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

**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°, 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°
**4**) inclined at 60°

**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 of 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 x d x s
**2**) √[(d2 x (ds2)]
**3**) L.D √(1+s2)
**4**) 2Ld √(1+s2)

**Correct Answer:** L.D √(1+s2)

**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 _____.

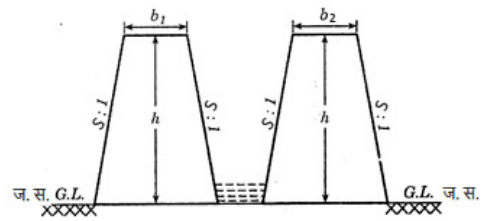
**Options:**
**1**) 300 m3
**2**) 600 m3
**3**) 900 m3
**4**) 1200 m3

**Correct Answer:** 1200 m3

**QID : 216** -

The cross-sectional area of the embankment of a canal fully in em-bankment, (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**) 1/2(b1+b2)h
**2**) (b1+b2)h+ Sb2
**3**) (b1+b2)+2Sh2
**4**) 2[(b1+b2)(b+Sh)]

**Correct Answer:** (b1+b2)+2Sh2

**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- 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 m3
**2**) 0.94 m3
**3**) 0.98 m3
**4**) 1.00 m3

**Correct Answer:** 0.94 m3

**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**) h2/(2l)
**2**) h/(2l)
**3**) h2/l
**4**) h2/(4l)

**Correct Answer:** h2/(2l)

**QID : 222** - Correction per chain length of 100 links along a slope of α radians is _____.

**Options:**
**1**) 100 α2
**2**) 100 α
**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 _____.

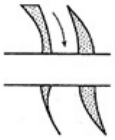
**Options:**
**1**) by right hand upside down
**2**) by left hand upright
**3**) by right hand upright
**4**) by left hand upside down

**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 (γd), bulk density (γ) and water content (ω) 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**) m2/sec
**2**) kg-sec/m2
**3**) newton-sec/m2
**4**) newton-sec2/m

**Correct Answer:** m2/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 x 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= L2/4R
**3**) h= L2/8R
**4**) h= L2/16R

**Correct Answer:** h= L2/8R

**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+√P)/(18+ √P)]q
**2**) Q = [(18 +P)/(4+ √P)]q
**3**) Q = [(18+√P)/(4 + √P)]q
**4**) Q = [(5+√P)/(15 + √P)]q

**Correct Answer:** Q = [(18+√P)/(4 + √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 mm2 total cross-sectional area. What is the safe load for the column if permissible stress in concrete is 5 N/mm2 and Es =15 Ec?

**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 αsteel = 0.000012/C°, Esteel = 0.2 MN/mm2, the tensile force developed at a temperature of 50° C is _____.

**Options:**
**1**) 80 N/mm2
**2**) 100 N/mm2
**3**) 120 N/mm2
**4**) 150 N/mm2

**Correct Answer:** 120 N/mm2

**QID : 256** - The ratio of tangential and normal components of a stress on an inclined plane through θ° to the direction of the force is _____.

**Options:**
**1**) sinθ
**2**) cosθ
**3**) tanθ
**4**) cosθ

**Correct Answer:** tanθ

**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**) (πD2)/64
**2**) (πD4)/32
**3**) (πD3)/64
**4**) (πD4)/64

**Correct Answer:** (πD4)/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/cm2
**2**) 150 kg/cm2
**3**) 200 kg/cm2
**4**) 250 kg/cm2

**Correct Answer:** 150 kg/cm2

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

**Options:**
**1**) 5 kg/cm2
**2**) 8 kg/cm2
**3**) 10 kg/cm2
**4**) 15 kg/cm2

**Correct Answer:** 15 kg/cm2

**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/cm2 and 300 kg/cm2, 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 kg/cm2, v is the velocity in km/hour and K is constant of proportionality then _____.

**Options:**
**1**) P=K/v2
**2**) v=K/P2
**3**) P=Kv2
**4**) P=Kv

**Correct Answer:** P=Kv2

**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/cm2
**2**) 1025 kg/cm2
**3**) 2360 kg/cm2
**4**) None of the these

**Correct Answer:** 1025 kg/cm2