

PROVISIONAL ANSWER KEY

Question 91/2025/OL

Paper Code:

Category 142/2024

Code:

Exam: Blacksmith/Blacksmithy Instructor

Date of Test 12-08-2025

Department Health Services

Question1:-Which of the following statement is/are correct about steel rule?

- (i) It is made of stainless steel
- (ii) The reading accuracy of steel rule is 0.5 mm
- (iii) Steel rule is a linear measuring instrument

A:-Only (i and iii)

B:-Only (i)

C:-Only (iii)

D:-All of the above (i, ii and iii)

Correct Answer:- Option-D

Question2:-Respiratory protective equipments belong to category of

A:-PPE 1

B:-PPE 2

C:-PPE 3

D:-PPE 4

Correct Answer:- Option-C

Question3:-Which of the following statement is/are correct about a divider?

- (i) Divider can be used for scribing circles
- (ii) It can be used to measure inside dimensions
- (iii) Dividers are used transmitting and stepping of distances

A:-Only (i)

B:-Only (iii)

C:-Only (i and ii)

D:-All of the above (i, ii and iii)

Correct Answer:- Option-C

Question4:-In which part of the hammer its weight stamped?

A:-Handle

B:-Face

C:-Peen

D:-Cheek

Correct Answer:- Option-D

Question5:-In ABC first aid 'B' stands for

- A:-Bleeding
- B:-Breathing
- C:-Blood
- D:-Brain

Correct Answer:- Option-B

Question6:-Which of the following statement is/are correct about punch?

- (i) Angle of centre punch is 60°
- (ii) 60° punch is used for marking witness mark
- (iii) 90° punch is used for making punch mark for placing dividers

- A:-All of the above (i, ii and iii)
- B:-Only (i)
- C:-Only (ii)
- D:-Only (i and iii)

Correct Answer:- Option-C

Question7:-The accuracy of measurement by a try square is about

- A:-0.001 mm per 10 mm length
- B:-0.002 mm per 10 mm length
- C:-0.01 mm per 10 mm length
- D:-0.005 mm per 10 mm length

Correct Answer:- Option-B

Question8:-Which personal protective equipment is used for the protection of body?

- A:-Gum boots
- B:-Hand gloves
- C:-Apron
- D:-Face shield

Correct Answer:- Option-C

Question9:-Why slight convexity is given on the face of hammer?

- A:-To avoid digging of the edge
- B:-To prevent slipping
- C:-To allow event load on striking
- D:-To provide sooth hammering

Correct Answer:- Option-A

Question10:-Which of the following statement is/are correct in case of Hacksaw blades?

- (i) Hacksaw blades are specified by the length, pitch and type of material
- (ii) Course pitch blades are used for cutting soft materials such as bronze, brass, etc

(iii) Pitch size of fine pitch blade is 0.8 mm

A:-Only (i and iii)

B:-Only (i and ii)

C:-Only (iii)

D:-All of the above (i, ii and iii)

Correct Answer:- Option-D

Question11:-During filing, sometimes the metal chips will clog between the teeth of files. This is known as

A:-Filing of file

B:-Rusting of file

C:-Pinning of file

D:-Crowning of file

Correct Answer:- Option-C

Question12:-Match 'Group I' with 'Group II'

Group I

Group II

(a) Pipe vice

(i) Marking of small jobs on surface plate

(b) Pin vice

(ii) Holding small diameter jobs

(c) Tool makers vice (iii) Jaws can be opened and close using wing nut

(iv) Holding pipes

A:-a-1, b-4, c-3

B:-a-4, b-2, c-1

C:-a-2, b-1, c-3

D:-a-2, b-3, c-1

Correct Answer:- Option-B

Question13:-Which of the following statement is/are correct about file?

(i) Shoulder is curved part of file separating tang from the body

(ii) Ferrule is a protective metal ring to prevent cracking of the handle

(iii) Heel is thin part of the file with a single row of parallel teeth

A:-Only (i)

B:-Only (iii)

C:-Only (i and ii)

D:-All of the above (i, ii and iii)

Correct Answer:- Option-C

Question14:-Diamond point chisel is used to

A:-Squaring materials at the corners

B:-Cutting oil grooves

C:-Cutting key ways

D:-Chip-off excess metal of welded joints and castings

Correct Answer:- Option-A

Question15:-What is the name of sign?



A:-Pedestrian crossing

B:-Pathway

C:-School

D:-Guarded

Correct Answer:- Option-C

Question16:-What are the three factors causes fire?

A:-Fuel, heat, spark

B:-Heat, oxygen, Electricity

C:-Fuel, heat, oxygen

D:-Heat, fuel, hydrogen

Correct Answer:- Option-C

Question17:-What is the period referred as 'golden hours'?

A:-First 30 minutes after incident

B:-First 60 minutes incident

C:-First 15 minutes incident

D:-First 45 minutes incident

Correct Answer:- Option-A

Question18:-What is the colour code for paper waste bin?

A:-Green

B:-Yellow

C:-Black

D:-Blue

Correct Answer:- Option-D

Question19:-What is the class of fire caused by fire wood, paper, cloth?

A:-Class 'A' fire

B:-Class 'C' fire

C:-Class 'B' fire

D:-Class 'D' fire

Correct Answer:- Option-A

Question20:-Which one of the following is not a part of Anvil?

A:-Horn

B:-Hardie hole

C:-Pritchel hole

D:-Pean

Correct Answer:- Option-D

Question21:-Which of the following is measure of stiffness?

A:-Modulus of plasticity

B:-Resilience

C:-Modulus of elasticity

D:-Toughness

Correct Answer:- Option-C

Question22:-Which of the following is not the property of zinc?

A:-It melt at 231.5°C

B:-Good conductor of heat and electricity

C:-It resists corrosion

D:-It is a bluish white metal

Correct Answer:- Option-A

Question23:-Which of the following statement is true in the composition of gun metal?

A:-Copper 88%, Tin 10%, Zinc 2%

B:-Copper 80%, Tin 18%, Zinc 2%

C:-Copper 82%, Tin 14%, Zinc 4%

D:-Copper 81%, Tin 18%, Zinc 1%

Correct Answer:- Option-A

Question24:-Which of the following statement is true for the application of medium carbon steel?

A:-Chisel, Dies, Pressure Vessels

B:-Shaft, Gears, Engine parts

C:-Springs, Anvil, Hammer

D:-Nails, Rivets, Pipes

Correct Answer:- Option-B

Question25:-What is the melting point of Nickel?

A:-426°C

B:-880°C

C:-1450°C

D:-512°C

Correct Answer:- Option-C

Question26:-Which of the following statement is/are correct about the properties of copper?

(i) Copper becomes brittle just below its melting point

- (ii) Copper is malleable, ductile and extremely soft
- (iii) Copper melts at 512°C and its boiling point is 1083°C

A:-Only (i and ii)

B:-Only (ii and iii)

C:-Only (i and iii)

D:-All of the above (i, ii and iii)

Correct Answer:- Option-A

Question27:-Which property of a metal is the ability to resist the effect of the tensile forces without rupture?

A:-Elasticity

B:-Plasticity

C:-Toughness

D:-Tenacity

Correct Answer:- Option-D

Question28:-Which of the following is an Aluminium alloy?

A:-Gun metal

B:-Y-Alloy

C:-Bell metal

D:-Nickel silver

Correct Answer:- Option-B

Question29:-What is meant by creep?

A:-Property of breaking material without much permanent deformation

B:-Failure of a material caused under repeated or fluctuating loads

C:-The resistance of a material to elastic deformation

D:-The slow and continuous deformation of a material under steady load

Correct Answer:- Option-D

Question30:-Which of the following is an ore of lead?

A:-Cassiterite

B:-Malachite

C:-Galena

D:-Bauxite

Correct Answer:- Option-C

Question31:-What is the compressive strength of cast iron?

A:-400 to 1000 MPa

B:-150 to 750 MPa

C:-1000 to 1500 MPa

D:-300 to 1300 MPa

Correct Answer:- Option-A

Question32:-Which furnace is suitable for wrought iron production?

A:-Cuppola furnace

B:-Blast furnace

C:-Puddling furnace

D:-Crucible furnace

Correct Answer:- Option-C

Question33:-What is the chemical method of surface cleaning?

A:-Pickling

B:-Descaling

C:-Degreasing

D:-Blast cleaning

Correct Answer:- Option-A

Question34:-What is the specific gravity of tin?

A:-11.36

B:-2.7

C:-8.2

D:-7.8

Correct Answer:- Option-D

Question35:-What is the expansion of CRCA?

A:-Cold rolled case annealing

B:-Cold rolled cast annealing

C:-Cold rolled closed annealing

D:-Cold rolled carbon alloy

Correct Answer:- Option-C

Question36:-What is the other name of super high speed steel?

A:-18-4-1 High speed steel

B:-Molybdenum high speed steel

C:-Chrome-vanadium steel

D:-Cobalt high speed steel

Correct Answer:- Option-D

Question37:-Which process is doing to reduce the hardness of a metal?

A:-Annealing

B:-Tempering

C:-Hardening

D:-Case hardening

Correct Answer:- Option-A

Question38:-Which metal is used as a insulator against nuclear radiation?

A:-Lead

B:-Tin

C:-Zinc

D:-Iron

Correct Answer:- Option-A

Question39:-What is the specific gravity of silver?

A:-11.36

B:-8.2

C:-10.7

D:-7.8

Correct Answer:- Option-C

Question40:-What is the composition of bronze?

A:-Copper and zinc

B:-Copper and Nickel

C:-Zinc and Tin

D:-Copper and Tin

Correct Answer:- Option-D

Question41:-In forging process metals are shaped by

A:-Impact

B:-Cohesion

C:-Tense

D:-None of above

Correct Answer:- Option-A

Question42:-Which type of forging done by deforming the metal at room temperature?

A:-Cold forging

B:-Simply forging

C:-Hot forging

D:-None of above

Correct Answer:- Option-A

Question43:-Press forging differs from drop forging in that it uses

A:-A series of impact

B:-Slow squeezing action

C:-Hammer slower

D:-Higher speed impact

Correct Answer:- Option-B

Question44:-Bending is a process used to

A:-Melt the metal

B:-Cut the metal into pieces

C:-Shape metal into a curved form

D:-Change the color of metal

Correct Answer:- Option-C

Question45:-Upset forging involves

A:-Reducing the diameter of a bar

B:-Increasing the length of a bar

C:-Increasing the cross sectional area of a bar

D:-Bending a bar

Correct Answer:- Option-C

Question46:-What is forging?

A:-Hammering a heated metal

B:-A casting process

C:-A electronic process

D:-A machining process

Correct Answer:- Option-A

Question47:-In hand forging, what operation is used to shape convex surfaces?

A:-Fullering

B:-Swaging

C:-Bending

D:-Cutting

Correct Answer:- Option-B

Question48:-What type of force is applied in upsetting?

A:-Tensile

B:-Compressive

C:-Shear

D:-Bending

Correct Answer:- Option-B

Question49:-What is the term for increasing the cross sectional area of a work piece?

A:-Drawing out

B:-Upsetting

C:-Fullering

D:-Swaging

Correct Answer:- Option-B

Question50:-The operation of producing cup shaped parts from flat sheet metal blanks by bending and plastic flow of metals is known as

A:-Bending

B:-Drawing

C:-Coining

D:-Blanking

Correct Answer:- Option-B

Question51:-In drawing operation metals flows due to

A:-Ductility

B:-Work hardening

C:-Plasticity

D:-Shearing

Correct Answer:- Option-C

Question52:-What type of force is primarily applied during the jumping operation?

A:-Tensile force

B:-Compressive force

C:-Shearing force

D:-Bending force

Correct Answer:- Option-B

Question53:-Forging temperature of low carbon steel is

A:-800°C to 1300°C

B:-900°C to 1150°C

C:-950° to 1100°C

D:-None of above

Correct Answer:- Option-A

Question54:-What is the primary purpose of trimming in forging?

A:-To refine the grain structure

B:-To remove excess material

C:-To harden the surface

D:-To change the shape of part

Correct Answer:- Option-B

Question55:-Which of the following is a finishing operation that involves removing

material using cutting tools?

A:-Shot blasting

B:-Machining

C:-Heat treatment

D:-Trimming

Correct Answer:- Option-B

Question56:-Which of the following a technique used to create a gradual taper in a forged component

A:-Swaging

B:-Drawing out with a hammer and anvil

C:-Upsetting

D:-All of the above

Correct Answer:- Option-B

Question57:-The process of removing the burrs or flash from a forged component in drop forging called

A:-Swaging

B:-Perforating

C:-Trimming

D:-Fettling

Correct Answer:- Option-C

Question58:-Which hardness test is known for its speed and ability to measure hardness with a small indentation

A:-Brinell

B:-Vickers

C:-Rockwell

D:-Knoop

Correct Answer:- Option-C

Question59:-What type of fuel commonly used in a blacksmith forge?

A:-Gasoline

B:-Coal and Coke

C:-Natural gas

D:-Propane

Correct Answer:- Option-B

Question60:-The primary purpose of the Bessemer process is to

A:-Extract iron from its ore

B:-Convert pig iron into steel

C:-Remove carbon from steel

D:-Make pig iron from steel

Correct Answer:- Option-B

Question61:-Which of the following is a key component of the open hearth furnace process for steel making?

A:-Continuous casting

B:-Bessemer converter

C:-Regenerative furnace

D:-Electric furnace

Correct Answer:- Option-C

Question62:-What is the main product produced by a cupola furnace?

A:-Steel

B:-Cast iron

C:-Pit iron

D:-Wrought iron

Correct Answer:- Option-B

Question63:-What is the name of molten material that floats on top of the molten iron in a blast furnace?

A:-Slag

B:-Coke

C:-Tuyere

D:-Hearth

Correct Answer:- Option-A

Question64:-What type of power supply is commonly used for electric arc furnaces?

A:-DC

B:-AC

C:-Both AC and DC

D:-None of the above

Correct Answer:- Option-C

Question65:-What is the primary alloying element in stainless steel that provides its corrosion resistance?

A:-Chromium

B:-Nickel

C:-Molybdenum

D:-Vanadium

Correct Answer:- Option-A

Question66:-Steel is an alloy of iron and _____

A:-Aluminium

B:-Copper

C:-Zinc

D:-Carbon

Correct Answer:- Option-D

Question67:-Pig iron of steel with 0% carbon is

A:-Ferrite

B:-Cementite

C:-Eutectoid

D:-Hypoentectoid

Correct Answer:- Option-A

Question68:-Lower critical Temperature of steel is

A:-600°C

B:-650°C

C:-723°C

D:-823°C

Correct Answer:- Option-C

Question69:-What is the name of steel which has the same lower and upper critical temperature?

A:-Eutectoid steel

B:-Austenite steel

C:-Martensite steel

D:-Cementite steel

Correct Answer:- Option-A

Question70:-Which of the following is not a common method of heat treatment?

A:-Hardening

B:-Tempering

C:-Annealing

D:-Extrusion

Correct Answer:- Option-D

Question71:-What is quenching?

A:-Slowly cooling the work piece

B:-Rapid heating the work piece

C:-Rapid cooling the work piece

D:-Slowly heating the work piece

Correct Answer:- Option-C

Question72:-Hardening temperature for steel with carbon content above 0.4%

A:-Slightly above the upper critical temperature

B:-Slightly above the lower critical temperature

C:-Slightly below the lower critical temperature

D:-Slightly below the upper critical temperature

Correct Answer:- Option-A

Question73:-Heat the steel 50°C above the upper critical temperature, then keep the hot pieces covered with dry sand

A:-Hardening

B:-Annealing

C:-Tempering

D:-Normalising

Correct Answer:- Option-B

Question74:-Heat the steel below 400°C and cooling in water is

A:-Hardening

B:-Tempering

C:-Annealing

D:-Normalising

Correct Answer:- Option-B

Question75:-The purpose of normalising is

A:-Soften the metal

B:-Increase the toughness

C:-Refine the structure

D:-Harden the surface

Correct Answer:- Option-C

Question76:-While normalising, the component should be cooled by

A:-Dipping in water

B:-Forced air

C:-Quenching in oil

D:-In still air to room temperature

Correct Answer:- Option-D

Question77:-The aim of tempering

A:-To remove the internal stress

B:-To increase ductility

C:-To prevent warping

D:-All of the above

Correct Answer:- Option-D

Question78:-The tempering colour of turning tools

A:-Brown

B:-Pale straw

C:-Dark blue

D:-Light blue

Correct Answer:- Option-B

Question79:-What quenching media is used for special alloy steels?

A:-Brine solution

B:-Water

C:-Oil

D:-Cold air

Correct Answer:- Option-D

Question80:-Cyaniding is a _____ process

A:-Softening

B:-Hardening

C:-Case hardening

D:-Stress relieving

Correct Answer:- Option-C

Question81:-Tempering temperature of drills and milling cutters

A:-230°C

B:-240°C

C:-250°C

D:-260°C

Correct Answer:- Option-B

Question82:-What gas is frequently used in Nitriding?

A:-Oxygen

B:-Carbon dioxide

C:-Ammonia

D:-Methane

Correct Answer:- Option-C

Question83:-What type of steel is commonly used in Nitriding?

A:-Low carbon steel

B:-Low alloy steel

C:-Medium carbon steel

D:-High carbon steel

Correct Answer:- Option-B

Question84:-What is the temperature range for carburising?

A:-500-600°C

B:-700-800°C

C:-880-930°C

D:-1000-1100°C

Correct Answer:- Option-C

Question85:-Which of the following is carburising medium?

A:-Water

B:-Oil

C:-Brine solution

D:-Charcoal

Correct Answer:- Option-D

Question86:-In an orthographic projection of an object front elevation is projected in VP below HP top view on HP. Identify in which quadrant the object is placed?

A:-Ist

B:-IIIrd

C:-IIInd

D:-IVth

Correct Answer:- Option-B

Question87:-Plan lies directly above the elevation in the _____

A:-Ist angle projection

B:-IIInd angle projection

C:-IIIrd angle projection

D:-IVth angle projection

Correct Answer:- Option-A

Question88:-Dimension should be given in one unit, preferable in _____

A:-Centre meter

B:-Meter

C:-Millimeters

D:-Inch

Correct Answer:- Option-C

Question89:-_____ system, the dimensions shall be horizontally placed so that they can be read from the bottom of the drawing sheet, non-horizontal dimension lines interrupted preferable near the middle

A:-Unidirectional

B:-Aligned

C:-Stenciling

D:-Copying

Correct Answer:- Option-A

Question90:-A quarter of the object is removed showing both internal and external details

A:-Full section

B:-Half section

C:-Offset section

D:-Broken-out section

Correct Answer:- Option-B

Question91:-In an isometric drawing the three mutually perpendicular edges of a cube are at an angle of

A:-30°

B:-90°

C:-45°

D:-120°

Correct Answer:- Option-D

Question92:-What is the length of each part of a copper wire of 225 meter long is cut into 900 equal parts?

A:-0.23 meter

B:-0.25 meter

C:-0.28 meter

D:-0.29 meter

Correct Answer:- Option-B

Question93:-If $x=25$, $y=5$, the value of x^3-xy+y^3 is _____.

A:-123

B:-125

C:-124

D:-121

Correct Answer:- Option-A

Question94:-What is the HCF of 18, 24, 42?

A:-2

B:-6

C:-18

D:-24

Correct Answer:- Option-B

Question95:-What is the square root of 529?

A:-13

B:-23

C:-33

D:-43

Correct Answer:- Option-B

Question96:-What is the volume of the cylinder whose radius is 7 cm and height 12 cm?

A:-1842 c.c

B:-1844 c.c

C:-1846 c.c

D:-1848 c.c

Correct Answer:- Option-D

Question97:-The S.I unit of force is _____

A:-Kilogram

B:-kg/m²

C:-Newton

D:-None of these

Correct Answer:- Option-C

Question98:-What is the S.I unit of pressure?

A:-Joule

B:-Pascal

C:-Bar

D:-Newton

Correct Answer:- Option-B

Question99:-What is the direction of a frictional force against a motional object?

A:-Inclined to the object

B:-Opposite to the object

C:-Parallel to the object

D:-Perpendicular to the object

Correct Answer:- Option-B

Question100:-What is the ratio of power output to power input?

A:-Work

B:-Energy

C:-Efficiency

D:-Acceleration

Correct Answer:- Option-C