

FINAL ANSWER KEY

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Alphacode	A

Question1:-The terminal velocity of a small sphere settling in a viscous fluid varies as the

- A:-Inverse square of diameter
- B:-Inverse of diameter
- C:-first power of its diameter
- D:-inverse of fluid viscosity

Correct Answer:- Option-D

Question2:-A cement bag contains 0.035 cubic meter of cement by volume. How many bags will one tonne of cement comprises

- A:-16
- B:-17
- C:-18
- D:-20

Correct Answer:- Option-D

Question3:-Efflorescence of bricks is due to

- A:-Soluble salts present in clay for making bricks
- B:-High Porosity of bricks
- C:-High Silt Content in the soil used
- D:-Excessive burning of bricks

Correct Answer:- Option-A

Question4:-Which of the following constituent in earth gives plasticity to mould bricks in suitable shape

- A:-Silica
- B:-Lime
- C:-Alumina
- D:-Magnesia

Correct Answer:- Option-C

Question5:-The compound which contributes the highest share of heat of hydration in cement is

- A:-Tricalcium Silicate
- B:-Tricalcium aluminate
- C:-Gypsum
- D:-Combined lime

Correct Answer:- Option-B

Question6:-Putty is made up of .

- A:-White lead and turpentine
- B:-Powdered chalk and raw linseed oil
- C:-Red lead and linseed oil
- D:-Zinc oxide and boiled linseed oil

Correct Answer:- Option-B

Question7:-In making Concrete ,maximum density is achieved by,

- A:-Using sufficient cement to fill all the voids
- B:-Controlling the particle size of the ingredient
- C:-Controlling the particle size distribution of the ingredient
- D:-Reducing the quantity of mixing water

Correct Answer:- Option-C

Question8:-which one of the following is not a vehicle in paints

- A:-Nut oil
- B:-Poppy oil
- C:-Tung oil
- D:-Turpentine oil

Correct Answer:- Option-D

Question9:-In high tensile steel carbon should be less than

- A:-0.10%

B:-0.15 %

C:-0.70 %

D:-1.5%

Correct Answer:- Option-B

Question10:-The head room for a staircase should not be less than

A:-3.50m

B:-3m

C:-2.10m

D:-2m

Correct Answer:- Option-C

Question11:-The ratio of cement mortar preferred in load bearing walls in brick masonry is

A:-1:2

B:-1: 6

C:-1:8

D:-1:12

Correct Answer:- Option-B

Question12:-A curtain wall carries

A:-wind load

B:-Self weight

C:-roof load

D:-no load

Correct Answer:- Option-B

Question13:-In ordinary residential and public buildings ,the DPC is provided at

A:-Plinth level

B:-Ground level

C:-roof level

D:-lintel level

Correct Answer:- Option-A

Question14:-Laterite is a

A:-argillaceous rock

B:-silicious rock

C:-calcareous rock

D:-magma

Correct Answer:- Option-A

Question15:-Marble is

A:-Igneous rock

B:-metamorphic rock

C:-stratified rock

D:-sedimentary rock

Correct Answer:- Option-B

Question16:-In any case the bearing of lintel should not be less than

A:-100 mm

B:-150 mm

C:-200 mm

D:-300 mm

Correct Answer:- Option-B

Question17:-The resultant of two equal forces(F) acting in opposite directions will be

A:-2 F

B:- $\sqrt{2}$ F

C:-0.707 F

D:-zero

Correct Answer:- Option-D

Question18:-The set of forces ,whose resultant is zero, are known as

A:-equilibrium forces

B:-collinear forces

C:-coplanar forces

D:-concurrent forces

Correct Answer:- Option-A

Question19:-The centre of gravity of a plane lamina is not at its geometrical centre if it is a

- A:-Circle
 - B:-square
 - C:-rectangle
 - D:-right angled triangle
- Correct Answer:- Option-D

Question20:-A system of coplanar forces is in equilibrium when

- A:-force polygon closes
 - B:-funicular polygon closes
 - C:-both force and funicular polygon closes
 - D:-all the forces are coplanar concurrent
- Correct Answer:- Option-C

Question21:-The diagram showing the point of application and line of action of forces in their plane is called

- A:-Vector diagram
 - B:-space diagram
 - C:-force diagram
 - D:-funicular diagram
- Correct Answer:- Option-B

Question22:-The specification of earth work in foundation trenches, drains etc. Lift ordinarily specified is

- A:-0m
 - B:-1.50 m
 - C:-5 m
 - D:-3m
- Correct Answer:- Option-B

Question23:-In analysis of rates contractors profit is taken at the rate of

- A:-1%
 - B:-5%
 - C:-10%
 - D:-20%
- Correct Answer:- Option-C

Question24:-One cubic metre of cement concrete (1:2:4) is to be mixed by volume .Number of cement bags required approximately will be

- A:-6
 - B:-8
 - C:-3
 - D:-4
- Correct Answer:- Option-A

Question25:-The thickness of plastering to masonry wall is usually

- A:-6 mm
 - B:-30mm
 - C:-22mm
 - D:-12mm
- Correct Answer:- Option-D

Question26:-In a detailed estimate the provision for contingencies is,usually

- A:-1%
 - B:-3% to 5%
 - C:-10%
 - D:-12% to 50%
- Correct Answer:- Option-B

Question27:-Original cost of property minus depreciation is

- A:-book value
 - B:-salvage value
 - C:-capital value
 - D:-obsolescence value
- Correct Answer:- Option-A

Question28:-while submitting a tender the contractor is required to deposit some amount with the department, as guarantee of the tender known as

- A:-bank guarantee
- B:-caution money
- C:-security deposit

D:-earnest money

Correct Answer:- Option-D

Question29:-For a comfortable ascent of stairway the number of steps in a flight should be restricted to a maximum of

A:-10

B:-12

C:-16

D:-20

Correct Answer:- Option-B

Question30:-Construction of temporary structure to support an unsafe structure is known as

A:-Shoring

B:-underpinning

C:-scaffolding

D:-Propping

Correct Answer:- Option-A

Question31:-Which of the following is not an excavating equipment

A:-Power shovel

B:-Scraper

C:-Drag line

D:-Hoe

Correct Answer:- Option-B

Question32:-An Ideal flow of any fluid must fulfil the

A:-Newton's Law of Viscosity

B:-Newton's Law of Motion

C:-Boundary layer Theory

D:-Continuity Equation

Correct Answer:- Option-D

Question33:-A cubical tank is filled with water. If side of tank is 1m ,pressure on the base of the tank will be

A:-10 000 kg

B:-5 000 kg

C:-1000 kg

D:-4 000 kg

Correct Answer:- Option-C

Question34:-The buoyancy depends upon the

A:-The pressure with which the liquid is displaced

B:-weight of the liquid displaced

C:-viscosity of the liquid

D:-compressibility of the liquid

Correct Answer:- Option-B

Question35:-block of wood 2m long, 2m wide and 1m deep is floating horizontally in water. If density of wood is 800 kg/m³ ,then the volume of water displaced will be

A:-3.2 cum

B:-2.6 cum

C:-2 cum

D:-6 cum

Correct Answer:- Option-A

Question36:-The flow in a pipe or channel is said to be uniform when

A:-The liquid particles at all sections have the same velocities

B:-The liquid particles at different sections have different velocities

C:-the quantity of liquid flowing per second is constant

D:-each liquid particles has a definite path

Correct Answer:- Option-A

Question37:-Flow in a pipe is laminar if the Reynold's number is

A:-equal to 10 000

B:-Between 4000 and 6000

C:-between 2000 and 4000

D:-less than 2000

Correct Answer:- Option-D

Question38:-Two pipe systems in series are said to be equivalent when

A:-the average diameter in both systems is same

- B:-the average friction factor in both the system is same
 - C:-the total length of the pipes is the same in both the systems
 - D:-the discharge under the same head is same in both the systems
- Correct Answer:- Option-D

Question39:-In open channel water flows under

- A:-force of gravity
- B:-atmospheric pressure
- C:-hydrostatic pressure
- D:-mechanical pressure

Correct Answer:- Option-A

Question40:-weir may be used to measure

- A:-velocity of flow
- B:-pressure
- C:-discharge in a river or channel
- D:-kinetic energy

Correct Answer:- Option-C

Question41:-The direction of flow of liquid in a propeller pump impeller is in

- A:-outward radial direction
- B:-axial direction
- C:-inward radial direction
- D:-the direction tangential to the impeller

Correct Answer:- Option-B

Question42:-The ratio of volume of voids to the total volume of the given soil mass, is known as

- A:-porosity
- B:-void ratio
- C:-specific gravity
- D:-water content

Correct Answer:- Option-A

Question43:-Dry density of soil is

- A:-always greater than the saturated density
- B:-ratio of the weight of soil solids to the volume of solids
- C:-ratio of the weight of soil solids to the total volume
- D:-determined by strength test

Correct Answer:- Option-C

Question44:-The effective size of a soil is

- A:-D10
- B:-D30
- C:-D20
- D:-D40

Correct Answer:- Option-A

Question45:-A soil having uniformity coefficient more than 10 is called

- A:-uniform
- B:-fine
- C:-coarse
- D:-well graded soil

Correct Answer:- Option-D

Question46:-The property of a soil which permits flow of water through its interconnected voids is called

- A:-seepability
- B:-porosity
- C:-permeability
- D:-void ratio

Correct Answer:- Option-C

Question47:-The functional equation for specific gravity G , water content w , void ratio e and degree of saturation S_r is

- A:- $w = S_r G/e$
- B:- $e = S_r w/G$
- C:- $S_r = wG/e$
- D:- $G = S_r w/e$

Correct Answer:- Option-C

Question48:-The law states that in laminar flow in a saturated soil, the velocity is directly proportional to the hydraulic gradient is called

- A:-Reynold's law
- B:-Bligh's law
- C:-Darcy's law
- D:-Lacy's law

Correct Answer:- Option-C

Question49:-The gradual reduction in volume of a soil mass resulting from an increase in and continued application of compressive stress and is due to expulsion of water from the pores is called

- A:-Compaction
- B:-consolidation
- C:-settlement
- D:-depression

Correct Answer:- Option-B

Question50:-The minimum size of plate in plate load test is

- A:-100 mm
- B:-450mm
- C:-200 mm
- D:-300 mm

Correct Answer:- Option-D

Question51:-Bearing capacity should be calculated from the criteria of

- A:-shear only
- B:-settlement only
- C:-both settlement and shear
- D:-cohesion only

Correct Answer:- Option-C

Question52:-Floating foundation is a type of

- A:-well foundation
- B:-pile foundation
- C:-pier foundation
- D:-Raft foundation

Correct Answer:- Option-D

Question53:-A shallow foundation is a foundation that

- A:-has low bearing capacity
- B:-has a depth of embedment less than its width
- C:-is resting on the ground surface
- D:-causes less settlement

Correct Answer:- Option-B

Question54:-Diameter of a circular footing is 3m and side of a square footing is 3m.Both the footings are in the same soil($c-\phi$) at same depth. The ultimate bearing capacity of circular footing is

- A:-less than square footing
- B:-more than square footing
- C:-same as square footing
- D:-not comparable

Correct Answer:- Option-A

Question55:-The energy stored in a material within elastic limit when it is under strain is called

- A:-impact
- B:-shock resistance
- C:-resilience
- D:-elasticity

Correct Answer:- Option-C

Question56:-The property of a material enabling it to resist deformation under stress is called

- A:-toughness
- B:-stiffness
- C:-strength
- D:-brittleness

Correct Answer:- Option-B

Question57:-The rate of change of bending moment is equal to

- A:-shear force
- B:-deflection

C:-slope

D:-axial thrust

Correct Answer:- Option-A

Question58:-The point in a beam where the shear force changes sign is called the point of

A:-maximum BM

B:-zero shear

C:-zero curvature

D:-maximum curvature

Correct Answer:- Option-A

Question59:-For a simply supported beam ,carrying a uniformly distributed load ,the shape of the bending moment diagram will be,

A:-triangular

B:-parabolic

C:-circular

D:-cubical

Correct Answer:- Option-B

Question60:-A cantilever beam of length L,cross-section A is subjected to a total uniformly distributed Load of W and a concentrated load W1 at a distance L1 from free end will have maximum moment of

A:- $(WL/2) + W1 L1$

B:- $(WL^2/2) + W1 L1$

C:- $[W(L-L1)/2] + W1 L1$

D:- $(WL/2) + W1 (L-L1)$

Correct Answer:- Option-D

Question61:-Out of the following mild steel section ,the most economical section is

A:-I section

B:-circular section

C:-rectangular section

D:-channel section

Correct Answer:- Option-A

Question62:-The shear stress on the principal plane is

A:-maximum

B:-minimum

C:-zero

D:-intermediate

Correct Answer:- Option-C

Question63:-If the number of members provided is more than the requirement,then the frame will be classified as

A:-perfect frame

B:-redundant frame

C:-deficient frame Portal frame

D:-Portal frame

Correct Answer:- Option-B

Question64:-The most suitable reason to adopt hollow circular section in place of solid circular shaft is

A:-weight per unit length is less

B:-more strength for same weight per unit length

C:-easy to manufacture

D:-easy to transport

Correct Answer:- Option-B

Question65:-The back sight reading on a BM(200m) was 2.650m.If the inverted staff reading to the bottom of a cantilever porch slab is 0.350m,the RL of the bottom of the slab is

A:-202.300

B:-203.000

C:-2.3000

D:-3.000

Correct Answer:- Option-B

Question66:-A survey in which horizontal and vertical locations are fixed by linear and angular measurements is known as

A:-geodetic survey

B:-cadastral survey

C:-city survey

D:-Topographical survey

Correct Answer:- Option-D

Question67:-The survey in which the curvature of earth is ignored is called

- A:-Plane survey
- B:-geodetic survey
- C:-geological survey
- D:-aerial survey

Correct Answer:- Option-A

Question68:-As per Indian Standard ,the length of one link in 30m chain should be

- A:-0.20m
- B:-0.30m
- C:-0.40m
- D:-0.15m

Correct Answer:- Option-A

Question69:-The error in measured length due to sag of chain or tape is known as

- A:-positive error
- B:-negative error
- C:-compensating error
- D:-instrumental error

Correct Answer:- Option-A

Question70:-The base line is measured with

- A:-metallic tape
- B:-steel tape
- C:-Invar tape
- D:-Chain

Correct Answer:- Option-D

Question71:-If the fore bearing of a line AB is observed to be $12^{\circ}24'$,the back bearing of line AB should be

- A:- $77^{\circ}36'$
- B:- $97^{\circ}36'$
- C:- $167^{\circ}36'$
- D:- $192^{\circ}24'$

Correct Answer:- Option-D

Question72:-At magnetic poles,the dip of magnetic needle is

- A:-0 degree
- B:-45 degree
- C:-90 degree
- D:-120 degree

Correct Answer:- Option-C

Question73:-In levelling the error due to refraction is

- A:-additive
- B:-subtractive
- C:-compensating
- D:-progressive

Correct Answer:- Option-C

Question74:-Closed contours with higher values inside represents

- A:-depression
- B:-Hill
- C:-Plane surface
- D:-pond

Correct Answer:- Option-B

Question75:-When the bubble of the level tube of a level is central

- A:-line of sight is horizontal
- B:-line of collimation is horizontal
- C:-axis of the telescope is horizontal
- D:-Geometrical axis of the telescope is horizontal

Correct Answer:- Option-A

Question76:-The process of turning the telescope about the vertical axis in a horizontal plane is known as

- A:-Reversing
- B:-transiting
- C:-plunging
- D:-swinging

Correct Answer:- Option-D

Question77:-The hinged end of a propped cantilever of span L settles by an amount δ , then the rotation of the hinged end will be

- A:- δ/L
- B:- $2\delta/L$
- C:- $3\delta/2L$
- D:- $4\delta/3L$

Correct Answer:- Option-C

Question78:-Two beams carrying identical loads, simply supported, are having same depth but beam A has double the width as compared that of beam B. The ratio of the strength of beam A to that of beam B is

- A:- $1/2$
- B:- $1/4$
- C:-2
- D:-4

Correct Answer:- Option-C

Question79:-Deflection can be controlled by using the appropriate

- A:-aspect ratio
- B:-modular ratio
- C:-span/depth ratio
- D:-water cement ratio

Correct Answer:- Option-C

Question80:-In a load-balanced prestressed concrete beam under self load ,the cross-section is subjected to

- A:-axial stress
- B:-bending stress
- C:-axial and bending stress
- D:-axial and shear stress

Correct Answer:- Option-D

Question81:-In a cantilever retaining wall of height 'h' the horizontal pressure of earth will act at a distance of

- A:- $h/2$ from top
- B:- $h/4$ from base
- C:- $h/3$ from top
- D:- $h/3$ from base

Correct Answer:- Option-D

Question82:-The minimum size of reinforcement bars in RCC column is

- A:-6mm
- B:-8 mm
- C:-10mm
- D:-12mm

Correct Answer:- Option-D

Question83:-In a cantilever beam tensile reinforcement is provided

- A:-on the top of the beam
- B:-on the bottom of the beam
- C:-in the middle of the beam
- D:-on the top and bottom of the beam

Correct Answer:- Option-A

Question84:-In a doubly reinforced rectangular beam, the allowable stress in compression steel is

- A:-equal to the permissible stress in tension in steel
- B:-more than the permissible stress in tension in steel
- C:-less than the permissible stress in tension in steel
- D:-not related to the permissible concrete compression stress

Correct Answer:- Option-C

Question85:-The section in which concrete is not fully stressed to its permissible value when stress in steel reaches its maximum value, is called

- A:-under reinforced section
- B:-over reinforced section
- C:-doubly reinforced beam
- D:-cantilever beam

Correct Answer:- Option-A

Question86:-A hydrograph is a plot of

- A:-Precipitation against time

- B:-Stream flow against time
 - C:-surface run off against time
 - D:-Recorded run off against time
- Correct Answer:- Option-B

Question87:-The instrument used for measuring wind speed is

- A:-Anemometer
- B:-Rotameter
- C:-Odometer
- D:-Atmometer

Correct Answer:- Option-A

Question88:-The method of moment distribution in structural analysis can be treated as

- A:-Force method
- B:-Displacement method
- C:-Flexibility method
- D:-An exact method

Correct Answer:- Option-B

Question89:-Which one of the following tests is performed in the laboratory to determine the extent weathering of aggregates for road work

- A:-soundness test
- B:-crushing test
- C:-Impact test
- D:-Abrasion test

Correct Answer:- Option-A

Question90:-Which one of the following method is used in the design of rigid pavements

- A:-CBR method
- B:-Group Index method
- C:-westergaards method
- D:-McLeod s method

Correct Answer:- Option-C

Question91:-The Plasticity index of the granular sub base material should be

- A:-les than 6
- B:-grater than 6
- C:-greater than 9
- D:-between 15 and 20

Correct Answer:- Option-A

Question92:-For removal of temporary hardness in water

- A:-Water os filtered
- B:-Water is boiled
- C:-Lime is added
- D:-Chlorination is done

Correct Answer:- Option-B

Question93:-Zeolite is

- A:-A naturally occurring salt
- B:-Hydrated silica
- C:-Hydrated alumina-silicate
- D:-Dehydrate calcium silicate

Correct Answer:- Option-C

Question94:-Coagulants are used when turbidity of water is more than

- A:-50ppm
- B:-60 ppm
- C:-70 ppm
- D:-80 ppm

Correct Answer:- Option-A

Question95:-The Contact pressure distribution under a rigid footing on a cohesionless soil Would be

- A:-Uniform throughout
- B:-Zero at centre and maximum at edges
- C:-Zero at edges and maximum at centre
- D:-Maximum at edges and minimum at centre

Correct Answer:- Option-C

Question96:-The minimum grade of concrete used for RCC work shall be

A:-M10

B:-M15

C:-M20

D:-M30

Correct Answer:- Option-C

Question97:-The stripping time for form work props of beam having span more than 6m is

A:-2 days

B:-7 days

C:-14 days

D:-21 days

Correct Answer:- Option-D

Question98:-In water bound macadam roads, binding material to hold stones is

A:-sand

B:-red earth

C:-cement

D:-quarry dust

Correct Answer:- Option-B

Question99:-Plinth area of a building is

A:-Built up covered area measured at sill level

B:-Built up covered area measured at lintel level

C:-Built up covered area measured at plinth level

D:-carpet area

Correct Answer:- Option-C

Question100:-The maximum horizontal distance between reinforcement in RCC slab in tension as per IS 456 is

A:-Three times the effective depth or 300 mm whichever is less

B:-Three times the effective depth

C:-300mm

D:-150 mm

Correct Answer:- Option-A