

QID: 1 - Which of the following quality of timber can be improved using Abel's process?

Options:

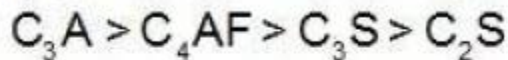
- 1) Durability
- 2) Fire resistance
- 3) Chemical resistance
- 4) Strength

Correct Answer: Fire resistance

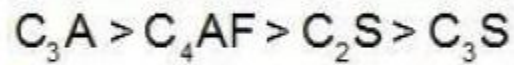
QID: 2 - Which of the following shows the **CORRECT** decreasing order of rate of hydration of Portland cement compounds?

Options:

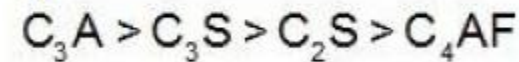
1)



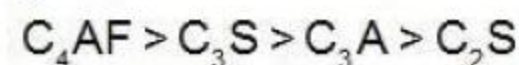
2)



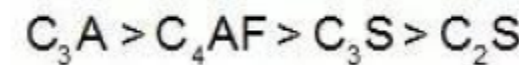
3)



4)



Correct Answer:



QID: 3 - The proportions of ingredients in concrete mix are given by 1:2:4. What will be the actual quantity of the sand per unit volume of cement, if it undergoes 20% of bulking?

Options:

- 1) 1.5
- 2) 2.4
- 3) 4.6
- 4) 6.5

Correct Answer: 2.4

QID: 5 - In the symbol used to represent the concrete mix, MX. M stands for mix and numeric X represents the_____.

Options:

- 1) 7 days compressive strength
- 2) 14 days compressive strength
- 3) 28 days compressive strength
- 4) 28 days tensile strength

Correct Answer: 28 days compressive strength

QID: 6 - According to the IS code, at what moisture content, weight of the timber is noted?

Options:

- 1) 0.05
- 2) 0.12
- 3) 0.23

4) 0.3

Correct Answer: 0.12

QID: 7 - What is the recommended moisture content of timber, which is used as a structural element for windows?

Options:

- 1) 5-10%
- 2) 10-16%
- 3) 16-26%
- 4) 26-36%

Correct Answer: 10-16%

QID: 8 - Which of the following represents the smallest size (mm) of fine aggregate (sand)?

Options:

- 1) 0.01
- 2) 0.06
- 3) 1.5
- 4) 2

Correct Answer: 0.06

QID: 9 - What is the percentage content of silica in a good quality brick earth?

Options:

- 1) 20-30%
- 2) 30-40%
- 3) 40-50%
- 4) 50-60%

Correct Answer: 50-60%

QID: 10 - When timber is burnt in the wood fire over a depth of about 15 mm, the process of treatment is known as_____.

Options:

- 1) charring
- 2) rueping process
- 3) bethel process
- 4) boucherie process

Correct Answer: charring

QID: 11 - The plasticity index and plastic limit of a soil is given by 25% and 20% respectively. What will be the liquid limit of the soil?

Options:

- 1) 0.15
- 2) 0.25
- 3) 0.35
- 4) 0.45

Correct Answer: 0.45

QID: 12 - In the flow over length of 50 m, the head loss of 6 m occurred due to seepage. The hydraulic gradient is given by_____.

Options:

- 1) 0.01
- 2) 0.12
- 3) 0.29
- 4) 0.32

Correct Answer: 0.12

QID: 13 - Which of the following expression represents the **CORRECT** value of coefficient of curvature?

Options:

1)

$$C_c = \frac{(D_{30})^2}{D_{60} \times D_{10}}$$

2)

$$C_c = \frac{(D_{60})^2}{D_{30} \times D_{10}}$$

3)

$$C_c = \frac{(D_{10})^2}{D_{60} \times D_{30}}$$

4)

$$C_c = \frac{D_{30}}{D_{60} \times D_{10}}$$

Correct Answer:

$$C_c = \frac{(D_{30})^2}{D_{60} \times D_{10}}$$

QID: 14 - Which of the following apparatus is used to measure the liquid limit soil?

Options:

1) Casagrande apparatus

2) Pycnometer

3) Ring and ball apparatus

4) None of these

Correct Answer: Casagrande apparatus

QID: 15 –

The compressibility of the fluid is given as $5 \times 10^{-11} \text{ Pa}^{-1}$.

What is the Bulk modulus (GPa) of fluid?

Options:

1) 10

2) 15

3) 20

4) 25

Correct Answer: 20

QID: 16 - Which of the following is measured with the help of an orifice meter?

Options:

1) Discharge

2) Discharge coefficient

3) Head of water

4) Pressure coefficient

Correct Answer: Discharge

QID: 17 - Which of the following represents the **CORRECT** range of coefficient of discharge of venturimeter?

Options:

1) 0.32 to 0.43

2) 0.45 to 0.52

3) 0.54 to 0.75

4) 0.96 to 0.98

Correct Answer: 0.96 to 0.98

QID: 18 –

A cube of dimension 2 m is floating in the water with immersing depth of 1 m. What is the weight (kN) of the cube? (Consider unit weight of water as 10 kN/m^3)

Options:

1) 10

2) 20

3) 30

4) 40

Correct Answer: 40

QID: 19 –

The Reynold number for the flow through smooth pipe is given by 10^5 . The value of friction factor for smooth pipe is _____.

Options:

1) 0.001

2) 0.018

3) 0.089

4) 0.125

Correct Answer: 0.018

QID: 20 - At a particular point in the channel, the specific energy and velocity of flow is given by 1.5 m and 2.5 m/s respectively. What is the depth of flow in channel at that point?

Options:

1) 0.5

2) 1.18

3) 2.32

4) 2.5

Correct Answer: 1.18

QID: 21 –

A circular pipe of diameter 60 cm carries a discharge of $2.5 \text{ m}^3/\text{s}$. What is the velocity of flow (m/s) through the pipe?

Options:

1) 2.5

2) 5.67

3) 8.83

4) 12.32

Correct Answer: 8.83

QID: 22 - Which of the following represents the **CORRECT** relationship between the Chezy's coefficient, C and coefficient of roughness of channel, f?

Options:

1)

$$C \propto \frac{1}{\sqrt{f}}$$

2)

$$C \propto \sqrt{f}$$

3)

$$C \propto \frac{1}{f^{3/2}}$$

4)

$$C \propto \frac{1}{f}$$

Correct Answer:

$$C \propto \frac{1}{\sqrt{f}}$$

QID: 23 - Which of the following is calculated with the help of Moody equation?

Options:

- 1) Discharge
- 2) Friction factor
- 3) Pressure
- 4) Velocity of flow

Correct Answer: Friction factor

QID: 24 - Which of the following is responsible for the separation of boundary layer?

Options:

- 1) Positive pressure gradient
- 2) High viscosity of fluid
- 3) Low viscosity of fluid
- 4) None of these

Correct Answer: Positive pressure gradient

QID: 25 –

The settling tank of surface overflow rate of $4.5 \times 10^{-4} \text{ m}^3/\text{m}^2/\text{s}$ is used for design discharge of $2 \text{ m}^3/\text{s}$. What is the surface area (m^2) of the settling tank?

Options:

- 1) 1000
- 2) 2000
- 3) 3000
- 4) 4000

Correct Answer: 4000

QID: 26 - The rain is called as acid rain, when its pH is less than_____.

Options:

- 1) 3
- 2) 4 .5
- 3) 7
- 4) 8 .5

Correct Answer: 4.5

QID: 27 - Using prismoidal method, what is the volume (cubic metre) of earthwork required for 10 m deep pit, if the top and bottom dimensions are 4 m x 8 m and 8m x 16 m respectively?

Options:

- 1) 678.34
- 2) 746.67
- 3) 800
- 4) 149 3.33

Correct Answer: 746.67

QID: 28 - For supply, lime is measured in _____.

Options:

- 1) bags of 50 kg
- 2) cubic metre
- 3) kilograms
- 4) quintals

Correct Answer: quintals

QID: 29 - What is the estimate (Rs.) for a building with a plinth area of 2000 sq. m with rate of Rs. 3800 per sq. m? (Consider the adds of 15% of electric installation and 7% of miscellaneous)

Options:

- 1) 150000
- 2) 450080
- 3) 2423000
- 4) 9272000

Correct Answer: 9272000

QID: 30 - What is the quantity (sq. m) of plastering required for the 6 m length of wall which is 4 m high and 50 cm thick?

Options:

- 1) 12
- 2) 24
- 3) 48
- 4) 56

Correct Answer: 48

QID: 31 - The length, width and height of a wall are given as 800 cm, 500 cm and 50 cm respectively. What will be the total cost (Rs.) of brickwork, if the rate of brickwork is Rs. 320 per cubic metre?

Options:

- 1) 4000
- 2) 6400
- 3) 10500
- 4) 12860

Correct Answer: 6400

QID: 32 - The plinth area rate and plinth area of a building is Rs 5500 per sq.m and 150 sq.m respectively. What is the total cost (Rs.) of building considering cost of electrification as 7%, cost of sanitary fittings as 16%, cost of roads and lawns as 6.5% and cost of contingencies as 4.5%.

Options:

- 1) 50000
- 2) 825000
- 3) 982860
- 4) 1105500

Correct Answer: 1105500

QID: 33 - Which of the following item is NOT a lump sum item?

Options:

- 1) Architectural features
- 2) Contingencies and unforeseen items
- 3) Electric installation
- 4) Plastering of wall

Correct Answer: Plastering of wall

QID: 34 - What is the total cost (Rs.) according to approximate estimate of hostel building with capacity of 75 beds? The altogether cost per bed is given as Rs. 20,000.

Options:

- 1) 500000
- 2) 850000
- 3) 1500000
- 4) 5500000

Correct Answer: 1500000

QID: 35 - What is the volume of earthwork (cubic metre) in embankment of 10 m long and 7m wide with the side slope of 2:1?

Options:

- 1) 70
- 2) 150
- 3) 280
- 4) 390

Correct Answer: 390

QID: 36 - Which of the following method is used to prepare the approximate estimate?

Options:

- 1) Cubical contents method
- 2) Plinth area method
- 3) Unit base method
- 4) All option are correct

Correct Answer: All option are correct

QID: 37 - In which of the following condition two contour lines intersect each other?

Options:

- 1) Hills
- 2) Overhanging cliff
- 3) Steep slope
- 4) Uniform slope

Correct Answer: Overhanging cliff

QID: 38 - Which of the following scale of the map is not affected due to shrinking of map?

Options:

- 1) Engineer's scale
- 2) Graphical scale
- 3) Representative fraction
- 4) None of these

Correct Answer: Graphical scale

QID: 39 - A surveyor measures a distance between two points on a map of representative fraction of 1:100 is 60 m. But later he found that he used wrong representative fraction of 1:50. What is the correct distance between the two points?

Options:

- 1) 30
- 2) 45
- 3) 90
- 4) 120

Correct Answer: 120

QID: 40 - Which one of the following is the CORRECT statement for a station that is affected by local attraction?

Options:

- 1) Difference between the fore bearing and back bearing is always equal to 90 Degrees.
- 2) Difference between the fore bearing and back bearing is always equal to 180 Degrees.
- 3) Difference between the fore bearing and back bearing is not equal to 180 Degrees.
- 4) Difference between the fore bearing and back bearing is always equal to 360 Degrees.

Correct Answer: Difference between the fore bearing and back bearing is not equal to 180 Degrees.

QID: 41 - Which of the following error is most likely to occur in the plane table surveying?

Options:

- 1) Error in sighting
- 2) Error in orientation
- 3) Error in leveling
- 4) Error in measurement

Correct Answer: Error in orientation

QID: 42 - Which of the following is the expression for the additive constant, if f is the focal length of objective and i is the stadia interval?

Options:

- 1) $f - i$
- 2) f / i
- 3) $f + d$
- 4) $f \times i$

Correct Answer: $f + d$

QID: 44 - Which of the following is the **CORRECT** ratio of refraction correction to curvature correction?

Options:

- 1) 1/4
- 2) 1/6
- 3) 1/7
- 4) 1/9

Correct Answer: 1/7

QID: 45 - Which of the following instrument is used for centering the theodolite in windy conditions?

Options:

- 1) Cross staff
- 2) Optical plummet
- 3) Optical square
- 4) Spirit level

Correct Answer: Optical plummet

QID: 46 - Which of the following test is used to make the line of sight perpendicular to the horizontal axis?

Options:

- 1) Azimuth test
- 2) Cross hair ring test
- 3) Spire test
- 4) Vertical arc test

Correct Answer: Azimuth test

QID: 47 - Which of the following statement is **TRUE** for the linear reservoir?

Options:

- 1) Storage is proportional to inflow discharge.
- 2) Storage is proportional to out flow discharge.
- 3) Storage is proportional to square of inflow discharge.
- 4) Storage is proportional to square of outflow discharge.

Correct Answer: Storage is proportional to outflow discharge.

QID: 48 - A 45 cm diameter well penetrates an unconfined aquifer of 30 m thick. Under the steady pumping rate for a long time, the drawdown's at two observation wells 10 m and 20 m from the pumping well are 5 m and 3.5 m respectively. What will be the discharge (cubic meter), if the permeability of the aquifer is given as 20 m/day?

Options:

- 1) 0.05
- 2) 0.067
- 3) 0.08
- 4) 1.12

Correct Answer: 0.08

QID: 49 - What will be the can't deficiency (cm), if maximum safe speed on a 5 Degree curve of a broad gauge track is 110 km/h and average speed of train is 85 km/h?

Options:

- 1) 6.3
- 2) 10
- 3) 12 .6
- 4) 18.7

Correct Answer: 10

QID: 50 - What will be the shift of transition curve, if the length of transition curve is 80 m and radius of the curve is 300 m?

Options:

- 1) 0.011
- 2) 0.78
- 3) 0.89
- 4) 21.3 3

Correct Answer: 0.89

QID: 51 - Design of a riveted joint, is based on the assumption

Options:

- 1) Load is uniformly distributed among all the rivets
- 2) Shear stress on a rivet is uniformly distributed over its gross area
- 3) Bearing stress is uniform between the contact surfaces of the plate and the rivet
- 4) All option are correct

Correct Answer: All option are correct

QID: 52 - Effective length of a column effectively held in position and restrained in directions at both ends is

Options:

- 1) L
- 2) 0.67 L
- 3) 0.85 L
- 4) 1.5 L

Correct Answer: 0.67 L

QID: 53 - The slenderness ratio of a column is zero when its length

Options:

- 1) is zero
- 2) is equal to its radius of gyration
- 3) is supported on all sides throughout its length
- 4) None of these

Correct Answer: is supported on all sides throughout its length

QID: 54 - Outstanding length of a compression member consisting of a channel is measured as

Options:

- 1) Half of the nominal width
- 2) Nominal width of the section
- 3) From the edge to the first row of rivets
- 4) None of these

Correct Answer: nominal width of the section

QID: 55 - The equivalent axial load may be defined as the load which produces a stress equal to

Options:

- 1) maximum stress produced by the eccentric load
- 2) maximum stressed fiber
- 3) bending stress
- 4) None of these

Correct Answer: maximum stress produced by the eccentric load

QID: 56 - For the economical design of a combined footing to support two equal column loads the projections of beams in lower tier are kept such that bending moment under column is equal to

Options:

- 1) Bending moment at the center of the beam
- 2) Half the bending moment at the center of the beam
- 3) Twice the bending moment at the center of the beam
- 4) None of these

Correct Answer: Bending moment at the center of the beam

QID: 57 - A beam is defined as a structural member subjected to

Options:

- 1) axial loading
- 2) axial and transverse loading
- 3) transverse loading
- 4) None of these

Correct Answer: transverse loading

QID: 58 - The gross section of the web of a beam is defined as

Options:

- 1) depth of the beam multiplied by its web thickness
- 2) width of the flange multiplied by its web thickness
- 3) sum of the flange width and depth of the beam multiplied by the web thickness
- 4) None of these

Correct Answer: depth of the beam multiplied by its web thickness

QID: 59 - The effective length L of a simply supported beam with ends restrained against torsion, and also the ends of compression flange partially restrained against lateral bending is given by

Options:

- 1) $L = \text{span}$
- 2) $L = 0.85 \text{ span}$
- 3) $L = 0.75 \text{ span}$
- 4) $L = 0.7 \text{ span}$

Correct Answer: $L = 0.85 \text{ span}$

QID: 60 - The connection of one beam to another beam by means of an angle at the bottom and an angle at the top, is known as

Options:

- 1) unstiffened seated connection
- 2) stiffened seated connection
- 3) seated connection
- 4) None of these

Correct Answer: seated connection

QID: 61 - Separation of water or water sand cement from a freshly mixed concrete is known

Options:

- 1) Bleeding
- 2) Creeping
- 3) Segregation
- 4) Flooding

Correct Answer: bleeding

QID: 62 - For road pavements, the cement generally used is

Options:

- 1) ordinary Portland cement
- 2) rapid hardening cement
- 3) low heat cement
- 4) blast furnace slag cement

Correct Answer: rapid hardening cement

QID: 63 - Hydration of cement is due to chemical action of water with

Options:

- 1) Tricalcium silicate and dicalcium silicate
- 2) Dicalcium silicate and tricalcium aluminate
- 3) Tricalcium aluminate and tricalcium alumino ferrite
- 4) All option are correct

Correct Answer: All option are correct

QID: 64 - Internal friction between the ingredients of concrete, is decreased by using

Options:

- 1) less water
- 2) fine aggregates
- 3) rich mix
- 4) more water and coarse aggregates

Correct Answer: more water and coarse aggregates

QID: 65 - In a slump test, each layer of concrete is compacted by a steel rod 60 cm long and of 16 mm diameter for

Options:

- 1) 20 times
- 2) 25 times
- 3) 30 times
- 4) 40 times

Correct Answer: 25 times

QID: 66 - To prevent segregation, the maximum height of placing concrete is

Options:

- 1) 100 cm
- 2) 125 cm
- 3) 150 cm
- 4) 200 cm

Correct Answer: 100 cm

QID: 67 - The shuttering of a hall measuring 4 m x 5 m, can be removed after

Options:

- 1) 5 days
- 2) 7 days
- 3) 10 days
- 4) 14 days

Correct Answer: 7 days

QID: 68 - For compacting plain concrete road surface of thickness less than 20 cm, we use

Options:

- 1) internal vibrator
- 2) screed vibrator
- 3) form vibrator
- 4) None of these

Correct Answer: screed vibrator

QID: 69 - Pick up the correct statement from the following

Options:

- 1) Construction joints in columns are provided a few cm below the junction of beam
- 2) Construction joints in columns are provided at the bottom haunching
- 3) Construction joint in beams and slabs are provided within middle third
- 4) All option are correct

Correct Answer: All option are correct

QID: 70 - An excess of flaky particles in concrete aggregates

Options:

- 1) decreases the workability
- 2) increases the quantity of water and sand
- 3) affects the durability of concrete
- 4) All option are correct

Correct Answer: All option are correct

QID: 71 - For the construction of cement concrete dams, the maximum permissible size of the aggregates is

Options:

- 1) 40 mm
- 2) 50 mm
- 3) 60 mm
- 4) 70 mm

Correct Answer: 40 mm

QID: 72 - For given workability the grade requiring the least amount of water is one that gives

Options:

- 1) greatest surface area for the given cement and aggregates

2) least surface area for the given cement and aggregates

3) least weight for the given cement and aggregates

4) None of these

Correct Answer: greatest surface area for the given cement and aggregates

QID: 73 - The type of aggregates of same nominal size, which contains less voids when compacted are

Options:

- 1) rounded spherical
- 2) irregular
- 3) flaky
- 4) None of these

4) None of these

Correct Answer: rounded spherical

QID: 74 - For quality control of Portland cement the test essentially done is

Options:

- 1) setting time
- 2) soundness
- 3) tensile strength
- 4) All option are correct

Correct Answer: All option are correct

QID: 75 - Pick up the correct statement from the following

Options:

- 1) The percentage of voids in the aggregate after proper compaction is called the angularity number
- 2) Angular aggregate are superior to rounded aggregate
- 3) The surface texture depends upon the hardness, grain size, free structure and the structure of the rock
- 4) All option are correct

Correct Answer: All option are correct

QID: 76 - No shrinkage occurs if the concrete is placed in a relative humidity of

Options:

- 1) 1
- 2) 0.85
- 3) 0.7
- 4) 0.5

Correct Answer: 1

QID: 77 - Argillaceous materials are those:

Options:

- 1) which have alumina as the main constituent
- 2) which have lime as the main constituent
- 3) which evolve heat on the addition of water
- 4) which easily break when hammered lightly

Correct Answer: which have alumina as the main constituent

QID: 78 - Spot the odd statement:

Options:

- 1) rounded aggregate
- 2) irregular or partly rounded aggregate
- 3) angular flaky aggregate
- 4) single-size aggregate

Correct Answer: single-size aggregate

QID: 79 - If d and n are the effective depth and depth of the neutral axis respectively of a singly reinforced beam, the lever arm of the beam, is

Options:

- 1) d
- 2) n
- 3) $d + n/3$
- 4) $d - n/3$

Correct Answer: $d - n/3$

QID: 80 - Pick up the incorrect statement from the following. The intensity of horizontal shear stress at the elemental part of a beam section, is directly proportional to

Options:

- 1) shear force
- 2) area of the section
- 3) distance of the C.G. of the area from its neutral axis
- 4) moment of the beam section about its neutral axis

Correct Answer: moment of the beam section about its neutral axis

QID: 81 - If the average bending stress is 6 kg/cm^2 for M 150 grade concrete, the length of embedment of a bar of diameter d according to I.S. 456 specifications is

Options:

- 1) $28d$
- 2) $38d$
- 3) $48d$
- 4) $58d$

Correct Answer: $58d$

QID: 82 - A singly reinforced concrete beam of 25 cm width and 70 cm effective depth is provided with 18.75 cm^2 steel. If the modular ratio (m) is 15 , the depth of the neutral axis, is

Options:

- 1) 20 cm
- 2) 25 cm
- 3) 30 cm
- 4) 35 cm

Correct Answer: 30 cm

QID: 83 - If the neutral axis of a T-beam is below the slab, the relationship between the flange width B , depth of neutral axis n , thickness of the slab d_s , effective depth of the beam d , gross area of tensile steel A_t and the modular ratio m may be stated as

Options:

- 1) $Bd_s (n - d_s/2) = mA_t(d+n)$
- 2) $Bd_s (n + d_s/2) = mA_t(d - n)$
- 3) $Bd_s (n - d_s/2) = mA_t(d - n)$
- 4) None of these

Correct Answer: $Bd_s (n - d_s/2) = mA_t(d - n)$

QID: 84 - In a simply supported slab, alternate bars are curtailed at

Options:

- 1) $1/4$ th of the span
- 2) $1/5$ th of the span
- 3) $1/6$ th of the span
- 4) $1/7$ th of the span

Correct Answer: $1/7$ th of the span

QID: 85 - In a slab, the pitch of the main reinforcement should not exceed its effective depth

Options:

- 1) three times
- 2) four times
- 3) five times
- 4) two times

Correct Answer: three times

QID: 86 - In a combined footing if shear stress exceeds 5 kg/cm^2 , the nominal stirrups provided are

Options:

- 1) 6 legged
- 2) 8 legged
- 3) 10 legged
- 4) 12 legged

Correct Answer: 12 legged

QID: 87 - To ensure that the hogging bending moment at two points of suspension of a pile of length L equals the sagging moment at its center, the distance of the points of suspension from either end is

Options:

- 1) $0.107L$
- 2) $0.207L$
- 3) $0.307L$
- 4) $0.407L$

Correct Answer: $0.207L$

QID: 88 - To have pressure wholly compressive under the base of a retaining wall if width b , the resultant of the weight of the wall and the pressure exerted by the retained, earth should have eccentricity not more than

Options:

- 1) $b/3$
- 2) $b/4$
- 3) $b/5$
- 4) $b/6$

Correct Answer: $b/6$

QID: 89 - The ratio of the length and diameter of a simply supported uniform

circular beam which experiences maximum bending stress equal to tensile stress due to same load at its mid span is

Options:

- 1) 1/8
- 2) 1/4
- 3) 1/2
- 4) 1/3

Correct Answer: 1/2

QID: 90 - The ratio of the deflections of the free end of a cantilever due to an isolated load at 1/3rd and 2/3rd of the span is

Options:

- 1) 1/7
- 2) 2/7
- 3) 3/7
- 4) 2/5

Correct Answer: 2/7

QID: 91 - A compound bar consists of two bars of equal length. Steel bar cross-section is 3500 mm^2 and that of brass bar is 3000 mm^2 . These are subjected to a compressive load $100,000 \text{ N}$. If $E_b=0.2 \text{ MN/mm}^2$ and $E_s=0.1 \text{ MN/mm}^2$, the stresses developed are

Options:

- 1) $\sigma_b=10 \text{ N/mm}^2, \sigma_s=20 \text{ N/mm}^2$
- 2) $\sigma_b=8 \text{ N/mm}^2, \sigma_s=16 \text{ N/mm}^2$
- 3) $\sigma_b=6 \text{ N/mm}^2, \sigma_s=12 \text{ N/mm}^2$
- 4) $\sigma_b=5 \text{ N/mm}^2, \sigma_s=10 \text{ N/mm}^2$

Correct Answer: $\sigma_b=10 \text{ N/mm}^2, \sigma_s=20 \text{ N/mm}^2$

QID: 92 - The radius of gyration of rectangular section (depth D, width B) from a centroidal axis parallel to the width is

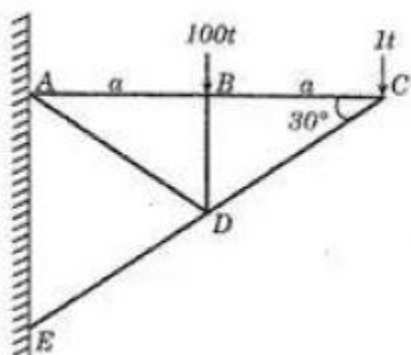
Options:

- 1) D/2
- 2) $D/\sqrt{3}$
- 3) $D/(2\sqrt{3})$
- 4) $D/(4\sqrt{3})$

Correct Answer: $D/(2\sqrt{3})$

QID: 93 –

For determining the force in AB of the truss shown in the figure below by method of sections, the section is made to pass through AB, AD and ED and the moments are taken about



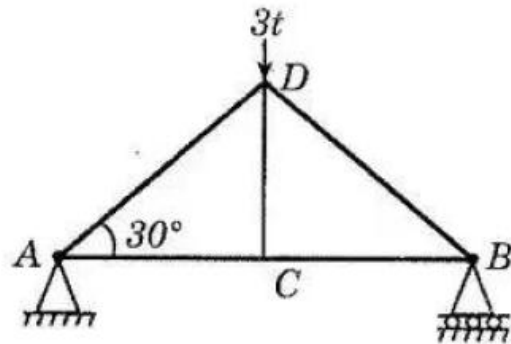
Options:

- 1) joint C
- 2) joint B
- 3) joint D
- 4) joint A

Correct Answer: joint D

QID: 94 –

The force in CD of the truss shown in the figure



Options:

- 1) 3t compression
- 2) 3t tension
- 3) zero
- 4) 1.5t compression

Correct Answer: zero

QID: 95 - A shaft rotating N.R.M. under a torque T, transmits a power of

Options:

- 1) $T\pi N/30$ Newton meters/sec
- 2) $T\pi N/30$ Newton meters/min
- 3) $T\pi N/60$ Newton meters/min
- 4) $T\pi N/60$ Newton meters/sec

Correct Answer: $T\pi N/30$ Newton meters/sec

QID: 96 - The greatest load which a spring can carry without getting permanently distorted is called

Options:

- 1) stiffness
- 2) proof resilience
- 3) proof stress
- 4) proof load

Correct Answer: proof load

QID: 97 - In case of a simply supported I – section beam of span L and loaded with a central load W, the length of elasto-plastic zone of the plastic hinge is

Options:

- 1) L/2
- 2) L/3
- 3) L/4
- 4) L/5

Correct Answer: L/5

QID: 98 - The horizontal thrust on the ends of a two-hinged semicircular arch of radius R carrying

Options:

- 1) A uniformly distributed load w per unit run over its right half span is $(2/3) * (wR/\pi)$
- 2) A uniformly distributed load w per unit run over its entire span is $(4/3) * (wR/\pi)$
- 3) A distributed load varying from zero at the left end to w per unit horizontal run at the right end, is $(2/3) * (wR/\pi)$
- 4) All option are correct

Correct Answer: All option are correct

QID: 99 - If a three-hinged parabolic arch, (span l, rise h) is carrying a uniformly distributed load w/unit length over the entire span,

Options:

- 1) Horizontal thrust is $(wl^2)/8h$
- 2) Shear Force will be zero throughout
- 3) Bending Moment will be zero throughout
- 4) All option are correct

Correct Answer: All option are correct

QID: 100 - The equivalent length of a column of length L having both the end fixed is

Options:

- 1) 2L
- 2) L
- 3) L/2
- 4) $L/\sqrt{2}$

Correct Answer: L/2

