PROVISIONAL ANSWER KEY

Question Paper Code:	175/2026/OL
Category Code:	553/2025
Exam:	Overseer / Draftsman(Mechanical)GR III/Tracer (Direct Recruitment)
Date of Test	10-11-2026
Department	Irrigation

Question1:-The standard size of drawing boards are specified in which of the following IS Code?

A:-IS 10711 : 1983

B:-IS 1444 : 1989

C:-IS 962 : 1989

D:-IS 11669 : 1986

Correct Answer:- Option-B

Question2:-What is the untrimmed size of A2 drawing sheet in mm?

A:-625 × 880

B:-880 × 1230

C:-450 × 625

D:-330 × 450

Correct Answer:- Option-C

Question3:-Which grade of pencil is used for lettering?

A:-HB

B:-H

C:-2H

D:-2B

Correct Answer:- Option-B

Question4:-What is the angle between Stock and Blade of a T-square?

A:-45^{o}

B:-90^{o}

C:-30^{o}

D:-60^{o}

Correct Answer:- Option-B

Question5:-The scale generally used in map preparations:

A:-1 : 1000

B:-1 : 10,000

C:-1 : 1,00,000

D:-1 : 10,00,000

Correct Answer:- Option-D

Question6:-The principle of similar Triangle is used in which of the following type of scale?

A:-Vernier Scale

B:-Diagonal Scale

C:-Plane Scale

D:-Chord Scale

Correct Answer:- Option-B

Question7:-What is the standard ratio of an arrow head width to its length?

A:-1:1

B:-1:2

C:-1:3

D:-1:4

Correct Answer:- Option-C

Question8:-Which quadrilateral has opposite sides are equal and parallel but, angles are not right angles?

A:-Trapezoid

B:-Trapezium

C:-Rhombus

D:-Rhomboid

Correct Answer:- Option-D

Question9:-In which projection, the plane of projection lies between the object and the observer?

A:-First angle

B:-Second angle

C:-Third angle

D:-Fourth angle

Correct Answer:- Option-C

Question10:-What is the standard ratio of Isometric length to true length in a isometric drawing?

A:-0.82

B:-0.71

C:-0.30

D:-0.45

Correct Answer:- Option-A

Question11:-Which one of the following is the SI unit of temperature?

A:-Degree Celcius

B:-Degree Fahrenheit

C:-Kelvin

D:-None of these

Correct Answer:- Option-C

Question12:-One foot is equal to _____cm.

A:-30 cm

B:-30.48 cm

C:-40 cm

D:-50 cm

Correct Answer:- Option-B

Question13:-Give the total surface area of cube if the length of one side of cube is 'a'.

A:-a^2

B:-$6a^2$

C:-4a

D:-6a

Correct Answer:- Option-B

Question14:-Give the volume of sphere

A:-4/3 πr^3

B:-4/3 πr^2

C:-1/3 πr^3

D:-1/3 πr^2

Correct Answer:- Option-A

Question15:-Give the volume of a cone of circular base

A:-4/3 πr^3

B:-4/3 $\pi r^2 h$

C:-1/3 πr^3

D:-1/3 $\pi r^2 h$

Correct Answer:- Option-D

Question16:-Give the area of equilateral triangle of side 'a'.

A:- $\frac{\sqrt{3}}{4}a^2$

B:- $4/\sqrt{3}a^2$

C:-1/3 πr^2

D:-None of these

Correct Answer:- Option-A

Question17:-What is the shortcut key of the command 'RECTANGLE' in AutoCAD?

A:-R

B:-RE

C:-REC

D:-RT

Correct Answer:- Option-C

Question18:-Which function key is used to toggle between SNAP mode ON or OFF in AUTOCAD?

A:-F9

B:-F10

C:-F6

D:-F3

Correct Answer:- Option-A

Question19:-Which is the extension of an AutoCAD drawing file?

A:-.xls

B:-.ppt

C:-.pdf

D:-.dwg

Correct Answer:- Option-D

Question20:-What is the full form of GUI?

A:-Graphical Union Interface

B:-Graphical User Interface

C:-Geo user Interface

D:-None of these

Correct Answer:- Option-B

Question21:-Which command is used to create a bevelled corner between two lines in AutoCAD?

A:-Chamfer

B:-Extend

C:-Pline

D:-Offset

Correct Answer:- Option-A

Question22:-What is the shortcut key for the TRIM command in AutoCAD?

A:-T

B:-TR

C:-TM

D:-TI

Correct Answer:- Option-B

Question23:-Which keyboard shortcut key is used in redo last action in AutoCAD?

A:-Ctrl+C

B:-Ctrl+A

C:-Ctrl+X

D:-Ctrl+Y

Correct Answer:- Option-D

Question24:-Which of the following command comes under the Modify menu?

A:-Spline

B:-Polygon

C:-Offset

D:-Donut

Correct Answer:- Option-C

Question25:-In which industries is the development of surfaces widely used?

A:-Sheet metal work

B:-Fabrication

C:-Packaging

D:-All of the above

Correct Answer:- Option-D

Question26:-What is meant by the development of surfaces?

A:-Drawing the front view of an object

B:-Drawing the top view of an object

C:-Unfolding or unrolling all the surfaces of a solid object on to a plane

D:-Rotating a solid object

Correct Answer:- Option-C

Question27:-Which of the following method is used to develop the surface of a prism?

A:-Radial-line method

B:-Parallel-line method

C:-Projection method

D:-All of the above

Correct Answer:- Option-B

Question28:-What is the shape of the development of the lateral surface of a right circular cone?

A:-Sector of a circle

B:-Rectangle

C:-Triangle

D:-Circle

Correct Answer:- Option-A

Question29:-Which of the following solids has a lateral surface that can be developed into a rectangle?

A:-Cone

B:-Sphere

C:-Cylinder

D:-All of the above

Correct Answer:- Option-C

Question30:-Which of the following methods is commonly used for the development of transition piece?

A:-Triangulation method

B:-Parallel-line method

C:-Radial-line method

D:-Projection method

Correct Answer:- Option-A

Question31:-When two solids intersect, the common line formed on their surfaces is called _____.

A:-Cutting plane

B:-Intersection curve

C:-Centre line

D:-Reference line

Correct Answer:- Option-B

Question32:-Which of the following statements are correct?
i. The intersection of two plane surfaces is a straight line
ii. The intersection of two curved surfaces is a curve
iii. The intersection of a plane surfaces and a curved surface is a curve

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-D

Question33:-When two cylinders intersect at right angles, their axes are _____.

A:-Parallel

B:-Perpendicular

C:-Inclined at 45 degree

D:-Coincident

Correct Answer:- Option-B

Question34:-"The generators of a cone meet at _____".

A:-Centre of the base

B:-The apex

C:-Midpoint of the axis

D:-Directrix

Correct Answer:- Option-B

Question35:-The top surface joining the two-adjacent flanks of a screw thread is called the _____.

A:-Crest

B:-Flank

C:-Pitch diameter

D:-Root

Correct Answer:- Option-A

Question36:-For a double start screw thread, the relation between Lead (L) and Pitch (P) is

A:-L = P

B:-L = 3P

C:-L = 2P

D:-L = P/2

Correct Answer:- Option-C

Question37:-What is the included thread angle for an ISO Metric thread?

A:-55^{o}

B:-29^{o}

C:-47.5^{o}

D:-60^{o}

Correct Answer:- Option-D

Question38:-Which screw thread profile is designed specially to transmit power in one direction only?

A:-Knuckle thread

B:-Buttress thread

C:-Square thread

D:-Acne thread

Correct Answer:- Option-B

Question39:-In a thread designation M16 × 1.5, the number 1.5 represents the _____.

A:-Length of bolt in mm

B:-Nominal diameter in mm

C:-Number of threads per inch

D:-pitch in mm

Correct Answer:- Option-D

Question40:-Which type of nut features a cylindrical collar with slots cut across it to receive a split pin for positive locking?

A:-Castle nut

B:-Cap nut

C:-Wing nut

D:-Flanged nut

Correct Answer:- Option-A

Question41:-A joint formed by overlapping two metal plates and welding then together is called

A:-Corner joint

B:-Lap joint

C:-Edge joint

D:-Butt joint

Correct Answer:- Option-B

Question42:-Which symbol is used to denote a single V butt weld?

A:-U

B:-X

C:-Y

D:-V

Correct Answer:- Option-D

Question43:-In a welding symbol, what basic geometric shape represents a fillet weld?

A:-Right angled Triangle

B:-Square

C:-Semi Circle

D:-Circle

Correct Answer:- Option-A

Question44:-According to SP-46 drawing standards the reference line should preferable be drawn

A:-Horizontally parallel to the bottom of the drawing sheet

B:-Vertically

C:-Perpendicular to the arrow line

D:-Tolerance

Correct Answer:- Option-A

Question45:-When using a main nut along with lock nut (check nut) what is the type of thickness to the lock nut relative to bold diameter (d)?

A:-0.5d to 0.6d

B:-0.8d to 1.0 d

C:-1.2d to 1.5d

D:-2d

Correct Answer:- Option-A

Question46:-In a wiles nut (sawn nut) how is the locking action achieved?

A:-By using a fibre ring washer

B:-By bending a tab over the side

C:-By cutting a horizontal slot halfway through the nut and tightening a small screw across it

D:-By inserting a split pin

Correct Answer:- Option-C

Question47:-Which head profile is designed to set completely flush with or below the surface of the component?

A:-Snap head

B:-Countersunk head

C:-Pan head

D:-Hexagon head

Correct Answer:- Option-B

Question48:-Which foundation bolt is designed so that it can be easily removed or withdrawn from the foundation without disturbing the concrete structure?

A:-Lewis foundation bolt

B:-L bent foundation bolt

C:-Curved foundation bolt

D:-Rag foundation bolt

Correct Answer:- Option-A

Question49:-An eye foundation bolt features a circular loop at its lower end through which a _____ is inserted to anchor it into the foundation.

A:-Split pin

B:-Set screw

C:-Spring ring

D:-Cross bar or cotter

Correct Answer:- Option-D

Question50:-What is the primary functional purpose of foundation bolt?

A:-Joining thin sheet metal together

B:-Securely achoring heavy machinery

C:-Locking two rotating gears on a shaft

D:-Transmitting rotating power between shaft

Correct Answer:- Option-B

Question51:-Small diameter pipe end cutting may be done

A:-Pipe Cutter

B:-Arc Cutting

C:-Oxy-fuel gas Cutting

D:-Plasma Cutting

Correct Answer:- Option-A

Question52:-This technique generally used to make Welded Joints in all positions and various sizes of thin walled pipes

A:-All position rightward welding

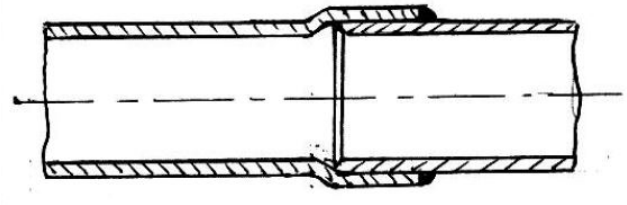
B:-All position leftward welding

C:-Rightward welding

D:-Leftward welding

Correct Answer:- Option-D

Question53:-What is the type of pipe joint?



A:-Gusset bend

B:-Bell and spigot joint

C:-Plain joint with liner

D:-Plain joint without liner

Correct Answer:- Option-B

Question54:-_____ is used to connect two pipes with different diameter.

A:-Cap

B:-Plug

C:-Reducer

D:-Coupling

Correct Answer:- Option-C

Question55:-Which type of rivets are used for heavy construction engineering work?

A:-Mushroom head

B:-Flat head

C:-Countersunk head

D:-Pan head

Correct Answer:- Option-D

Question56:-Shearing the rivet in a riveted joint occurs due to the

A:-Diameter of the rivet being too large

B:-Pitch of the holes being too large

C:-Rivet holes being drilled to near the edge of plate

D:-Diameter of the rivet being too small, compared with the thickness of plate

Correct Answer:- Option-D

Question57:-Mechanical property of rivets are

A:-Ductility

B:-Malleability

C:-Plasticity

D:-Elasticity

Correct Answer:- Option-A

Question58:-What is the formula to calculate the length of snap head rivet, If 'D' is dia of rivet and 'T' is total thickness of plate to be joined?

A:-L = T + 1.5D

B:-L = T + 2D

C:-L = T + 3D

D:-L = 2T + 2D

Correct Answer:- Option-A

Question59:-How many types of riveted joints are used?

A:-2

B:-3

C:-4

D:-6

Correct Answer:- Option-C

Question60:-What type of defect will occur, if the pitch distance between rivets are too close?

A:-Splitting

B:-Tearing

C:-Buckling

D:-Gaping

Correct Answer:- Option-B

Question61:-In a toothed belt drive, the number of teeth on the driver pulley is 30 and the number of teeth on the driven pulley is 20. If the RPM of the driver pulley is 700, what is the RPM of the driven pulley?

A:-1050

B:-490

C:-700

D:-460

Correct Answer:- Option-A

Question62:-In belt drive, what is the actual difference caused between the surface speed of the belt and pulley?

A:-Creep

B:-Dressing

C:-Slip

D:-Crowning

Correct Answer:- Option-C

Question63:-Which one of the following belt fastener is used for heavy duty purpose?

A:-Wire type belt fastener

B:-Jackson-type belt fastener

C:-Crescent plate belt fastener

D:-Lagrelle type belt fastener

Correct Answer:- Option-D

Question64:-What is the power delivered by a belt drive if the tension on the tight side is 2000 N, the tension on the slack side is 600 N and the linear speed is 20 m/s?

A:-70 W

B:-130 W

C:-52000 W

D:-28000 W

Correct Answer:- Option-D

Question65:-In which of the following cases is an E-type cross-section V-belt used?

A:-Light Duty

B:-Heavy Duty

C:-When the distance between the driver and driven pulleys is large

D:-To ensure a slip-free drive

Correct Answer:- Option-B

Question66:-What is the nominal top width of a V-belt with A-type cross section?

A:-10

B:-13

C:-17

D:-22

Correct Answer:- Option-B

Question67:-Which one of the following factors increases slip in a belt drive?

A:-Use of a jockey pulley

B:-A short distance between the driver and driven pulleys

C:-A minimal size difference between the driver and driven pulleys

D:-Application of resin between belt and pulley

Correct Answer:- Option-B

Question68:-Which one of the following belt drives is used to obtain different speed ratios?

A:-Open belt drive

B:-Cross belt drive

C:-Stepped drive

D:-Right angled drive

Correct Answer:- Option-C

Question69:-What is the ratio of pitch diameter to the number of teeth of a gear?

A:-Addendum

B:-Dedendum

C:-Module

D:-Pitch circle

Correct Answer:- Option-C

Question70:-What is the radial distance between the pitch circle and root circle?

A:-Module

B:-Addendum

C:-Dedendum

D:-Working depth

Correct Answer:- Option-C

Question71:-Which gears can be used to transmit power two parallel shafts with smoother operation than spur gear?

A:-Helical gear

B:-Bevel gear

C:-Mitre gear

D:-Hypoid gear

Correct Answer:- Option-A

Question72:-Which statement is correct about a spur gear?
i. Addendum circle is also called root circle.
ii. Base circle is the circle from which the involutes tooth profile is developed.
iii. Pitch circle is the imaginary circle on which two mating gears seems to be rolling.
iv. Dedendum is the radial distance between the pitch circle and the outside circle.

A:-i and ii

B:-ii only

C:-ii and iii

D:-ii and iv

Correct Answer:- Option-C

Question73:-Which statement is correct about type of gears?
i. In helical gear, the teeth are cut parallel to axis of rotation.
ii. Worm gear are used for speed reduction purpose.
iii. Bevel gear is used to change rotary motion to linear motion.
iv. Hypoid gears are used in automotive differential gear boxes.

A:-i and iv

B:-ii only

C:-ii and iii

D:-ii and iv

Correct Answer:- Option-D

Question74:-Which statement is correct about fixing gear wheel for various purposes?
i. Spur gear and helical gear are used for parallel axis drive.
ii. Worm gear are used for intersecting axis drive.
iii. Lathe gear is an example of non parallel axis drive.
iv. Shaping Machine table is an example of intersecting axis drive.

A:-i and ii

B:-iv only

C:-i and iv

D:-iii and iv

Correct Answer:- Option-C

Question75:-One bar is equal to how many Pascal?

A:-100 Pascal

B:-1000 Pascal

C:-10000 Pascal

D:-100000 Pascal

Correct Answer:- Option-D

Question76:-The inter locked air bubbles and pockets in the hydraulic pipe line and components is called

A:-Friction

B:-Cavitation

C:-Vibration

D:-Water hammer

Correct Answer:- Option-B

Question77:-Which valve is used to permit fluid flow in one direction and block flow in opposite direction?

A:-Check valve

B:-Pressure relief valve

C:-Shuttle valve

D:-Orifice valve

Correct Answer:- Option-A

Question78:-Which causes more than 90% of hydraulic system failure?

A:-Leak of valve

B:-Pump

C:-Contamination of hydraulic fluid

D:-Electric power

Correct Answer:- Option-C

Question79:-Which part of double acting cylinder prevents the dust or foreign particles entering inside?

A:-Static seal

B:-Viper seal

C:-Piston seal

D:-Rod seal

Correct Answer:- Option-B

Question80:-Which is the periodic oil drain from the compressor?

A:-Once in year

B:-Once in month

C:-Once in a week

D:-Once in every 3 months

Correct Answer:- Option-C

Question81:-Which type of filter is used for tapping various sizes of particular matter?

A:-Adsorbent filter

B:-Absorbent filter

C:-Mechanical filter

D:-Magnetic filter

Correct Answer:- Option-A

Question82:-Which property of oil that controls the flow in hydraulic system?

A:-Flash point

B:-Pour point

C:-Oilness

D:-Viscosity

Correct Answer:- Option-D

Question83:-What is the purpose of direction control valve in hydraulic system?

A:-Control the valve

B:-Increase the pressure

C:-Decreasing the pressure

D:-Open or Close

Correct Answer:- Option-D

Question84:-Which law are states that the pressure exerted on a liquid is transmitted equally in all the direction?

A:-Boyles law

B:-Charles law

C:-Pascal's law

D:-Bernoulli's law

Correct Answer:- Option-C

Question85:-Which of the following statements is/are correct regarding BIS system of Limit?
i. 'Basic size' is the exact theoretical size in relation to which all limits of variation are determined.
ii. 'Actual size' is the actual measured size of the finished component.
iii. The 'Zero line' on a tolerance diagram represents the minimum limit of size.

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

Question86:-The algebraic difference between the minimum limit of size and the corresponding basic size of a component is called:

A:-Upper deviation

B:-Lower deviation

C:-Fundamental deviation

D:-Actual deviation

Correct Answer:- Option-B

Question87:-Which of the following fits is obtained when the tolerance zone of the hole is located entirely above the tolerance zone of the shaft on a tolerance diagram?

A:-Clearance fit

B:-Interference fit

C:-Transition fit

D:-Shrink fit

Correct Answer:- Option-A

Question88:-Which of the following statements is/are correct regarding the representation of surface roughness grades (N-grades)?
i. Grade N1 corresponds to a roughness value (Ra) of 0.025 μm.
ii. Grade N8 is indicated by a symbol of four triangles.
iii. For general application, roughness values are graded into 12 grades and designated N1, N2 ..... N12.

A:-Only (ii and iii)

B:-Only (i and ii)

C:-Only (i and iii)

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

Correct Answer:- Option-C

Question89:-Which of the following statements about the graphical symbol for surface texture is/are correct?
i. A basic symbol consisting of two legs of unequal length implies that removal of material is mandatory.
ii. A circle added to the basic symbol (in the vee) means removal of material is not permitted.
iii. The longer leg of the symbol should always be drawn on the right side.

A:-Only (i and ii)

B:-Only (i and iii)

C:-Only (ii and iii)

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

Correct Answer:- Option-C

Question90:-If a surface requires an Ra value of 0.8 μm , which N-grade does it correspond to?

A:-N3

B:-N4

C:-N5

D:-N6

Correct Answer:- Option-D

Question91:-Which of the following statement is/are correct regarding mathematical parameters of fits?
i. Maximum clearance is calculated as the difference between the Maximum hole and the Minimum shaft.
ii. Minimum clearance is calculated as the Maximum hole minus the Maximum shaft.
iii. Maximum interference is calculated as the difference between the Minimum hole and the Maximum shaft.

A:-Only (i and ii)

B:-Only (i and iii)

C:-Only (ii and iii)

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

Correct Answer:- Option-B

Question92:-Which geometrical tolerance symbol consists of two parallel straight lines inclined to the vertical?

A:-Flatness

B:-Angularity

C:-Straightness

D:-Parallelism

Correct Answer:- Option-D

Question93:-Which component of an anti-friction bearing keeps the rolling elements properly spaced?

A:-Inner race

B:-Outer race

C:-Cage

D:-Shaft

Correct Answer:- Option-C

Question94:-What is the main function of a bearing?

A:-To increase shaft speed

B:-To support a rotating shaft and reduce friction

C:-To create friction between shaft and hub

D:-To prevent rotation of the shaft

Correct Answer:- Option-B

Question95:-Which statement correctly describes the load-carrying capacity of roller bearings?

A:-Roller bearings carry less radial load than ball bearings

B:-Roller bearings are intended only for axial loads

C:-Roller bearings can carry greater radial loads than ball bearings of the same size

D:-Roller bearings cannot be used for journal loads

Correct Answer:- Option-C

Question96:-What type of loading can a radial or journal bearing withstand?

A:-The loading is at right angles to the bearing axis

B:-The loading is parallel to the bearing axis

C:-The loading is both at right angles and parallel to the bearing axis

D:-The loading is at an angle to the bearing axis

Correct Answer:- Option-A

Question97:-What is the advantage of using an adjustable slide bearing?

A:-Maintenance and replacement of this bearing is easy.

B:-The misalignment between mating parts can be compensated.

C:-Suitable where the sliding parts are at an angle.

D:-This type of bearing has provision for wear adjustment.

Correct Answer:- Option-D

Question98:-Which type of bearing is designed to take both axial and radial loads?

A:-Needle bearing

B:-Angular contact ball bearings

C:-Roller bearings

D:-Thrust ball bearings

Correct Answer:- Option-B

Question99:-Thrust ball bearings are useful for:

A:-Taking Vertical thrust load

B:-Taking radial load

C:-Limited bearing space in housing

D:-Taking both radial and axial load

Correct Answer:- Option-A

Question100:-Which bearing can carry journal loads that are slightly inclined due to shaft misalignment?

A:-Angular contact ball bearings

B:-Tapered roller bearings

C:-Double row ball bearings

D:-Self-aligning ball bearings

Correct Answer:- Option-D