



**(Paper) SSC Junior Engineers (JE) Exam - 2016 "held on 02 March 2017" Afternoon Shift (General Engineering)**

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**QID : 201** - For construction of structures under water, the type of lime used is \_\_\_\_\_.

**Options:**

- 1) hydraulic lime
- 2) fat lime
- 3) quick lime
- 4) pure lime

**Correct Answer:** hydraulic lime

**QID : 202** - The compound of Portland cement which reacts immediately with water and also sets first is \_\_\_\_\_.

**Options:**

- 1) Tri-calcium silicate
- 2) Di-calcium silicate
- 3) Tri-calcium aluminate
- 4) Tetra calcium alumino ferrite

**Correct Answer:** Tri-calcium aluminate

**QID : 203** - Rapid hardening cement attains early strength due to \_\_\_\_\_.

**Options:**

- 1) larger proportion of lime grounded finer than normal cement
- 2) lesser proportion of lime grounded coarser than normal cement
- 3) lesser proportion of lime grounded finer than normal cement
- 4) larger proportion of lime grounded coarser than normal cement

**Correct Answer:** larger proportion of lime grounded finer than normal cement

**QID : 204** - The percentage of water for normal consistency is \_\_\_\_\_.

**Options:**

- 1) 5 % to 15%
- 2) 10% to 25%
- 3) 15% to 25%
- 4) 20% to 30%

**Correct Answer:** 15% to 25%

**QID : 205** - Soundness test of cement determines \_\_\_\_\_.

**Options:**

- 1) quality of free lime
- 2) ultimate strength
- 3) durability
- 4) initial setting

**Correct Answer:** quality of free lime

**QID : 206** - Bulking of sand is caused due to \_\_\_\_\_.

**Options:**

- 1) surface moisture
- 2) air voids
- 3) viscosity
- 4) clay contents

**Correct Answer:** surface moisture

**QID : 207** - For a 50 kg cement bag, water required is \_\_\_\_\_.

**Options:**

- 1) 16.5 liters
- 2) 18.5 liters
- 3) 20.5 liters
- 4) 22.5 liters

**Correct Answer:** 22.5 liters

**QID : 208** - Pick up the correct statement from the following Method of sawing timber \_\_\_\_\_.

**Options:**

- 1) tangentially to annual rings, is known as tangential method
- 2) in four quarters such that each board cuts annual rings at angles not less than  $45^\circ$ , is known as quarter sawing method
- 3) cut out of quarter logs, parallel to the medullary rays and perpendicular to annual rings is known as radial sawing
- 4) All options are correct

**Correct Answer:** All options are correct

**QID : 209** - For the manufacture of plywood, veneers are placed so that grains of adjacent veneers are \_\_\_\_\_.

**Options:**

- 1) at right angles
- 2) parallel
- 3) inclined at  $45^\circ$
- 4) inclined at  $60^\circ$

**Correct Answer:** at right angles

**QID : 210** - The portion of the brick without a triangular corner equal to half the width and half the length is called \_\_\_\_\_.

**Options:**

- 1) closer
- 2) queen closer
- 3) king closer
- 4) squint brick

**Correct Answer:** king closer

**QID : 211** - The height of the sink or wash basin above floor level is kept \_\_\_\_\_.

**Options:**

- 1) 60 cm
- 2) 70 cm
- 3) 75 cm to 80 cm
- 4) 80 cm

**Correct Answer:** 75 cm to 80 cm

**QID : 212** - Pick up the correct statement from the following.

**Options:**

- 1) In order to check up the average depth of excavation, 'Dead mans' are left at the mid-widths of borrow pits
- 2) The earthwork calculation in excavation is made from the difference in levels obtained with a level
- 3) The earthwork done in excavation is to form the road embankment includes the formation of correct profiles and depositing the soil in layers
- 4) All options are correct

**Correct Answer:** All options are correct

**QID : 213** - If the formation level of a highway has a uniform gradient for a particular length and the ground is also having a longitudinal slope, the earthwork may be calculated by \_\_\_\_\_.

**Options:**

- 1) Mid-section formula
- 2) Trapezoidal formula
- 3) Prismoidal formula
- 4) All options are correct

**Correct Answer:** All options are correct

**QID : 214** - The area of a sloping surface of a protective embankment of mean height  $d$ , side slopes  $S:1$  and length  $L$  is \_\_\_\_\_.

**Options:**

- 1)  $d \times d \times s$
- 2)  $\sqrt{[(d^2 \times (ds^2))]}$
- 3)  $L.D \sqrt{(1+s^2)}$
- 4)  $2Ld \sqrt{(1+s^2)}$

**Correct Answer:**  $L.D \sqrt{(1+s^2)}$

**QID : 215** - A cement concrete road is 1000 m long, 8 m wide and 15 cm thick over the sub-base of 10 cm thick gravel. The cubic content of concrete (1:2:4) for the road specified in is \_\_\_\_\_.

**Options:**

- 1) 300 m<sup>3</sup>
- 2) 600 m<sup>3</sup>

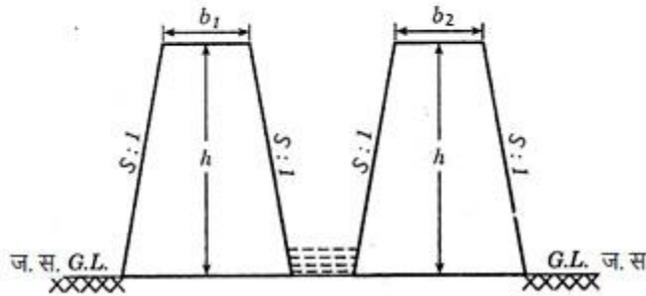
- 3) 900 m<sup>3</sup>
- 4) 1200 m<sup>3</sup>

**Correct Answer:** 1200 m<sup>3</sup>

**QID : 216 -**

The cross-sectional area of the embankment of a canal fully in embankment, (refer the figure given below) is:-

किसी पूर्ण रूप से तटबंधित नहर के बांध का अनुप्रस्थ परिच्छेद क्षेत्रफल \_\_\_\_\_ होगा।  
(नीचे दी गई आकृति का संदर्भ लें।)



**Options:**

- 1)  $\frac{1}{2}(b_1+b_2)h$
- 2)  $(b_1+b_2)h + S b_2$
- 3)  $(b_1+b_2) + 2Sh^2$
- 4)  $2[(b_1+b_2)(b+Sh)]$

**Correct Answer:**  $(b_1+b_2) + 2Sh^2$

**QID : 217 -** The following item of earthwork is not measured separately \_\_\_\_\_.

**Options:**

- 1) Setting out of works
- 2) Site clearance
- 3) dead men
- 4) All options are correct

**Correct Answer:** All options are correct

**QID : 218 -** Pick up the incorrect statement from the following \_\_\_\_\_.

**Options:**

- 1) No deduction is made for the volume occupied by reinforcement
- 2) No deduction is made for the openings up to 0.1 sq.m
- 3) No deduction is made for volumes occupied by pipes, not exceeding 100 sq. cm in cross-

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section

4) None of the these

**Correct Answer:** None of the these

**QID : 219** - While estimating a reinforced cement structure the omitted cover of concrete is assumed \_\_\_\_\_.

**Options:**

- 1) at the end of reinforcing bar, not less than 25 mm or twice the diameter of the bar
- 2) in thin slabs, 12 mm minimum or diameter of the bar whichever is more
- 3) for reinforcing longitudinal bar in a beam 25 mm minimum or diameter of the largest bar which is more
- 4) All options are correct

**Correct Answer:** All options are correct

**QID : 220** - For 100 sq. m cement concrete (1:2:4) 4 cm thick floor, the quantity of cement required is \_\_\_\_\_.

**Options:**

- 1) 0.90 m<sup>3</sup>
- 2) 0.94 m<sup>3</sup>
- 3) 0.98 m<sup>3</sup>
- 4) 1.00 m<sup>3</sup>

**Correct Answer:** 0.94 m<sup>3</sup>

**QID : 221** - If h is the difference in height between end points of a chain of length l the required slope correction is \_\_\_\_\_.

**Options:**

- 1)  $h^2/(2l)$
- 2)  $h/(2l)$
- 3)  $h^2/l$
- 4)  $h^2/(4l)$

**Correct Answer:**  $h^2/(2l)$

**QID : 222** - Correction per chain length of 100 links along a slope of  $\alpha$  radians is \_\_\_\_\_.

**Options:**

- 1)  $100 \alpha^2$
- 2)  $100 \alpha$

- 3) 100 α3
- 4) 100 α(-1)

**Correct Answer:** 100 α

**QID : 223** - Check lines (or proof lines) in Chain Surveying are essentially required \_\_\_\_\_.

**Options:**

- 1) to plot the chain lines
- 2) to plot the offsets
- 3) to indicate the accuracy of the survey work
- 4) to increase the out-turn

**Correct Answer:** to indicate the accuracy of the survey work

**QID : 224** - For taking offsets with an optical square on the right hand side of the chain line it is held \_\_\_\_\_.

**Options:**

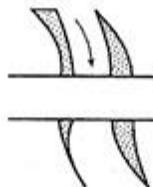
- 1) by right hand upside down
- 2) by left hand upright
- 3) by right hand upright
- 4) by left hand upside down

**Correct Answer:** by left hand upright

**QID : 225** -

The conventional sign shown in the figure below represents a.

आकृति में दर्शाया गया परंपरागत चिह्न \_\_\_\_\_ को प्रदर्शित करता है।



**Options:**

- 1) road bridge
- 2) railway bridge
- 3) canal bridge
- 4) aquaduct

**Correct Answer:** road bridge

**QID : 226** - In an adjusted level when the bubble is central, the axis of the bubble tube becomes parallel to \_\_\_\_\_.

**Options:**

- 1) line of sight
- 2) line of collimation
- 3) axis of the telescope
- 4) None of the these

**Correct Answer:** line of sight

**QID : 227** - An internal focusing type surveying telescope may be focused by the movement of \_\_\_\_\_.

**Options:**

- 1) objective glass of the telescope
- 2) convex-lens in the telescope
- 3) concave lens in the telescope
- 4) plano-convex lens in the telescope

**Correct Answer:** concave lens in the telescope

**QID : 228** - A dumpy level is set up with its eye-piece vertically over a peg A. The height from the top of peg A to the center of the eye-piece is 1.540 m and the reading on peg B is 0.705 m. The level is then setup over B. The height of the eye-piece above peg B is 1.490 m and a reading on A is 2.195 m. The difference in level between A and B is \_\_\_\_\_.

**Options:**

- 1) 2.900 m
- 2) 3.030 m
- 3) 0.770 m
- 4) 0.785 m

**Correct Answer:** 0.770 m

**QID : 229** - The constant vertical distance between two adjacent contours is called \_\_\_\_\_.

**Options:**

- 1) horizontal interval
- 2) horizontal equivalent
- 3) vertical equivalent
- 4) contour interval

**Correct Answer:** contour interval

**QID : 230** - The direction of steepest slope on a contour is \_\_\_\_\_.

**Options:**

- 1) along the contour
- 2) at an angle of 45° to the contour
- 3) at right angles to the contour
- 4) None of the these

**Correct Answer:** at right angles to the contour

**QID : 231** - Geologic cycle for the formation of soil, is \_\_\_\_\_.

**Options:**

- 1) Upheaval → transportation → deposition → weathering
- 2) Weathering → upheaval → transportation → deposition
- 3) Transportation → upheaval → weathering → deposition
- 4) weathering → transportation → deposition → upheaval

**Correct Answer:** weathering → transportation → deposition → upheaval

**QID : 232** - Water content of a soil sample is the difference of the weight of the given sample at the given temperature and the weight determined after drying it for 24 hours at temperatures ranging from \_\_\_\_\_.

**Options:**

- 1) 80° to 90° C
- 2) 90° to 95° C
- 3) 95° to 100° C
- 4) 105° to 110° C

**Correct Answer:** 105° to 110° C

**QID : 233** - Fundamental relationship between dry density ( $\gamma_d$ ), bulk density ( $\gamma$ ) and water content ( $\omega$ ) is \_\_\_\_\_.

**Options:**

- 1)  $\gamma = \gamma_d / (1 + \omega)$
- 2)  $\gamma_d = \gamma / (1 + \omega)$
- 3)  $\omega = \gamma / (1 + \gamma_d)$
- 4)  $\omega = \gamma / (1 - \gamma_d)$

**Correct Answer:**  $\gamma_d = \gamma / (1 + \omega)$

**QID : 234** - Pick up the correct statement from the following \_\_\_\_\_.

**Options:**

- 1) The void ratio in soils is defined as the ratio of the volume of voids to the volume of solids

2) The porosity of a soil is defined as the ratio of the volume of voids to the gross volume of the soil

3) The bulk density of a soil is defined as the unit weight of the soil

4) All options are correct

**Correct Answer:** All options are correct

**QID : 235** - Alcohol is used in manometer, because \_\_\_\_\_.

**Options:**

1) its vapor pressure is low

2) it provides suitable meniscus for the inclined tube

3) its density is less

4) it provides longer length for a given pressure difference

**Correct Answer:** its vapor pressure is low

**QID : 236** - The property of fluid by virtue of which it offers resistance to shear is called \_\_\_\_\_.

**Options:**

1) surface tension

2) adhesion

3) cohesion

4) viscosity

**Correct Answer:** viscosity

**QID : 237** - The unit of kinematic viscosity is \_\_\_\_\_.

**Options:**

1)  $m^2/sec$

2)  $kg-sec/m^2$

3)  $newton-sec/m^2$

4)  $newton-sec^2/m$

**Correct Answer:**  $m^2/sec$

**QID : 238** - The total pressure on the surface of a vertical sluice gate 2m x 1m with its top 2 m surface being 0.5 m below the water level will be \_\_\_\_\_.

**Options:**

1) 500 kg

2) 1000 kg

3) 1500 kg

4) 2000 kg

**Correct Answer:** 2000 kg

**QID : 239** - Metacentric height is given as the distance between \_\_\_\_\_.

**Options:**

- 1) the centre of gravity of the body and the metacentre
- 2) the centre of gravity of the body and the centre of buoyancy
- 3) the centre of gravity of the body and the centre of pressure
- 4) centre of buoyancy and metacentre

**Correct Answer:** the centre of gravity of the body and the metacentre

**QID : 240** - The difference of pressure between the inside and outside of a liquid drop is \_\_\_\_\_.

**Options:**

- 1)  $p = T \times r$
- 2)  $p = T/r$
- 3)  $p = T/2r$
- 4)  $p = 2T/r$

**Correct Answer:**  $p = 2T/r$

**QID : 241** - The property by which a liquid opposes relative motion between its different layers is called \_\_\_\_\_.

**Options:**

- 1) surface tension
- 2) co-efficient of viscosity
- 3) viscosity
- 4) osmosis

**Correct Answer:** surface tension

**QID : 242** - The atmospheric pressure with rise in altitude decreases \_\_\_\_\_.

**Options:**

- 1) linearly
- 2) first slowly then steeply
- 3) first steeply and then gradually
- 4) unpredictable

**Correct Answer:** first slowly then steeply

**QID : 243** - Barometer is used to measure \_\_\_\_\_.

**Options:**

- 1) pressure in pipes, channels etc..
- 2) atmospheric pressure
- 3) very low pressure
- 4) difference of pressure between two points

**Correct Answer:** atmospheric pressure

**QID : 244** - Flow meters based on obstruction principle like orifice plates can be used with Reynold's number upto approximately \_\_\_\_\_.

**Options:**

- 1) 500
- 2) 1000
- 3) 2000
- 4) 4000

**Correct Answer:** 2000

**QID : 245** - The state of the soil when plants fail to extract sufficient water for their requirements is \_\_\_\_\_.

**Options:**

- 1) maximum saturated point
- 2) permanent wilting point
- 3) ultimate utilization point
- 4) None of these

**Correct Answer:** None of these

**QID : 246** - The field capacity of a soil is 25%, its permanent wilting point is 15% and specific dry unit weight is 1.5. If the depth of root zone of a crop is 80 cm, the storage capacity of the soil is \_\_\_\_\_.

**Options:**

- 1) 8 cm
- 2) 10 cm
- 3) 12 cm
- 4) 14 cm

**Correct Answer:** 12 cm

**QID : 247** - According to the recommendations of Nagpur Conference the width formation of an ideal National Highway in hard rock cutting is \_\_\_\_\_.

**Options:**

- 1) 8.9 m
- 2) 7.9 m
- 3) 6.9 m
- 4) 6.5 m

**Correct Answer:** 7.9 m

**QID : 248** - If L is the length of a rail and R is the radius of a curve, the versine h for the curve is \_\_\_\_\_.

**Options:**

- 1)  $a = L/4R$
- 2)  $a = L^2/4R$
- 3)  $h = L^2/8R$
- 4)  $h = L^2/16R$

**Correct Answer:**  $h = L^2/8R$

**QID : 249** - Pick up the incorrect statement from the following.

**Options:**

- 1) Manholes are provided in sewer pipes at suitable intervals
- 2) Catch basins are generally provided in sewers for carrying drainage discharge
- 3) Inlets are generally provided in all sewers
- 4) None of the these

**Correct Answer:** Inlets are generally provided in all sewers

**QID : 250** - If q is the average sewage flow from a city of population P, the maximum sewage flow \_\_\_\_\_.

**Options:**

- 1)  $Q = [(4 + \sqrt{P}) / (18 + \sqrt{P})]q$
- 2)  $Q = [(18 + P) / (4 + \sqrt{P})]q$
- 3)  $Q = [(18 + \sqrt{P}) / (4 + \sqrt{P})]q$
- 4)  $Q = [(5 + \sqrt{P}) / (15 + \sqrt{P})]q$

**Correct Answer:**  $Q = [(18 + \sqrt{P}) / (4 + \sqrt{P})]q$

**QID : 251** - A body is said to be in equilibrium if \_\_\_\_\_.

**Options:**

- 1) it moves horizontally
- 2) it moves vertically

3) it rotates about its C.G.

4) None of these

**Correct Answer:** None of these

**QID : 252 -**

The forces acting normally on the cross section of a bar shown in the figure given below introduces \_\_\_\_\_.

दर्शाई गई आकृति के अनुसार छड़ के अनुप्रस्थ खंड के लम्बवत कार्य कर रहे बल \_\_\_\_\_ का आरंभ करेंगे।



**Options:**

1) compressive stress

2) tensile stress

3) shear stress

4) None of these

**Correct Answer:** compressive stress

**QID : 253 -** At yield point of a test piece, the material \_\_\_\_\_.

**Options:**

1) obeys Hooke's law

2) behaves in an elastic manner

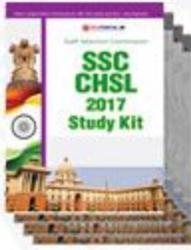
3) regains its original shape on removal of the load

4) undergoes plastic deformation

**Correct Answer:** undergoes plastic deformation

**QID : 254 -** If a concrete column 200 x 200 mm in cross-section is reinforced with four steel bars of 1200 mm<sup>2</sup> total cross-sectional area. What is the safe load for the column if permissible stress in concrete is 5 N/mm<sup>2</sup> and  $E_s = 15 E_c$ ?

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**Options:**

- 1) 264 MN
- 2) 274 MN
- 3) 284 MN
- 4) 294 MN

**Correct Answer:** 284 MN

**QID : 255** - A steel rod of sectional area 25 sq. mm connects two parallel walls 5 m apart. The nuts at the ends were tightened when the rod was heated at 100° C. If  $\alpha_{\text{steel}} = 0.000012/\text{C}^\circ$ ,  $E_{\text{steel}} = 0.2 \text{ MN/mm}^2$ , the tensile force developed at a temperature of 50° C is \_\_\_\_\_.

**Options:**

- 1) 80 N/mm<sup>2</sup>
- 2) 100 N/mm<sup>2</sup>
- 3) 120 N/mm<sup>2</sup>
- 4) 150 N/mm<sup>2</sup>

**Correct Answer:** 120 N/mm<sup>2</sup>

**QID : 256** - The ratio of tangential and normal components of a stress on an inclined plane through  $\theta^\circ$  to the direction of the force is \_\_\_\_\_.

**Options:**

- 1)  $\sin^2\theta$
- 2)  $\cos^2\theta$
- 3)  $\tan^2\theta$
- 4)  $\cot^2\theta$

**Correct Answer:**  $\tan^2\theta$

**QID : 257** - Pick up the correct statement from the following.

**Options:**

- 1) For a uniformly distributed load, the shear force varies linearly
- 2) For a uniformly distributed load, bulk modular curve is a parabola
- 3) For a load varying linearly, the shear force curve is a parabola
- 4) All options are correct

**Correct Answer:** All options are correct

**QID : 258** - At any point of a beam, the section modulus may be obtained by dividing the moment of inertia of the section by \_\_\_\_\_.

**Options:**

- 1) depth of the section
- 2) depth of the neutral axis
- 3) maximum tensile stress at the section
- 4) maximum compressive stress at the section

**Correct Answer:** depth of the neutral axis

**QID : 259** - The moment of inertia of a circular section about any diameter D, is \_\_\_\_\_.

**Options:**

- 1)  $(\pi D^2)/64$
- 2)  $(\pi D^4)/32$
- 3)  $(\pi D^3)/64$
- 4)  $(\pi D^4)/64$

**Correct Answer:**  $(\pi D^4)/64$

**QID : 260** - In case of principal axes of a section \_\_\_\_\_.

**Options:**

- 1) sum of moment of inertia is zero
- 2) difference of moment of inertia is zero
- 3) product of moment of inertia is zero
- 4) None of these

**Correct Answer:** product of moment of inertia is zero

**QID : 261** - The locus of the moment of inertia about inclined axis to the principal axis is \_\_\_\_\_.

**Options:**

- 1) straight line
- 2) parabola
- 3) circle
- 4) ellipse

**Correct Answer:** ellipse

**QID : 262** - The ratio of moments of inertia of a triangular section about its base and about a centroidal axis parallel to its base is \_\_\_\_\_.

**Options:**

- 1) 1
- 2) 1.5

3) 2

4) 3

**Correct Answer:** 3

**QID : 263** - If aggregates completely pass through a sieve of size 75 mm and are retained on a sieve of size 60 mm, the particular aggregate will be flaky if its minimum dimension is less than \_\_\_\_\_.

**Options:**

1) 20.5 mm

2) 30.5 mm

3) 40.5 mm

4) 50.5 mm

**Correct Answer:** 40.5 mm

**QID : 264** - For the construction of thin R.C.C. structures the type of cement to be avoided is \_\_\_\_\_.

**Options:**

1) ordinary Portland cement

2) rapid hardening cement

3) low heat cement

4) blast furnace slag cement

**Correct Answer:** blast furnace slag cement

**QID : 265** - Percentage of pozzolanic material containing clay upto 80% used for the manufacture of pozzolana cement is \_\_\_\_\_.

**Options:**

1) 30%

2) 40%

3) 50%

4) 60%

**Correct Answer:** 30%

**QID : 266** - Pick up the incorrect statement applicable to the field test of good cement.

**Options:**

1) When one thrusts one's hand into a bag of cement, one should feel warm

2) The color of the cement is bluish

3) A handful of cement thrown into a bucket of water should sink immediately

4) All options are correct

**Correct Answer:** All options are correct

**QID : 267** - Pick up the correct statement from the following.

**Options:**

- 1) The maximum size of a coarse aggregate is 75 mm and minimum is 4.75 mm
- 2) The maximum size of the fine aggregate is 4.75 mm and minimum 0.75 mm
- 3) The material having particles of size varying from 0.06 mm to 0.002 mm is known as silt
- 4) All options are correct

**Correct Answer:** All options are correct

**QID : 268** - Sand generally contains salt if it is obtained from \_\_\_\_\_.

**Options:**

- 1) nala beds
- 2) river beds
- 3) sea beds
- 4) All options are correct

**Correct Answer:** sea beds

**QID : 269** - Pick up the correct statement from the following.

**Options:**

- 1) Bulking of sand is caused due to formation of a thin film of surface moisture
- 2) Fine sand bulks more than coarse sand
- 3) With 10% moisture content by weight the bulking of sand is increased by 50%
- 4) All options are correct

**Correct Answer:** All options are correct

**QID : 270** - If fineness modulus of sand is 2.5 it is graded as \_\_\_\_\_.

**Options:**

- 1) very fine sand
- 2) fine sand
- 3) medium sand
- 4) coarse sand

**Correct Answer:** fine sand

**QID : 271** - An ordinary Portland cement when tested for its fineness, should not leave any residue on I.S. Sieve No.9, more than \_\_\_\_\_.

**Options:**

- 1) 5%
- 2) 10%
- 3) 15%
- 4) 20%

**Correct Answer:** 10%

**QID : 272** - Pick up the correct statement from the following.

**Options:**

- 1) Insufficient quantity of water makes the concrete mix harsh
- 2) Insufficient quantity of water makes the concrete unworkable
- 3) Excess quantity of water makes the concrete segregated
- 4) All options are correct

**Correct Answer:** All options are correct

**QID : 273** - Pick up the incorrect statement from the following.

**Options:**

- 1) A rich mix of concrete possesses higher strength than that a lean mix of desired workability with excessive quantity of water
- 2) The strength of concrete decreases as the water cement ratio increases
- 3) If the water cement ratio is less than 0.45, the concrete is not workable and causes honey-combed structure
- 4) Good compaction by mechanical vibrations, increases the strength of concrete

**Correct Answer:** A rich mix of concrete possesses higher strength than that a lean mix of desired workability with excessive quantity of water

**QID : 274** - Pick up the correct statement from the following.

**Options:**

- 1) The concrete gains strength due to hydration of cement
- 2) The concrete cured at a temperature below 23° C, gains strength up to 28 days
- 3) The concrete does not set at freezing point
- 4) All options are correct

**Correct Answer:** All options are correct

**QID : 275** - Hardening of cement occurs at \_\_\_\_\_.

**Options:**

- 1) rapid rate during the first few days and afterwards it continues to increase at a decreased rate
- 2) slow rate during the first few days and afterwards it continues to increase at a rapid rate
- 3) uniform rate throughout its age
- 4) None of these

**Correct Answer:** None of these

**QID : 276** - Pick up the correct statement from the following.

**Options:**

- 1) Higher workability indicates unexpected increase in the moisture content
- 2) Higher workability indicates deficiency of sand
- 3) If the concrete mix is dry, the slump is zero
- 4) All options are correct

**Correct Answer:** All options are correct

**QID : 277** - The top diameter, bottom diameter and the height of a slump mould are \_\_\_\_\_.

**Options:**

- 1) 10 cm, 20 cm, 30 cm
- 2) 10 cm, 30 cm, 20 cm
- 3) 20 cm, 10 cm, 30 cm
- 4) 20 cm, 30 cm, 10 cm

**Correct Answer:** 10 cm, 20 cm, 30 cm

**QID : 278** - Pick up the correct statement from the following.

**Options:**

- 1) Segregation is necessary for a workable concrete
- 2) Consistency does not affect the workability of concrete
- 3) If the slump increases, workability decreases
- 4) None of these

**Correct Answer:** None of these

**QID : 279** - The grade of concrete M 150 means that compressive strength of a 15 cm cube after 28 days, is \_\_\_\_\_.

**Options:**

- 1) 100 kg/cm<sup>2</sup>
- 2) 150 kg/cm<sup>2</sup>
- 3) 200 kg/cm<sup>2</sup>
- 4) 250 kg/cm<sup>2</sup>

**Correct Answer:** 150 kg/cm<sup>2</sup>

**QID : 280** - The preliminary test is repeated if the difference compressive strength of three test specimens, exceeds \_\_\_\_\_.

**Options:**

- 1) 5 kg/cm<sup>2</sup>
- 2) 8 kg/cm<sup>2</sup>
- 3) 10 kg/cm<sup>2</sup>
- 4) 15 kg/cm<sup>2</sup>

**Correct Answer:** 15 kg/cm<sup>2</sup>

**QID : 281** - According to load factor method, the permissible load  $W$  on a short column reinforced with longitudinal bars and lateral stirrups is \_\_\_\_\_.

**Options:**

- 1) Stress in concrete x area of concrete
- 2) Stress in steel x area of steel
- 3) Stress in concrete x area of concrete + stress in steel x area of steel
- 4) None of these

**Correct Answer:** Stress in concrete x area of concrete + stress in steel x area of steel

**QID : 282** - The length of the lap in a compression member is kept greater than [bar diameter x (Permissible stress in bar)/(Five times the bond stress)] or is \_\_\_\_\_.

**Options:**

- 1) 12 bar diameters
- 2) 18 bar diameters
- 3) 24 bar diameters
- 4) 30 bar diameters

**Correct Answer:** 24 bar diameters

**QID : 283** - A short column 20 cm x 20 cm in section is reinforced with 4 bars whose area of cross section is 20 sq.cm. If permissible compressive stresses in concrete and steel are 40 kg/cm<sup>2</sup> and 300 kg/cm<sup>2</sup>, the safe load on the column should not exceed \_\_\_\_\_.

**Options:**

- 1) 412 kg
- 2) 4120 kg
- 3) 412000 kg
- 4) None of these

**Correct Answer:** None of these

**QID : 284** - A column is regarded as long column if the ratio of its effective length and lateral dimension exceeds \_\_\_\_\_.

**Options:**

- 1) 10
- 2) 15
- 3) 20
- 4) None of these

**Correct Answer:** None of these

**QID : 285** - If the size of a column is reduced above the floor, the main bars of the columns \_\_\_\_\_.

**Options:**

- 1) continues up
- 2) bend inwards at the floor level
- 3) stops just below the floor level and separates lap bars provided
- 4) All options are correct

**Correct Answer:** All options are correct

**QID : 286** - The pitch of the main bars in a simply supported slab should not exceed its effective depth by \_\_\_\_\_.

**Options:**

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

**Correct Answer:** six times

**QID : 287** - Distribution reinforcement in a simply supported slab is provided to distribute \_\_\_\_\_.

**Options:**

- 1) load
- 2) temperature stress
- 3) shrinkage stress
- 4) All options are correct

**Correct Answer:** All options are correct

**QID : 288** - In a simply supported slab the minimum spacing of distribution reinforcement should be four times the effective thickness of the slab or \_\_\_\_\_.

**Options:**

- 1) 20 cm
- 2) 30 cm
- 3) 40 cm
- 4) None of these

**Correct Answer:** None of these

**QID : 289** - The modular ratio 'm' of a concrete whose permissible compressive stress is 'C' may be obtained from the equation \_\_\_\_\_.

**Options:**

- 1)  $m = 700/3C$
- 2)  $m = 1400/3C$
- 3)  $m = 2800/3C$
- 4)  $m = 3500/3C$

**Correct Answer:**  $m = 2800/3C$

**QID : 290** - For M 150 grade concrete (1 : 2 : 4) the moment of resistance factor is \_\_\_\_\_.

**Options:**

- 1) 0.87
- 2) 8.5
- 3) 7.5
- 4) 5.8

**Correct Answer:** 8.5

**QID : 291** - If the thickness of a structural member is small as compared to its length and width, it is classified as \_\_\_\_\_.

**Options:**

- 1) one dimensional
- 2) two dimensional
- 3) three dimensional
- 4) None of these

**Correct Answer:** two dimensional

**QID : 292** - Design of a riveted joint assumes that \_\_\_\_\_.

**Options:**

- 1) the bending stress in rivets is accounted for
- 2) the riveted hole is to be filled by the rivet
- 3) the stress in the plate is not uniform
- 4) the friction between plates is considered

**Correct Answer:** the riveted hole is to be filled by the rivet

**QID : 293** - Rolled steel T-sections are used \_\_\_\_\_.

**Options:**

- 1) as columns

- 2) with flat strips to connect plates in steel rectangular tanks
- 3) as built up sections to resist axial tension
- 4) None of these

**Correct Answer:** with flat strips to connect plates in steel rectangular tanks

**QID : 294** - With a percentage increase of carbon in steel, decreases its \_\_\_\_\_.

**Options:**

- 1) strength
- 2) hardness
- 3) brittleness
- 4) ductility

**Correct Answer:** ductility

**QID : 295** - If  $P$  is the wind pressure in  $\text{kg/cm}^2$ ,  $v$  is the velocity in  $\text{km/hour}$  and  $K$  is constant of proportionality then \_\_\_\_\_.

**Options:**

- 1)  $P=K/v^2$
- 2)  $v=K/P^2$
- 3)  $P=Kv^2$
- 4)  $P=Kv$

**Correct Answer:**  $P=Kv^2$

**QID : 296** - Factor of safety is the ratio of \_\_\_\_\_.

**Options:**

- 1) yield stress to working stress
- 2) tensile stress to working stress
- 3) compressive stress to working stress
- 4) bearing stress to working stress

**Correct Answer:** yield stress to working stress

**QID : 297** - The ratio of shearing stress to shearing strain within elastic limit, is known as \_\_\_\_\_.

**Options:**

- 1) modulus of elasticity
- 2) shear modulus of elasticity
- 3) bulk modulus of elasticity
- 4) tangent modulus of elasticity

**Correct Answer:** shear modulus of elasticity

**QID : 298** - The rivets which are heated and then driven in the field are known \_\_\_\_\_.

**Options:**

- 1) power driven shop rivets
- 2) power driven field rivets
- 3) hand driven rivets
- 4) cold driven rivets\

**Correct Answer:** power driven field rivets

**QID : 299** - The gross diameter of a rivet is the diameter of \_\_\_\_\_.

**Options:**

- 1) cold rivet before driving
- 2) rivet after driving
- 3) rivet hole
- 4) None of these

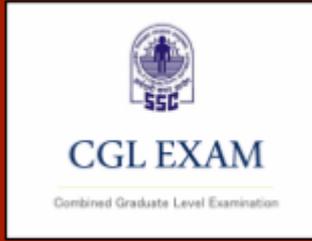
**Correct Answer:** rivet after driving

**QID : 300** - Working shear stress on the gross area of a rivet as recommended by Indian Standards is \_\_\_\_\_.

**Options:**

- 1) 785 kg/cm<sup>2</sup>
- 2) 1025 kg/cm<sup>2</sup>
- 3) 2360 kg/cm<sup>2</sup>
- 4) None of the these

**Correct Answer:** 1025 kg/cm<sup>2</sup>



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