d) friction welding

Q.13: The correct sorting in decreasing order of approximate flame temperature in welding is

- (a) oxy-acetylene, air-propane, oxy-town gas, air-town gas (b) oxy-town gas, oxy-propane, oxy-hydrogen, oxy-acetylene
(c) oxy-acetylene, oxy-hydrogen, oxy-propane, oxy-town gas (d) air-propane, oxy-hydrogen, oxy-propane, oxy-town gas

- Q.14. Flat file has a
- (a) Rectangular cross-section and tapers only in width
 - (b) Rectangular cross-section and tapers only in thickness
 - (c) Rectangular cross-section and tapers after about two-third of length up to the tip both in width and thickness
 - (d) Square cross-section and tapers after about two-third of length up to the tip both in width and thickness
- Q. 15. Knife edge file has a
- (a) Single cut teeth on its both faces as well as on the edges
 - (b) Double cut teeth on the edges as well as faces
 - (c) Single cut teeth on its both faces and double cut teeth on the edges
 - (d) Double cut teeth on its both faces and single cut teeth on the edges
- Q.16. Odd member out in cutting, notching, planishing and chiseling is
- (a) cutting (b) notching (c) planishing (d)chiseling
- Q.17. In coining operation
- (a) compressive stresses are induced
 - (b) tensile stresses are induced
 - (c) both compressive and tensile stresses are induced
 - (d) shear stresses are induced
- Q.18. The maximum strength providing rivet head is
- (a) conical head (b) Countersunk head (c) Pan head (d) Half-Countersunk head
- Q.19: The material that you have used in sheet-metal work is
- (a) cast iron (b) aluminum (c) Galvanized Iron (d) High speed steel
- Q.20: The joint which is not made in carpentry shop is
- (a) butt joint (b) mitre joint (c) lap joint (d) stitch joint
- Q.21: The metal and welding rod which does not require fluxing in gas welding is
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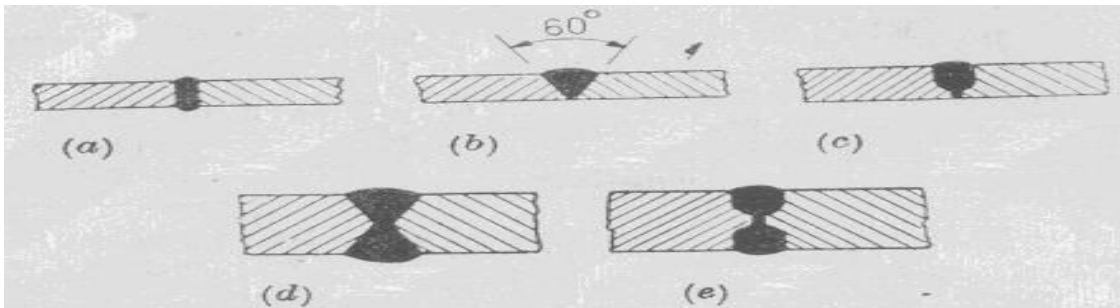
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