

Tracerer(LSGD)

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Answer Key & Detailed Explanations

Answer Key

Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	A	26	A	51	B	76	B
2	B	27	D	52	D	77	C
3	A	28	D	53	C	78	A
4	B	29	C	54	B	79	C
5	C	30	A	55	B	80	A
6	A	31	D	56	C	81	D
7	C	32	A	57	D	82	B
8	A	33	B	58	D	83	C
9	B	34	C	59	A	84	D
10	D	35	D	60	B	85	B
11	B	36	A	61	A	86	A
12	A	37	B	62	C	87	C
13	B	38	A	63	D	88	A
14	A	39	C	64	B	89	D
15	D	40	D	65	C	90	C
16	B	41	D	66	B	91	A
17	D	42	A	67	B	92	B
18	A	43	C	68	C	93	C
19	B	44	D	69	A	94	A
20	C	45	C	70	B	95	B
21	A	46	C	71	D	96	C
22	B	47	A	72	B	97	D
23	C	48	D	73	C	98	B
24	D	49	D	74	D	99	A
25	B	50	A	75	B	100	B

Detailed Explanations

Q1. Which of the following statements are correct for Rhomboid?

Correct Answer: A) i, iii

Explanation: A rhomboid is a parallelogram with opposite sides equal and parallel. Its adjacent angles are generally oblique rather than 90° , so statements i and iii are correct; statement ii describes a rhombus and statement iv describes a rectangle/square condition.

Q2. Actual length of a room is 10 m and is represented by 200 mm in the drawing. Then the scale of the drawing is

Correct Answer: B) 1 : 50

Explanation: Convert the actual length to the same unit: $10 \text{ m} = 10,000 \text{ mm}$. Scale = drawing length / actual length = $200 / 10,000 = 1/50$, hence the representative fraction is 1 : 50.

Q3. In first angle projection

Correct Answer: A) i, iii

Explanation: In first-angle projection, the object is imagined in the first quadrant. The top view is placed below the front view, and the right-side view is placed to the left of the front view. Therefore statements i and iii are correct.

Q4. The length to height ratio of closed filled arrow head is

Correct Answer: B) 3 : 1

Explanation: A standard closed filled arrowhead used in engineering drawing is proportioned with its length approximately three times its height. Hence the length : height ratio is 3 : 1.

Q5. While calculating the quantity of brick work, no deduction or addition shall be made for the following

Correct Answer: C) ii, iii, iv

Explanation: In brickwork measurement, very small openings up to 0.1 m^2 are not deducted. Small ends of beams/joists/posts etc. and specified wall plates or slab/chajja bearings within the stated limits are also ignored for deduction/addition. An opening up to 1 m^2 is too large for this exemption, so ii, iii and iv are correct.

Q6. While preparing estimate, plastering bands of 30 cm or below are measured in

Correct Answer: A) Running meter

Explanation: Narrow plastering bands of width 30 cm or less are commonly measured by length rather than area. Therefore the appropriate unit is running metre.

Q7. Which of the following cost is not included in rate analysis of an item?

Correct Answer: C) Land cost

Explanation: Rate analysis includes materials, labour, equipment, overheads and contractor's profit connected with executing the item. The cost of land belongs to the project/property cost and is not part of the unit rate analysis of a construction item.

Q8. Quantity of dry materials required for one cu m of finished concrete in M 15 grade is

Correct Answer: A) Cement – 0.22 cu m, Sand – 0.44 cu m, Aggregate – 0.88 cu m

Explanation: For nominal M15 concrete, the mix proportion is 1 : 2 : 4. Taking the dry volume as about 1.54 m^3 for 1 m^3 finished concrete gives cement = $1.54/7 \approx 0.22 \text{ m}^3$, sand $\approx 0.44 \text{ m}^3$ and aggregate $\approx 0.88 \text{ m}^3$.

Q9. An instrument made of lead bar enclosed in rubber and can be bent into any shape to draw smooth curve passing through any given points

Correct Answer: B) Flexible curve

Explanation: A flexible curve is a bendable strip, traditionally made with a lead core and flexible covering, which can be shaped to pass through a set of points. A French curve is rigid and offers only preformed curves.

Q10. The length to width ratio of drawing sheet is

Correct Answer: D) $\sqrt{2} : 1$

Explanation: ISO drawing sheets retain the $\sqrt{2}$ aspect ratio so that halving a sheet preserves the same proportion. Thus length : width = $\sqrt{2} : 1$.

Q11. Which type lines are used for drawing diagonal lines, hatching etc.?

Correct Answer: B) Type B

Explanation: Type B in the conventional line classification is a continuous thin line. Continuous thin lines are used for hatching/section lines, dimension lines, projection lines and similar light construction work.

Q12. In a drawing, the letters and numbers are designated by their

Correct Answer: A) Height

Explanation: The size of lettering in engineering drawing is specified by the height of the characters. Standard lettering series are therefore designated by letter/number height.

Q13. Unit of measurement for DPC

Correct Answer: B) Square meter

Explanation: Damp-proof course (DPC) is a thin layer spread over an area of wall/floor. In measurement it is therefore taken in square metres.

Q14. What is printed list of rates of various items of work maintained by the engineering department?

Correct Answer: A) Schedule of rates

Explanation: A Schedule of Rates (SOR) is the officially maintained list of unit rates for standard items of work. It is used for estimating, tender comparison and valuation of departmental works.

Q15. The total cost of construction including land or the original total amount required to possess a property

Correct Answer: D) Capital cost

Explanation: Capital cost is the total original cost required to acquire or construct a property, including land and construction-related expenditure. It is different from market value, book value or capitalized value.

Q16. The gradual exhaustion of the usefulness of a property due to structural deterioration, use, life, wear and tear, decay and obsolescence.

Correct Answer: B) Depreciation

Explanation: Depreciation is the gradual reduction in the value/usefulness of a property due to age, wear and tear, decay, deterioration and obsolescence. It is an allowance for loss of value over time.

Q17. Which of the following standard should considered in planning?

Correct Answer: D) Local building – Bye laws

Explanation: Building planning must comply with the local building bye-laws enforced by the competent local authority. These regulate matters such as setbacks, height, floor-area limits, access, light/ventilation and other planning controls.

Q18. Which of the following is used as escape elements in building for fire safety?

Correct Answer: A) Lobbies

Explanation: Protected lobbies may form part of the means of escape in a fire-safe building, along with corridors, staircases and entrances. A strong room, an ordinary floor surface or an outer wall is not by itself an escape element.

Q19. Which is an item rate estimate?

Correct Answer: B) Annual repair

Explanation: Plinth-area, cubical-content and preliminary estimates are approximate estimates. Annual repair works are normally prepared from quantities of individual items multiplied by their respective rates, so they are item-rate estimates.

Q20. Which estimate is prepared while the original sanctioned estimate is exceeded by more than 5%?

Correct Answer: C) Revised

Explanation: When the cost of a sanctioned work is expected to exceed the sanctioned estimate beyond the permitted limit (commonly more than 5%), a revised estimate is prepared with reasons for the excess and updated quantities/rates.

Q21. Which steel is used for manufacture of structural steel?

Correct Answer: A) Mild steel

Explanation: Structural steel for ordinary building work is predominantly mild/low-carbon steel because it combines adequate strength, ductility, weldability and ease of fabrication. Medium- and high-carbon steels are used for more specialized purposes.

Q22. Brass is an alloy of

Correct Answer: B) Copper and zinc

Explanation: Brass is primarily an alloy of copper and zinc. Copper-tin is bronze, while lead-based combinations have different names and properties.

Q23. When cement is added to lime mortar to improve quality and achieve early strength

Correct Answer: C) Gauged mortar

Explanation: When cement is mixed with lime mortar to improve strength and accelerate early hardening, the resulting mortar is called gauged mortar. It combines the workability of lime with the faster strength development of cement.

Q24. Period of natural seasoning of timber in presence of air

Correct Answer: D) 2-4 year

Explanation: Natural or air seasoning dries timber by stacking it so air can circulate around it. Traditional textbook air seasoning is a slow process and can take roughly 2–4 years depending on timber thickness, species and climate.

Q25. The liquid substance which hold the ingredients of a paint in liquid suspension

Correct Answer: B) Vehicle

Explanation: The vehicle is the liquid binder/carrier in paint that holds the solid ingredients in suspension and helps form the paint film. A solvent mainly adjusts viscosity, while driers accelerate drying.

Q26. Cast iron manufacture in

Correct Answer: A) Cupola furnace

Explanation: Cast iron is commonly produced by remelting pig iron and scrap in a cupola furnace. A blast furnace is mainly used to produce pig iron from iron ore.

Q27. Harmful ingredients in brick earth

Correct Answer: D) All of these

Explanation: Organic matter/vegetation, pebbles and alkalies can all impair brick quality. They may cause weak spots, cracking, efflorescence or other defects; hence all the listed substances are harmful ingredients.

Q28. Who was the inventor of artificial cement?

Correct Answer: D) Joseph Aspidin

Explanation: Joseph Aspidin patented Portland cement in 1824 and is commonly credited in basic building-material texts with the invention of artificial cement/Portland cement. John Smeaton's earlier work contributed to hydraulic lime and cement development.

Q29. The quantity of gypsum added in cement to

Correct Answer: C) Retard the setting

Explanation: Gypsum is added during cement manufacture mainly to control the rapid reaction of aluminates. It retards the setting sufficiently to provide workable time for mixing, placing and finishing.

Q30. The test is done to find out the rate of wear of stones which are used in road construction

Correct Answer: A) Attrition test

Explanation: The attrition test assesses the resistance of stone aggregates to wear caused by rubbing/abrasive action. This property is important for aggregates used in road construction.

Q31. The slump value for normal RCC work

Correct Answer: D) 80-150 mm

Explanation: Normal RCC work generally requires medium workability so concrete can pass around reinforcement and be compacted properly. In the textbook classification used by this paper, the corresponding slump range is 80–150 mm.

Q32. Which lime used for plastering and whitewashing?

Correct Answer: A) Fat lime

Explanation: Fat lime is highly plastic and gives a smooth finish, making it suitable for plastering and whitewashing. Hydraulic lime is selected where setting under damp/wet conditions is required.

Q33. The transverse member used in bricklayer scaffolding one end of which is placed into the hole on the wall

Correct Answer: B) Putlog

Explanation: A putlog is a transverse scaffolding member with one end supported on the ledger and the other inserted into a hole in the wall. It supports the working platform in bricklayer's scaffolding.

Q34. The minimum load which may cause the failure of foundation is called

Correct Answer: C) Ultimate bearing capacity

Explanation: Ultimate bearing capacity is the limiting foundation pressure/load at which the supporting soil reaches shear failure. Safe bearing capacity is obtained after applying an appropriate factor of safety and settlement considerations.

Q35. Provision of a layer of water repellent material between the source of dampness and part of structure adjacent to it is called

Correct Answer: D) Membrane damp proofing

Explanation: Membrane damp proofing places an impervious or water-repellent layer between the source of moisture and the building element. Examples include bituminous felt, membranes and metal/plastic sheets.

Q36. The space between the back of the arch ring and the horizontal plane tangent to the crown

Correct Answer: A) Spandril

Explanation: The spandrel is the roughly triangular space above the extrados/back of an arch and below the horizontal line through the crown. The haunch is the part of the arch between the crown and springing.

Q37. The roof which slopes two direction is

Correct Answer: B) Gable roof

Explanation: A gable roof has two sloping roof surfaces meeting at a ridge, so it slopes in two principal directions. A hipped roof normally slopes on all four sides.

Q38. The temporary structure constructed to remove water from the construction area

Correct Answer: A) Cofferdam

Explanation: A cofferdam is a temporary enclosure constructed in or near water so the enclosed area can be dewatered and excavation/foundation work performed in dry conditions.

Q39. A combined footing is commonly used when

Correct Answer: C) Two columns are spaced close to each other

Explanation: A combined footing supports two or more columns on one foundation slab. It is commonly adopted when adjacent columns are close enough that separate footings would overlap or interact excessively.

Q40. For cantilever beam main reinforcement is placed at

Correct Answer: D) Top

Explanation: A downward-loaded cantilever has maximum negative bending moment at the fixed support, producing tension at the top. Therefore the main tensile reinforcement is placed near the top face.

Q41. The clear cover for foundation slabs and beams

Correct Answer: D) 50 mm

Explanation: Foundation concrete is in contact with soil and moisture, so a larger nominal cover is required for durability. The standard objective answer for foundation slabs and beams is 50 mm.

Q42. Which type of welding is used when the members to be connected overlap each other?

Correct Answer: A) Fillet weld

Explanation: When members overlap, they form a lap joint and are normally connected along the overlapping edges using fillet welds. 'Lap' describes the joint arrangement; fillet describes the weld form used at the edge.

Q43. Going in cm + (2 × Rise in cm) should be

Correct Answer: C) 60-65

Explanation: A commonly used empirical stair relationship is $2R + G \approx 60-65$ cm, where R is rise and G is going/tread. This produces a comfortable proportion between vertical and horizontal movement.

Q44. The topmost horizontal member of a door frame is

Correct Answer: D) Head

Explanation: The head is the top horizontal member of a door frame. The two vertical members are jambs/posts, while horns are extensions used for anchoring the frame into masonry.

Q45. The tool used for pulling out nails, tack from wood

Correct Answer: C) Pincer

Explanation: Pincers are gripping tools designed to pull out nails and tacks from wood. A gimlet is used for boring small holes, while braces hold drilling bits.

Q46. In which type of stair, the bottom wide flight is divided at a landing into two narrower flights which branch off to the right and left

Correct Answer: C) Bifurcated stair

Explanation: In a bifurcated stair, a wide lower flight reaches a landing and then divides into two narrower flights going in opposite directions. This arrangement is common in public and monumental buildings.

Q47. The height of slump cone is

Correct Answer: A) 30 cm

Explanation: The standard slump cone is 300 mm high, with a top diameter of about 100 mm and bottom diameter about 200 mm. Therefore its height is 30 cm.

Q48. The method by which compressive stresses are induced in the structure artificially before it is loaded

Correct Answer: D) Pre stressed concrete

Explanation: Prestressed concrete is concrete in which compressive stress is intentionally introduced before service loads act, counteracting later tensile stresses. Prestressing may be achieved by pre-tensioning or post-tensioning.

Q49. The horizontal course of masonry project from the face of wall at every floor or sill level

Correct Answer: D) String course

Explanation: A string course is a narrow horizontal projecting band of masonry carried along a wall, often at floor or sill level. It is used for architectural division and may also help throw rainwater away from the wall face.

Q50. The cut underside of a projected course of masonry which is provided to check the creepage of rain water on the underside of projected portion

Correct Answer: A) Throating

Explanation: Throating is a groove or cut made on the underside of a projecting member such as a coping or cornice. It breaks the path of water and prevents rainwater from creeping back along the underside toward the wall.

Q51. A wooden headed hammer used for wooden headed chisel

Correct Answer: B) Mallet

Explanation: A mallet is a wooden-headed hammer used with wooden-handled chisels and for work where a metal hammer could damage the tool or surface. It delivers a softer impact.

Q52. The type of bond in which the bricks are laid in course inclined at 45° in two directions from the center

Correct Answer: D) Herring bone bond

Explanation: In herringbone bond, bricks are laid diagonally, usually at about 45°, in alternating directions to form the characteristic herringbone pattern. It is often used in paving and ornamental panels.

Q53. The canal, which is aligned along the ridge

Correct Answer: C) Watershed canal

Explanation: A canal aligned along a watershed/ridge is called a watershed canal (or ridge canal). Because the ground falls away on both sides, cross-drainage requirements are generally reduced.

Q54. The main purpose of providing a surge tank in a hydroelectric power plant is

Correct Answer: B) To reduce the water hammer pressure formed in the penstock

Explanation: A surge tank absorbs sudden changes in water flow in a penstock. It limits pressure rise/fall caused by rapid load changes and therefore reduces water-hammer effects.

Q55. The purpose of applying the principle of working from whole to part in surveying is

Correct Answer: B) To prevent the accumulation of errors

Explanation: Surveying from whole to part first establishes a strong control framework and then fills in smaller details. This prevents local measurement errors from accumulating and distorting the entire survey.

Q56. Which of the following statements is/are correct?

Correct Answer: C) Only i, iii and iv

Explanation: Statement i is correct: a true meridian can be fixed astronomically. Statement ii is false because a true bearing is measured from the true meridian, not the magnetic meridian. Statements iii and iv are correct because a compass establishes the magnetic meridian and measures magnetic bearings.

Q57. A non-circular curve introduced between a straight and a circular curve or between two branches of a compound curve or a reverse curve is known as

Correct Answer: D) Transition curve

Explanation: A transition curve has gradually changing curvature and is inserted between a straight and a circular curve, or between circular curves of different curvature. It provides a smooth change in centrifugal effect and superelevation.

Q58. Turning the telescope about its vertical axis in the horizontal plane in a theodolite is known as

Correct Answer: D) Swinging

Explanation: Swinging is rotation of a theodolite telescope about the instrument's vertical axis in the horizontal plane. Transiting/plunging refers to rotating the telescope about its horizontal axis through 180°.

Q59. The angle between the preceding line and the succeeding line is called

Correct Answer: A) Deflection angle

Explanation: A deflection angle is the angle between the extension of the preceding survey line and the succeeding line. It may be measured to the right or left depending on the direction of turn.

Q60. The space between two lines in a double-line field book is reserved for

Correct Answer: B) Entering chainages

Explanation: In a double-line field book, the central strip between the two parallel lines represents the chain line and is used to record chainages/distances along it. Offsets and details are entered on the appropriate sides.

Q61. In differential levelling, the arithmetic check is given by

Correct Answer: A) $\Sigma B.S - \Sigma F.S = \text{Last R.L} - \text{First R.L}$

Explanation: The standard arithmetic check in differential levelling is $\Sigma BS - \Sigma FS = \text{Last RL} - \text{First RL}$. It confirms that the rise/fall or height-of-instrument computations are internally consistent.

Q62. Which of the following is considered the most accurate method of interpolation of contours?

Correct Answer: C) Arithmetical method

Explanation: Among the usual interpolation methods, the arithmetical method gives the most systematic and accurate location of contour points when slopes between measured points are assumed uniform. Estimation is quickest but least precise; graphical interpolation is intermediate.

Q63. The degree of precision in calculating irregularly shaped areas using Simpson's rule and the Trapezoidal rule can be increased by

Correct Answer: D) Increasing the number of ordinates

Explanation: Using more ordinates reduces the spacing between measurements and follows the irregular boundary more closely. Therefore increasing the number of ordinates improves the precision of both trapezoidal and Simpson's-rule area calculations.

Q64. Rankine's method of deflection angle is particularly useful for setting out

Correct Answer: B) A circular curve of long length and large radius

Explanation: Rankine's tangential/deflection-angle method is especially convenient for setting out long circular curves of large radius using a theodolite and measured chords. Successive deflection angles are accumulated from the tangent point.

Q65. GPS measurements are referenced to which geodetic system?

Correct Answer: C) WGS84

Explanation: Modern GPS coordinates are referenced to the World Geodetic System 1984 (WGS 84). It provides the global geocentric reference frame used by GPS.

Q66. The resection method in plane table surveying is used to

Correct Answer: B) Determine the position of station by sighting known points

Explanation: Resection fixes the unknown position of the plane-table station by sighting to points whose plotted positions are already known. It is the reverse concept of radiation, which locates unknown points from a known station.

Q67. In a Total Station, measurement of distance is accomplished by

Correct Answer: B) Modulated microwave or infrared carrier signal

Explanation: A total station contains an electronic distance measurement (EDM) unit. It measures distance using a modulated electromagnetic carrier, commonly infrared or a related signal, and determines range from the returned signal.

Q68. Elimination of parallax in a levelling instrument is achieved by

Correct Answer: C) Focusing both the eyepiece and the objective

Explanation: Parallax disappears only when the crosshairs and the staff image lie in the same focal plane. This requires first focusing the eyepiece for sharp crosshairs and then focusing the objective for a sharp target image.

Q69. Which of the following statements is/are correct?

Correct Answer: A) Only i and ii

Explanation: Crop period is the time from sowing to harvesting and therefore the period for which the crop remains in the field, making i and ii correct. Statement iii describes the base period (first irrigation to last irrigation), not crop period; statement iv is not the defining criterion being tested here.

Q70. Capillary water in soil refers to

Correct Answer: B) Water present in excess of hygroscopic water, held in soil pores by molecular attraction

Explanation: Capillary water is held in the small soil pores by surface tension/molecular attraction above the hygroscopic-water condition. It is generally the main form of soil water available to plant roots, unlike gravitational water which drains freely.

Q71. The volume of water that is temporarily stored in the permeable bank of a reservoir when the reservoir fills and drains out as the water level in the reservoir is lowered is known as

Correct Answer: D) Bank storage

Explanation: Bank storage is water temporarily absorbed into permeable reservoir banks as the reservoir level rises and later released as the level falls. It is distinct from dead, surcharge or valley storage.

Q72. Groynes (spurs) are primarily constructed to

Correct Answer: B) Protect banks from erosion

Explanation: Groynes or spurs project from a river bank into the flow to train/deflect the current and protect the bank from erosion. Their design may also influence sediment deposition near the bank.

Q73. Two vertical poles are standing on a same horizontal line at a distance apart. One is 36 m height and other is 62 m, in height. If the smaller pole make a shadow of length 20.5 m. What will be the length of shadow of larger pole?

Correct Answer: C) 35.3 m

Explanation: Under the same sun angle, pole height and shadow length are proportional. Shadow of larger pole = $20.5 \times (62/36) = 35.31$ m, approximately 35.3 m.

Q74. Which is more elastic?

Correct Answer: D) Steel

Explanation: In physics, greater elasticity means a larger elastic modulus—less strain for a given stress—rather than greater stretchability. Steel has a much higher Young's modulus than rubber, so steel is considered more elastic.

Q75. Find the perimeter of sector of circle with radius 7 cm and sector angle 120° .

Correct Answer: B) 28.67 cm

Explanation: Perimeter of a sector = $2r + \text{arc length}$. Arc length = $(120/360) \times 2\pi \times 7 = 14\pi/3 \approx 14.66$ cm; adding 14 cm gives about 28.66 cm, i.e. 28.67 cm.

Q76. If efficiency of a lifting machine is kept constant, its velocity ratio is directly proportional to its

Correct Answer: B) Mechanical advantage

Explanation: For a lifting machine, efficiency $\eta = \text{Mechanical Advantage (MA)} / \text{Velocity Ratio (VR)}$. If efficiency is constant, $VR = MA/\eta$, so velocity ratio is directly proportional to mechanical advantage.

Q77. The temperature of a substance is 28°C . What is the temperature of same substance in Kelvin scale?

Correct Answer: C) 301 K

Explanation: Kelvin temperature is obtained by adding about 273 to Celsius temperature. $28 + 273 = 301$ K.

Q78. A body of mass 2 kg is thrown upward with an initial velocity of 20 m/s. After 2 seconds its kinetic energy will be (take $g = 10 \text{ m/s}^2$)

Correct Answer: A) 0 J

Explanation: Velocity after 2 s is $v = u - gt = 20 - 10 \times 2 = 0$ m/s. Kinetic energy = $\frac{1}{2}mv^2 = 0$, so the body is momentarily at the highest point.

Q79. Which command is used to customize your shortcut keys in Auto CAD?

Correct Answer: C) CUI

Explanation: CUI stands for Customize User Interface in AutoCAD. The CUI command opens the interface used to customize commands, shortcuts, toolbars, ribbon elements and related user-interface settings.

Q80. Which of the following is a way to add a viewport to a layout in Auto CAD?

Correct Answer: A) Using MVIEW command

Explanation: MVIEW creates and controls layout viewports in paper space. It is the standard command for placing one or more viewports through which model-space geometry is displayed on a layout.

Q81. In which tool bar we can find erase, trim in Auto CAD?

Correct Answer: D) Modify tool bar

Explanation: Erase and Trim are editing operations and are found in the Modify toolbar/panel. The Draw area is the workspace, while the title and standard toolbars do not contain these principal modification commands.

Q82. Which short key is used to close the currently active program in Auto CAD?

Correct Answer: B) Alt + F4

Explanation: Alt + F4 is the standard Windows shortcut to close the currently active application window, including AutoCAD. Ctrl + X performs Cut rather than closing the program.

Q83. Which of the following 'Function Key' can be used for 'Toggles between grid on and off'?

Correct Answer: C) F7

Explanation: F7 toggles the grid display on and off in AutoCAD. Other common keys include F8 for Ortho mode and F10 for Polar Tracking.

Q84. Function defined for 'Ctrl + Y' key stroke is

Correct Answer: D) Redo

Explanation: Ctrl + Y performs Redo, reversing the effect of an Undo when possible. Ctrl + Z is the usual Undo shortcut.

Q85. What is the full form of UCS system?

Correct Answer: B) User Co-ordinate System

Explanation: UCS means User Coordinate System. It is the movable coordinate framework that defines the X, Y and Z directions and origin used for drawing and modelling operations.

Q86. What is the primary purpose of using layers in 2D drafting?

Correct Answer: A) To organise and manage complex drawing

Explanation: Layers organize drawing objects by function and let the user control visibility, colour, linetype, lineweight, plotting and editing behavior. They are essential for managing complex 2D drawings.

Q87. The presence of inorganic substances like clay, pebbles, sand, silt etc. are

Correct Answer: C) Physical impurities

Explanation: Clay, sand, silt and pebbles are particulate/suspended matter and are therefore classed as physical impurities in water. Chemical and bacteriological impurities involve dissolved substances and microorganisms respectively.

Q88. The liquid which passes out of the outlet pipe of septic tank is

Correct Answer: A) Effluents

Explanation: The comparatively clarified liquid leaving a septic tank through its outlet is called effluent. Sludge is the settled solid/semi-solid material accumulated at the bottom of the tank.

Q89. It includes all type of house waste and garbage in dry form

Correct Answer: D) Refuse

Explanation: Refuse is the general term for solid household waste, including dry rubbish and garbage. Effluent is liquid waste and sludge is settled semi-solid material.

Q90. It is safe water, which is bacteriologically and chemically pure

Correct Answer: C) Wholesome water

Explanation: Wholesome water is water considered safe for human use because it is free from disease-causing organisms and harmful chemical contamination and is acceptable for consumption. In many texts it is also treated as potable water; the wording of this question corresponds to 'wholesome water'.

Q91. This types of joint is mostly used for joining concrete and asbestos pipes of large diameter

Correct Answer: A) Collar joint

Explanation: Collar joints are widely used for joining large-diameter concrete and asbestos-cement pipes. A collar or sleeve fits over adjacent pipe ends and the annular space is sealed with the specified jointing material.

Q92. They are automatic valves, they allow the flow in one direction only

Correct Answer: B) Reflux valve

Explanation: A reflux valve is a non-return/check valve. It opens for flow in the intended direction and closes automatically when flow reverses, preventing backflow.

Q93. The art of providing an outward slope of 1 in 20 to the treads of wheels of rolling stock, is

Correct Answer: C) Coning of wheels

Explanation: Coning of wheels gives the wheel tread an outward slope, commonly about 1 in 20. This helps railway wheelsets negotiate curves and maintain more stable running on the rails.

Q94. The plates which are used to rail joints to maintain the continuity of rails in a track

Correct Answer: A) Fish plates

Explanation: Fish plates are steel plates bolted to the sides of adjacent rail ends. They connect the rails at a joint and help maintain alignment and continuity of the track.

Q95. The end supports of a bridge superstructure is

Correct Answer: B) Abutment

Explanation: An abutment is the end support of a bridge superstructure and also retains the approach embankment. Piers are intermediate supports located between the abutments.

Q96. The heading up of water above its normal level while passing under the bridge is

Correct Answer: C) Afflux

Explanation: Afflux is the rise or heading-up of water level on the upstream side of a bridge or obstruction compared with the normal water level. It results from contraction and resistance to flow at the crossing.

Q97. The curve having its radius varying gradually from an infinite to a finite value equal to that of the circular curve to be connected or vice versa is

Correct Answer: D) All of these

Explanation: A transition curve has radius changing gradually from infinity at the tangent to the finite radius of the circular curve. Such curves are also commonly called spiral or easement curves; the paper's 'casement' wording is evidently intended as that textbook synonym, so 'All of these' is the intended answer.

Q98. The gradient on which a motor vehicle moving with a constant speed, continues to descend with the same speed without any application of power or breaks is

Correct Answer: B) Floating gradient

Explanation: A floating gradient is the descending gradient on which a vehicle can continue at constant speed without engine power and without braking because the component of gravity balances the running resistance.

Q99. The main highways running through the length breadth of the country connecting major ports, foreign highways and capital of states, etc. are known as

Correct Answer: A) National highway

Explanation: National Highways form the principal long-distance road network connecting major cities, state capitals, ports, borders and important national routes. They carry inter-state and strategic traffic.

Q100. The road pavement which can change their shape to some extent without rupture are known as

Correct Answer: B) Flexible pavements

Explanation: Flexible pavements can undergo small elastic or plastic deflections under wheel loads without cracking as a rigid slab would. Load is transferred through successive granular/bituminous layers rather than by slab action.