

TEST – 3 (GENERAL ENGINEERING(CIVIL))

- Q.1 In sewers, the effect of scouring is more on-
- a) top
 - b) bottom
 - c) horizontal side
 - d) on sides
- Q.2 For non- scouring velocity 5 m /sec, the type of sewers generally preferred to is-
- a) Cast iron sewers
 - b) Cement concrete sewers
 - c) Glazed bricks sewers
 - d) Stone ware sewers
- Q.3 The angle subtended by the surface of lower water with partial flow, at sewer centre is 1200, the depth of sewage is-
- a) 20cm
 - b) 25cm
 - c) 40cm
 - d) 50cm
- Q.4 The asbestos cement pipes are generally laid-
- a) horizontally
 - b) vertically
 - c) at angle of 30°
 - d) at angle of 60°
- Q.5 The algae dies in the zone of-
- a) degradation
 - b) \active decomposition
 - c) recovery
 - d) clean water
- Q.6 The grit & silt of the grit chambers, may not be used for-
- a) raising low lying areas by dumping
 - b) concreting
 - c) Both a & b
 - d) Neither a & b
- Q.7 Discrete or granular particles change their –
- a) Size
 - b) Shape
 - c) Weight
 - d) None of these
- Q.8 The digested sludge from septic tanks, is removed after a maximum in period of-
- a) 3 years
 - b) 3.5 years
 - c) 4 years
 - d) 5 years
- Q.9 For the prediction of future population of a city, the factor considered is-
- a) births
 - b) deaths
 - c) migrants
 - d) All of the above
- Q.10 The storage capacity of a reservoir may be divided into three zones
- a) Dead storage
 - b) Useful storage
 - c) Surcharge storage
 - d) None o these
- Q.11 Bessemer process is used for the manufacture of-
- a) Pig iron
 - b) Cast iron
 - c) Wrought iron
 - d) Steel
- Q.12 Red short iron cracks when bent due to the presence of-
- a) Sulphur
 - b) Carbon
 - c) Phosphorus
 - d) Silicon
- Q.13 Brittleness of cold is due to an excess of-
- a) Sulphur
 - b) Carbon
 - c) Phosphorus
 - d) Silicone
- Q.14 Wrought iron is manufactured from pig iron by-
- a) refining
 - b) puddling
 - c) shingling
 - d) all of the above
- Q.15 A ferrous metal is-
- a) Cast iron
 - b) wrought iron
 - c) steel
 - d) all of the above
- Q.16 Mastic Asphalt is-
- a) acid resisting material
 - b) non- corrosive material
 - c) Corrosive material
 - d) hearing –resisting material
- Q.17 Bitumen is generally obtained from-
- a) Organic material

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- b) Synthetic material
c) Petroleum product
d) Coal
- Q.18 Dextrin is-
a) Animal glue
b) Starch glue
c) Albumin glue
d) rubber based adhesive
- Q.19 Water paint is a
a) White wash
b) colour wash
c) Whiting
d) All of these
- Q.20 Stuck paints are suitable for-
a) Stone masonry
b) Brick walls
c) Both a & b
d) Neither a & b
- Q.21 Correction due to refraction is given by:
a) $0.0112D^2$ b) $0.0785 D^2$
c) $0.0673D^2$ d) $0.0012D^2$
- Q.22 An imaginary line passing through the optical centre of the objective and the optical centre of the eyepiece in the telescope of a surveying instrument is called the-
a) horizontal axis
b) line of collimation
c) optical axis of telescope
d) reference axis
- Q.23 Survey is preferred with true meridians because there-
a) convergent poles
b) do not change with time
c) facilitate plotting
d) all of the above
- Q.24 The locate plan of property boundaries, the scale will be:-
a) 1 : 50 to 1 : 100
b) 1 : 1000 to 1 : 5000
c) 1 : 5000 to 1 : 10000
d) 1 ; 10000 to 1 : 50000
- Q.25 The graphical method of producing topographic maps is known as-
a) Cartographic surveying
b) Hydrographic surveying
c) Hand surveying
d) Photogrammetric surveying
- Q.26 Error arising from carelessness of the observer are known as-
a) Compensating errors
b) Mistakes
c) systematic errors
d) Discrepancy
- Q.27 Theory of probability is applied to
a) accidental errors
b) cumulative errors
c) both a & b
d) None of these
- Q.28 The departure of a line traverse is its length multiplies by-
a) Cosine of reduced bearing
b) Sine of reduced bearing
c) Secant of reduced bearing
d) Tangent of reduced bearing
- Q.29 The most accurate method of plotting a traverse by-
a) Independent coordinates
b) Consecutive coordinates
c) Both a & b
d) by tangent

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- Q.30 The process of establishing intermediate points, on a given straight line where ends are indivisible, with theodolite is called –
- a) Centering
 - b) traversing
 - c) lining in
 - d) balancing in
- Q.31 The activity of clay is equal to
- a) Ratio of the percentage of the plasticity index to the percentage of the clay fraction
 - b) Reaction of clay with alkali salts
 - c) Rate of flow of clay at optimum moisture content
 - d) Ratio of the natural water content minus the plastic limit to the liquid limit minus the plastic limit.
- Q.32 A pycnometer is used to determine
- a) voids ratio
 - b) dry density
 - c) water content
 - d) density index
- Q.33 Which of the following soils has more plasticity index?
- a) Sand
 - b) Silt
 - c) Clay
 - d) Gravel
- Q.34 Pick up the correct statement from the following:-
- a) In soils, the flow index indicates variation in shear strength with water content.
 - b) Liquid limit minus plastic limit is known as plasticity index of the soil.
 - c) Liquid limit minus shrinkage limit is known as shrinkage index of the soil.
 - d) The ratio of the plasticity index to the flow limit is known as toughness index of the soil.
- Q.35 Sedimentation analysis is based on the assumption that
- a) soil particles are spherical
 - b) particles settle independent of other particles
 - c) walls of the jar do not affect the settlement
 - d) All of the above
- Q.36 Hydrometer readings are corrected for
- a) temperature correction
 - b) meniscus correction
 - c) dispersing agent correction
 - d) temperature, meniscus and dispersing agent corrections
- Q.37 The minimum water content at which the soil retains its liquid state and also possesses a small shearing strength against flowing is known as
- a) liquid limit
 - b) Plastic limit
 - c) shrinkage limit
 - d) permeability limit
- Q.38 The clay mineral with the largest swelling and shrinkage characteristics is:
- a) kaolinite
 - b) illite
 - c) montmorillonite
 - d) None of these
- Q.39 Quick sand is a
- a) type of sand
 - b) flow condition occurring in cohesive soils
 - c) flow condition occurring in cohesion less soils
 - d) flow condition occurring in both cohesive and cohesion less soils
- Q.40 Time factor for a clay layer is
- a) a dimensional parameter
 - b) directly proportional to permeability of soil
 - c) inversely proportional to drainage path
 - d) independent of thickness of clay layer
- Q.41 The ultimate settlement of a soil is
- a) Directly proportional to the compressive index
 - b) Directly proportional to the void ratio
 - c) Inversely proportional to the compressive index
 - d) Directly proportional to the stress
- Q.42 The coefficient of consolidation is
- a) Directly proportional to the coefficient of permeability
 - b) Directly proportional to the coefficient of compressibility

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- c) Inversely proportional to the coefficient of permeability
d) None of these
- Q.43 The ultimate settlement of a soil is
a) Directly proportional to the depth of the soil strata
b) Inversely proportional to the depth of the compressible soil strata
c) Directly proportional to the depth of the compressible soil strata
d) Unrelated with the depth of the soil
- Q.44 Coefficient of compressibility is:
a) Constant of any type of soil
b) different for different types of soils and also different for a soil under different states of consolidation
c) different for different types of soils but same for a soil under different states consolidation
d) independent of type of soil but depends on the stress history of soil
- Q.45 For testing a saturated clay for shear strength, the test recommended is.
a) direct shear test
b) triaxial compression test
c) unconfined compression test
d) All of these
- Q.46 The web buckling in beams may be avoided by.
a) Stiffening the web
b) Limiting the stress
c) Increasing the span
d) Any one of the above
- Q.47 The rivets which are heated and then driven in the field, are known as
a) power driven ship rivets
b) power driven field rivets
c) hand driven rivets
d) cold driven rivets
- Q.48 Efficiency of riveted joint is defined as the ratio of
a) least strength of a riveted joint to the strength of solid plate
b) greatest strength of a riveted joint to the strength of solid plate
c) least strength of a riveted plate to the greatest strength of the riveted joint
d) All of the above
- Q.49 Design of a riveted joint, is based on the assumption
a) Load is uniformly distributed among all the rivets
b) Shear stress on a rivet is uniformly distributed over its gross area
c) Bearing stress is uniform between the contact surfaces of the plate and the rivet
d) All of these
- Q.50 In factory buildings, the horizontal beams spanning between the wall of columns supporting a wall covering, are called
a) stringers
b) trimmers
c) grits
d) lintels
- Q.51 The portal bracing in a truss bridge is used to
a) transfer load from top of end posts to bearing
b) keep the rectangular shape of the bridge cross-section
c) stiffen the structure laterally
d) prevent the sides way buckling of top chord
- Q.52 A beam of I-sections 599 mm deep and 200 mm wide has flanges 25 mm thick and web 20 mm thick. If the shear stress in the web at the junction of flange and web is q , then the shear stress in the flange at the junction is
a) $10q$
b) q
c) $0.5q$
d) $0.1q$

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- Q.53 If a three hinged parabolic arch carries a uniformly distributed load on its entire span, even section of the arch resists
- compressive force
 - tensile force
 - shear force
 - ending moment
- Q.54 Stress in members of statically determinate simple frames can be determined by
- Method of joints
 - Method of sections
 - Graphical solutions
 - All of these
- Q.55 Dimensions of a beam need to be changed if the shear stress is more than
- 10 kg/cm²
 - 15 kg/cm²
 - 20 kg/cm²
 - 25 kg/cm²
- Q.56 Lapped splices in tensile reinforcement are generally not used for bars of size larger than
- 18 mm diameter
 - 24 mm diameter
 - 30 mm diameter
 - 36 mm diameter
- Q.57 Steel bars are generally connected together to get greater length than the standard lengths by providing
- straight bar splice
 - hooked splice
 - dowel splice
 - All of these
- Q.58 The width of the flange of a T- beam should be less than
- one-third of the effective span of the T- beam
 - distance between the centers of T- beam
 - Breadth of the rib plus twelve times the thickness of the slab
 - None of these
- Q.59 The width of the flange of a L- beam, should be less than
- one-sixth of the effective span
 - Breadth of the rib + four times thickness of the slab
 - Breadth of the rib + half clear distance between ribs
 - None of these
- Q.60 In reinforced concrete footing on soil, the minimum thickness at edge should not be less than
- 10 cm
 - 15 cm
 - 20 cm
 - 25 cm
- Q.61 Centre of gravity of trapezium of height h and parallel sides a and b, measured from the side b is a distance of
- $\frac{h}{2} \frac{b+2a}{b+a}$
 - $\frac{h}{2} \frac{b-2a}{b+a}$
 - $\frac{h}{3} \frac{b+2a}{b+a}$
 - $\frac{h}{3} \frac{b+2a}{b+a}$
- Q.62 The units of second moment of an area are
- kg/m
 - kg/m²
 - kg-m²
 - m⁴
- Q.63 M.I. of thin ring (external diameter D, inner diameter d) about an axis perpendicular to the plane of Ring is
- $\frac{\pi}{64} (D^4+d^4)$
 - $\frac{\pi}{32} (D^4-d^4)$
 - $\frac{\pi}{32} (D^4+d^4)$
 - $\frac{\pi}{32} (D^4 \times d^4)$
- Q.64 The velocity of a body fallen height h, on reaching the ground is given by
- $v = 2gh$
 - $v = \sqrt{2gh}$
 - $v = \frac{1}{2gh}$
 - $h^2/2g$

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Q.65 The bending moment is maximum on a section where shear force

- a) is maximum b) is minimum
c) is equal d) changes sign

Q.66 The maximum deflection of a simply supported beam of length L with a central load W is

- a) $\frac{WL^2}{48EI}$ b) $\frac{W^2L}{24EI}$
c) $\frac{WL^2}{48EI}$ d) $\frac{WL}{8EI}$

Q.67 A column is known as medium size if its slenderness ratio is between

- a) 20 & 32
b) 32 & 120
c) 120 & 160
d) 160 & 180

Q.68 A shaft turning 150 r.p.m. is subjected to a torque of 150kg-m. Horse power transmitted by the shaft is.

- a) π b) 10π
c) π^2 d) $\frac{1}{\pi}$

Q.69 If a shaft is rotating N revolutions per minute with an applied torque T kg-m, the horse power being transmitted by the shaft is-

- a) $\frac{2\pi NT}{550}$ b) $\frac{2\pi NT}{750}$
c) $\frac{2\pi NT}{4500}$ d) $\frac{2\pi NT}{55}$

Q.70 A cylinder is said to be thin if the ratio of its thickness and diameter, is less than

- a) $\frac{1}{25}$ b) $\frac{1}{20}$
c) $\frac{1}{15}$ d) $\frac{1}{10}$