

PROVISIONAL ANSWER KEY

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Question1:-Which is the oldest mountain range in India ?

- A:-Himalayas
- B:-Aravalli hills
- C:-Western Ghats
- D:-Eastern Ghats

Correct Answer:- Option-B

Question2:-Which among the following strait separates India and Sri Lanka ?

- A:-Hormuz Strait
- B:-Sunda Strait
- C:-Palk Strait
- D:-Bass Strait

Correct Answer:- Option-C

Question3:-Where does the river Brahmaputra originate from ?

- A:-Angsi glacier
- B:-Gaumukh
- C:-Banderpoonch peaks
- D:-Gurudongmar Lake

Correct Answer:- Option-A

Question4:-Who was the first Vice Chairman of the Planning Commission in India ?

- A:-Ashok Mehta
- B:-C. M. Trivedi
- C:-Dr. Manmohan Singh
- D:-Gulzarilal Nanda

Correct Answer:- Option-D

Question5:-Who introduced the Vernacular Press Act in 1878 ?

- A:-Lord Ripon
- B:-Lord Lytton
- C:-Lord Curzon
- D:-Warren Hastings

Correct Answer:- Option-B

Question6:-Which among the following is called as the Magna Carta of English education in India ?

- A:-Wood's Despatch
- B:-Hunter Education Commission
- C:-Indian University Act of 1904
- D:-Sadler Commission

Correct Answer:- Option-A

Question7:-When was New Delhi officially inaugurated as the Capital of India ?

- A:-1913
- B:-1919
- C:-1931
- D:-1947

Correct Answer:- Option-C

Question8:-Which among the following was the `8^(th)` Five Year Plan period in India ?

- A:-1980-1985
- B:-1985-1990
- C:-1992-1997
- D:-1997-2002

Correct Answer:- Option-C

Question9:-Which river banks in Kerala the famous 'Shivaratri' festival is being conducted ?

- A:-Bharata Puzha
- B:-Periyar
- C:-Pamba
- D:-Chaliyar

Correct Answer:- Option-B

Question10:-Which was the oldest nadu in the Chera kingdom ?

- A:-Eralnad
- B:-Venpolinad
- C:-Vlluvanad
- D:-Kolathunad

Correct Answer:- Option-D

Question11:-Who was the editor of journal 'Abhinava Keralam' ?

- A:-Shree Narayana Guru
- B:-Vagbhatananda
- C:-Vakkom Moualavi
- D:-Chattampi Swamikal

Correct Answer:- Option-B

Question12:-When was Pandit K. P. Karuppan nominated as the member in the Cochin Legislative Council ?

- A:-1923
- B:-1925
- C:-1927
- D:-1934

Correct Answer:- Option-A

Question13:-Who published the book called 'Treatment of Thiyyas in Travancore' ?

- A:-Kumaranasan
- B:-Brahmananda Shivayogi
- C:-Dr. Palpu
- D:-Ayya Vaikundar

Correct Answer:- Option-C

Question14:-When did Shree Narayana Guru start the 'Advaita Ashram' at Aluva ?

- A:-1903
- B:-1906
- C:-1911
- D:-1913

Correct Answer:- Option-D

Question15:-Who founded the religious congregation for men, called as Carmelites of Mary Immaculate ?

- A:-Pampadi John Joseph
- B:-Poyikayi Yohannan
- C:-Kuriakose Elias Chavara
- D:-Paremmakkal Thoma Kathanar

Correct Answer:- Option-C

Question16:-Who wrote the famous work Kandal Kadukalkkidayil Ente Jeevitham ?

- A:-Dr. Jafer Palot
- B:-Kallen Pokkudan
- C:-Dr. Khaleel Chovva
- D:-Plavu Vijayan

Correct Answer:- Option-B

Question17:-Who was the recipient of Vallathol Award for the year 2015 ?

- A:-Anand
- B:-Perumbadav Sreedharan
- C:-Sreekumaran Thampi
- D:-C. Radha Krishnan

Correct Answer:- Option-A

Question18:-Who was the champion of Australian Open for Men's single in 2016 ?

- A:-Andy Murray
- B:-Novak Djokovic
- C:-Roger Federer
- D:-Rafael Nadal

Correct Answer:- Option-B

Question19:-What is the chronological order of Ronald Trump among the Presidents of America ?

- A:-43
- B:-44
- C:-45
- D:-46

Correct Answer:- Option-C

Question20:-Who is the oldest woman who swims across the English Channel ?

- A:-Linda Ashmore
- B:-Samantha Druce
- C:-Arati Saha
- D:-Rashmi Sharma

Correct Answer:- Option-A

Question21:-The quantity of cement in 1 : 2 : 4 mix of 1m^3 concrete is about

- A:-254 kg
- B:-343 kg
- C:-542 kg
- D:-154 kg

Correct Answer:- Option-B

Question22:-Permutit method is employed for removing

- A:-Floating solids
- B:-Colloidal solids
- C:-Hardness
- D:-Microorganisms

Correct Answer:- Option-C

Question23:-If a material is incompressible, its bulk modulus is

- A:-Zero
- B:-One
- C:-0.3
- D:-Infinite

Correct Answer:- Option-D

Question24:-A line of level was run from a bench mark no. 1 of RL 100.05 to a bench mark no. 2 of RL 101.70. If the sum of back sights is 2.01 and that of foresight is 0.40, the closing error of leveling work is

- A:-- 0.06 m
- B:-- 0.05 m
- C:-- 0.07 m
- D:-- 0.04 m

Correct Answer:- Option-D

Question25:-The wastewater treatment initiated by symbiotic relationship between algae and bacteria is

- A:-Activated sludge process
- B:-Oxidation ditch
- C:-Oxidation pond
- D:-Trickling filter

Correct Answer:- Option-C

Question26:-The maximum crushing value for aggregate used for wearing surfaces such as roads and runways is

- A:-45
- B:-50
- C:-25
- D:-30

Correct Answer:- Option-D

Question27:-Maximum daily demand at a water purification plant is 12 Million litres/day. If the detention time is 6 hrs. and velocity of flow is 0.2 m/minute, the capacity of the tank is

- A:-72 m^3
- B:-300 m^3
- C:-720 m^3
- D:-3000 m^3

Correct Answer:- Option-D

Question28:-The number of independent elastic constants for a linear elastic isotropic and homogeneous material is

- A:-2
- B:-4

C:-3

D:-1

Correct Answer:- Option-A

Question29:-Fine aggregates are not suitable for RCC work if they belong to

A:-Zone 1

B:-Zone 2

C:-Zone 3

D:-Zone 4

Correct Answer:- Option-D

Question30:-The stiffness matrix of a beam element is given by $\frac{(2EI)}{(L)} \begin{bmatrix} 2,1 \\ 1,2 \end{bmatrix}$. Then flexibility matrix is

A:- $\frac{(L)}{(6EI)} \begin{bmatrix} 2,-1 \\ -1,2 \end{bmatrix}$

B:- $\frac{(L)}{(2EI)} \begin{bmatrix} 2,1 \\ 1,2 \end{bmatrix}$

C:- $\frac{(L)}{(6EI)} \begin{bmatrix} 1,-2 \\ -2,1 \end{bmatrix}$

D:- $\frac{(L)}{(5EI)} \begin{bmatrix} 2,-1 \\ -1,2 \end{bmatrix}$

Correct Answer:- Option-A

Question31:-Allowable shear stress in an unstiffened web of a steel beam of grade 250 N/mm²

A:-250 N/mm²

B:-100 N/mm²

C:-165 N/mm²

D:-150 N/mm²

Correct Answer:- Option-B

Question32:-The plastic modulus of a section is $4.8 \times 10^{-4} \text{ m}^3$. The shape factor is 1.2. The plastic moment capacity of the section is 120 KNm. The yield stress of the material is

A:-100 MPa

B:-240 MPa

C:-250 MPa

D:-300 MPa

Correct Answer:- Option-C

Question33:-The effective length of a compression member held in position and restrained in direction at both ends in terms of actual length 'L' is

A:-0.8 L

B:-0.65 L

C:-L

D:-1.5 L

Correct Answer:- Option-B

Question34:-The efficiency of sedimentation tank for a given discharge can be increased by

A:-increasing surface area of tank

B:-decreasing depth of tank

C:-increasing depth of tank

D:-decreasing surface area of tank

Correct Answer:- Option-A

Question35:-The type of boring/drilling used in site exploration of rock formations is

A:-Auger boring

B:-Wash boring

C:-Percussion boring

D:-Rotary boring

Correct Answer:- Option-C

Question36:-The most commonly used disinfectant in public distribution systems in India is

A:-Alum

B:-Lime

C:-Chlorine

D:-Potassium permanganate

Correct Answer:- Option-C

Question37:-The permissible limit for iron in drinking water according to latest Indian standard (IS 10500, 2012) is

A:-1 mg/L

B:-0.3 mg/L

C:-0.6 mg/L

D:-0.5 mg/L

Correct Answer:- Option-B

Question38:-The relationship between modulus of elasticity 'E' and modulus of rigidity 'N' in terms of Poisson's ration μ is

A:- $E = 2N (1 + \mu)$

B:- $E = 2N (1 - \mu)$

C:- $E = 2N (1 + 2\mu)$

D:- $E = 2N (1 - 2\mu)$

Correct Answer:- Option-A

Question39:-The treatment method to remove floating impurities in water is

A:-Sedimentation

B:-Aeration

C:-Coagulation

D:-Screening

Correct Answer:- Option-D

Question40:-Vee-Bee test is used to find the

A:-Crushing value

B:-Water absorption

C:-Workability

D:-Soundness

Correct Answer:- Option-C

Question41:-The method of plane tabling used for establishing the instrument stations only is

A:-Radiation

B:-Resection

C:-Traversing

D:-Triangulation

Correct Answer:- Option-B

Question42:-Before testing setting time of cement, one should test for

A:-Soundness

B:-Strength

C:-Consistency

D:-Fineness

Correct Answer:- Option-C

Question43:-The split tensile strength of concrete, when performed on a concrete cylinder of Diameter 'D', Length 'L' and ultimate load 'P' is

A:- $\frac{P}{\pi DL}$

B:- $\frac{2P}{\pi DL}$

C:- $\frac{4P}{\pi DL}$

D:- $\frac{2PD}{\pi L}$

Correct Answer:- Option-B

Question44:-If the porosity of soil is 0.5, then its void ratio is

A:-0.5

B:-1

C:-1.5

D:-0.3

Correct Answer:- Option-B

Question45:-The maximum deflection of a simply supported beam subjected to a concentrated load at the midpoint is (W = Load ; L = Span ; EI = Flexural rigidity).

A:- $\frac{WL^3}{3EI}$

B:- $\frac{WL^3}{8EI}$

C:- $\frac{WL^3}{48EI}$

D:- $\frac{5WL^3}{384EI}$

Correct Answer:- Option-C

Question46:-For a cohesionless soil in its densest state the density index becomes

A:-One

B:-Zero

C:-More than 1

D:-Less than 1

Correct Answer:- Option-A

Question47:-The coefficient of permeability in cm/sec when effective size of soil is 0.1 cm is

A:-100

B:-10

C:-0.1

D:-1

Correct Answer:- Option-D

Question48:-Aquifer in which water table serves as the upper zone of saturation is

A:-Non artesian aquifer

B:-Artesian aquifer

C:-Confined aquifer

D:-Aquifuge

Correct Answer:- Option-A

Question49:-Piles used to protect water front structures against impact from floating bodies are

A:-Anchor piles

B:-Fender piles

C:-Sheet piles

D:-Batter piles

Correct Answer:- Option-B

Question50:-The seepage velocity (V_a) is connected to discharge velocity (V) and porosity (n) by

A:- $V_a = V/n$

B:- $V_a = V.n$

C:- $V_a = \frac{V}{n(1-n)}$

D:- $V_a = \frac{V}{n(1+n)}$

Correct Answer:- Option-A

Question51:-A discrete particle undergoing plain sedimentation in a settling tank of length L , Breadth B , and Depth D will be captured in the tank with 100% efficiency, if the settling velocity (V_s) $\geq \frac{Q}{LB}$ (Q =discharge in the tank).

A:- $V_s > \frac{Q}{LB}$

B:- $V_s < \frac{Q}{LB}$

C:- $V_s > \frac{Q}{BD}$

D:- $V_s < \frac{Q}{BD}$

Correct Answer:- Option-A

Question52:-The coagulant used for treating boiler feed water is

A:-Alum

B:-Sodium aluminate

C:-Chlorinated Copperas

D:-Copperas

Correct Answer:- Option-B

Question53:-Which property of the aggregate is found by impact test ?

A:-Toughness

B:-Hardness

C:-Endurance

D:-Fatigue

Correct Answer:- Option-A

Question54:-The permissible limit of hardness for drinking water according to IS 10500, 2012 is

A:-200 mg/L

B:-300 mg/L

C:-600 mg/L

D:-400 mg/L

Correct Answer:- Option-C

Question55:-The effective pressure at any plane in a soil mass is equal to

A:-Total vertical pressure

B:-Neutral pressure

C:-Neutral pressure minus pore pressure

D:-Total vertical pressure minus pore pressure

Correct Answer:- Option-D

Question56:-A 20 m chain was found to be 0.02 m too long after chaining 100 m. It was found to be 0.04 m too long after chaining 600 m. If the chain was correct before commencement of work then the true distance is

A:-600.8 m

B:-600.4 m

C:-600.6 m

D:-600.3 m

Correct Answer:- Option-A

Question57:-If the whole circle bearing is $132^{\circ}12'$ its quadrantal bearing is

- A:-N $47^{\circ} 48'$ E
- B:-N $47^{\circ} 48'$ W
- C:-S $47^{\circ} 48'$ W
- D:-S $47^{\circ} 48'$ E

Correct Answer:- Option-D

Question58:-The magnetic bearing of a line AB is $130^{\circ} 40'$. What is the true bearing if magnetic declination is $10^{\circ} 15'$ W

- A:- $120^{\circ} 25'$
- B:- $140^{\circ} 55'$
- C:- $59^{\circ} 45'$
- D:- $49^{\circ} 20'$

Correct Answer:- Option-A

Question59:-The stress below which a material has a high probability of not failing under reversal of stress is known as

- A:-Tolerance limit
- B:-Elastic limit
- C:-Proportional limit
- D:-Endurance limit

Correct Answer:- Option-D

Question60:-The bearing of line AB is $152^{\circ} 20'$. the angle ABC is $124^{\circ} 38'$. Then the bearing of BC is

- A:- $276^{\circ} 58'$
- B:- $96^{\circ} 58'$
- C:- $176^{\circ} 58'$
- D:- $356^{\circ} 58'$

Correct Answer:- Option-B

Question61:-A soil has a porosity of 40%. The specific gravity is 2.70. Its dry density is (Take unit weight of water 9.81 KN/m^3)

- A:- 15.01 KN/m^3
- B:- 16.50 KN/m^3
- C:- 15.89 KN/m^3
- D:- 18.35 KN/m^3

Correct Answer:- Option-C

Question62:-The highway research board classification of soil is based on

- A:-Liquid limit and plasticity characteristics
- B:-Particle size composition and plasticity characteristics
- C:-Shrinkage limit and plasticity characteristics
- D:-Flow and plasticity characteristics

Correct Answer:- Option-B

Question63:-If the normal cross section 'A' of a member is subjected to tensile force 'P' the resulting normal stress on an inclined plane at an angle ' θ ' to transverse plane will be

- A:- $P/A \sin^2 \theta$
- B:- $P/A \cos^2 \theta$
- C:- $(P)/(2A) \sin^2 \theta$
- D:- $(P)/(2A) \cos^2 \theta$

Correct Answer:- Option-B

Question64:-The maximum value of Poisson's ratio for an elastic material is

- A:-0.25
- B:-0.50
- C:-0.75
- D:-1.0

Correct Answer:- Option-B

Question65:-The shear stress on principal plane is

- A:-Maximum
- B:-Zero
- C:-Minimum
- D:-Depends on angle of inclination

Correct Answer:- Option-B

Question66:-If the reduced level of floor is 100 and staff reading on the floor is 1.595 and the reading on the staff held upside down against the underside of tee-beam is 3.85, the height of beam above floor is

- A:-5.445 m
- B:-4.645 m

C:-4.565 m

D:-5.605 m

Correct Answer:- Option-A

Question67:-Most common material used as vehicle of a paint is

A:-White lead

B:-Titanium white

C:-Linseed oil

D:-Litharge

Correct Answer:- Option-C

Question68:-Ringlemann chart is used for measuring

A:-Carbon monoxide

B:-Aerosols

C:-Smoke density

D:-Mist

Correct Answer:- Option-C

Question69:-If the percapita water supply is 180 litres/day, the amount of sewage flow as per Indian condition is

A:-180 litres/day

B:-100 litres/day

C:-200 litres/day

D:-144 litres/day

Correct Answer:- Option-D

Question70:-Minimum crushing strength of brick used in construction is

A:-10 kg/cm²

B:-20 kg/cm²

C:-25 kg/cm²

D:-35 kg/cm²

Correct Answer:- Option-D

Question71:-The ingredient that imparts quick setting property to cement is

A:-Alumina

B:-Silica

C:-Gypsum

D:-Lime

Correct Answer:- Option-A

Question72:-If t_o is optimistic time, t_p is pessimistic time t_n is most likely time then probabilistic time t_m for completion of an activity is given by

A:- $(t_o + t_p + t_n) / (3)$

B:- $(t_o + 2t_p + t_n) / (4)$

C:- $(t_o + 4t_p + t_n) / (5)$

D:- $(t_o + t_p + 4t_n) / (6)$

Correct Answer:- Option-D

Question73:-Slow sand filters can remove bacteria from rain water to an extent of

A:-60%

B:-70%

C:-99%

D:-85%

Correct Answer:- Option-C

Question74:-Horizontal tunnels constructed at shallow depth along the bank of a river to intercept ground water table are called

A:-Springs

B:-Infiltration gallery

C:-Infiltration wells

D:-Intake wells

Correct Answer:- Option-B

Question75:-The type of settling where particles coalesce and thereby increase in mass is

A:-Discrete settling

B:-Hindered settling

C:-Flocculant settling

D:-Compression settling

Correct Answer:- Option-C

Question76:-Chlorine usage in the treatment of $20,000 \text{ m}^3$ of water is 8 kg in a day. Residual chlorine after 10 minutes contact time is 0.2 mg/L. The chlorine demand is

- A:-0.4 mg/L
- B:-0.2 mg/L
- C:-0.3 mg/L
- D:-0.6 mg/L

Correct Answer:- Option-B

Question77:-Peak drainage discharge is obtained when the duration of a rainfall is equal to

- A:-Inlet flow time
- B:-Gutter flow time
- C:-Channel flow time
- D:-Time of concentration

Correct Answer:- Option-D

Question78:-The ratio of peak sewage flow to average flow is

- A:-1.8
- B:-1.5
- C:-3
- D:-2

Correct Answer:- Option-C

Question79:-If the runoff from a catchment is 800 m^3 and the precipitation volume is 3200 m^3 then the impervious factor for the catchment is

- A:-4
- B:-0.25
- C:-0.5
- D:-0.4

Correct Answer:- Option-B

Question80:-The sensitiveness of spirit level if the bubble moves through 4 mm for a change of inclination of 40 seconds is

- A:-0.13 mm
- B:-10 mm
- C:-160 mm
- D:-0.1 mm

Correct Answer:- Option-D

Question81:-For a uniformly graded soil, coefficient of curvature is

- A:-Zero
- B:-0.5
- C:-4
- D:-1

Correct Answer:- Option-D

Question82:-A body is acted upon by a set of mutually perpendicular shear stresses, the diagonal planes are likely to have

- A:-Tension and compression
- B:-Tension only
- C:-Compression only
- D:-Shear only

Correct Answer:- Option-A

Question83:-In an elastic material the stress strain relation is always

- A:-Linear
- B:-Non-linear
- C:-Linear or non-linear
- D:-Parabolic

Correct Answer:- Option-C

Question84:-A cylindrical shell is 3 m long and is having 1 m internal diameter and 15 mm thickness. If it is subjected to an internal fluid pressure of 1.5 N/mm^2 then hoop stress is

- A:-25 N/mm^2
- B:-50 N/mm^2
- C:-100 N/mm^2
- D:-125 N/mm^2

Correct Answer:- Option-B

Question85:-Factor of safety for steel is generally taken as

- A:-3
- B:-1.5

C:-1.85

D:-4

Correct Answer:- Option-C

Question86:-The maximum shear stress for a rectangular section of width b and depth d subjected to shearing force F is

A:- $\frac{F}{bd}$

B:- $\frac{4}{3} \frac{F}{bd}$

C:- $2 \frac{F}{bd}$

D:- $1.5 \frac{F}{bd}$

Correct Answer:- Option-D

Question87:-The percentage reduction of total live load for first storey below the top most storey may be taken as

A:-Nil

B:-20%

C:-30%

D:-10%

Correct Answer:- Option-D

Question88:-The strengthening of foundation of an existing building having shallow footings when a building with a deep foundation has to be constructed adjoining to it

A:-Under pinning

B:-Shoring

C:-Pitting

D:-Raking

Correct Answer:- Option-A

Question89:-The uppermost or central voussoir of an arch is

A:-Jamb

B:-Soffit

C:-Key

D:-Impost

Correct Answer:- Option-C

Question90:-Vertical window which is built on a sloping surface of roof is

A:-Bay window

B:-Dormer window

C:-Gable window

D:-Clerestorey window

Correct Answer:- Option-B

Question91:-The king post and queen post of a truss roof is subjected to

A:-Compressive stress

B:-Transverse stress

C:-Tensile stress

D:-Either compressive or tensile

Correct Answer:- Option-C

Question92:-Carbonate and non-carbonate hardness can be removed by

A:-Lime

B:-Heating

C:-Lime and sodium carbonate

D:-Sodium Aluminate

Correct Answer:- Option-C

Question93:-The rate of filtration for slow sand filter is about`

A:-100-200 L/hr/`m²`

B:-2000-4000 L/hr/`m²`

C:-5-20 L/hr/`m²`

D:-1-2 L/hr/`m²`

Correct Answer:- Option-A

Question94:-Nalgonda technique is used for the removal of

A:-Iron

B:-Sodium

C:-Potassium

D:-Fluoride

Correct Answer:- Option-D

Question95:-The amount of free residual chlorine in treated water should be

A:-0.05 –2 mg/L

B:-0.2 –1 mg/L

C:-1.2 –1.5 mg/L

D:-0.1 –0.5 mg/L

Correct Answer:- Option-B

Question96:-The indicator organism for finding the microbiological quality of water is

A:-Pseudomonas

B:-Staphylococcus

C:-Coliforms

D:-Micro algae

Correct Answer:- Option-C

Question97:-Gaseous pollutant responsible for lung cancer is

A:-`CO_2`

B:-CO

C:-`NO_x`

D:-`SO_2`

Correct Answer:- Option-B

Question98:-Winkler's method is used for the determination of

A:-Chlorine

B:-Chloride

C:-Hardness

D:-Dissolved oxygen

Correct Answer:- Option-D

Question99:-If soil is dried beyond its shrinkage limit it will show

A:-Increase in volume

B:-Decrease in volume

C:-Non volume change

D:-Sudden decrease in volume

Correct Answer:- Option-C

Question100:-A biological treatment process where suspended growth of microorganism is formed is

A:-Trickling filter

B:-Aerated lagoon

C:-Oxidation pond

D:-Activated sludge process

Correct Answer:- Option-D