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10 AUGUST 2021

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 **DURATION**
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29 JULY 2021

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TILL THE EXAM

DURATION
400+ HOURS

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Q : 1) In Engineering projects on large scale such as bridges dam, highway _____ surveying used. For establishing control point for plane survey _____ surveying is carried out by depth of national survey of India.

A : Geodetic and plane surveying

B : Plane surveying & Geodetic surveying

C : Hydrographic and preliminary surveying

D : None of these

Q : 2) Difference in length of an arc and its subtended chord on earth's surface for a distance of 18.2 km is-

A : 10 mm

B : 15 mm

C : 22 mm

D : 100 mm

Q : 3) What is definition of least count δ for vernier?

A : IS equal to difference in length of one division of the vernier scale and one division of main scale.

B : IS equal to difference in length of one division of the main scale and one division of vernier scale

C : Minimum of a & b

D : None of these

Q : 4) _____ scale is used to measure or constrict angle when a protractor is not available.

A : Diagonal scale

B : Vernier scale

C : Plain scale

D : Chard scale

Q : 5) Determine the number of divisions required on the vernier scale, if it is combined with the main scale of least count 0.5 mm. The least count of the combination required is 0.05 mm for the direct vernier.

A : 0.025

B : 0.1

C : 1

D : 10

Q : 6) $(2n-1)$ division on the main scale are equal to n division on the vernier in

A : Extended vernier

B : Retrograde vernier

C : Double vernier

D : Direct vernier

Q : 7) There are the properties of spherical triangle which of the following is incorrect or not follow these properties?

A : Any angles is less than two right angle or π or 180°

B : The sum of three angles is more than six right angles or 3π or 540° and less than less than two right angle or π or 180°

C : The sum of any two sides is greater than the third

D : None of these

Q : 8) With an increase in the denominator of the representative fraction, the scale of the map will

A : Decrease

B : Either decrease or increase

C : Increase

D : Remain same

Q : 9) What is the common scale adopted in the form of a representative fraction for the forest map?

A : 1/10000

B : 1/100

C : 1/25000

D : 1/1000

Q : 10) Central road research institute established in year

A : 1950

B : 1967

C : 1952

D : 1934

Q : 11) A method usually adopted to contour rough mountainous region is:

A : Tacheometry

B : Chain and level

C : Plane table

D : Chain and compass

Q : 12) _____ Instrument that work on the same principle as optical square which has two reflecting surface with fixed angle 45° .

A : Optical square method

B : Prism square method

C : Both

D : None of these

Q : 13) The limiting length of an offset does not depend upon

A : Accuracy of the work

B : Method of setting out perpendiculars

C : Scale of plotting

D : Indefinite feature to be surveyed

Q : 14) In which of the following types of chain are incorrectly matched.

A : Engineer's chain – 100ft long (100 link)

B : Gunter's chain – 66 ft long (100 link)

C : Revenue chain – 33 ft long (10 link)

D : 1 Mile = 80 × Cruter's chain

Q : 15) Open cross staff & French X staff both are used for set out at right angle which of them is more accurate,

A : Open cross staff

B : French cross staff

C : Both are equally accurate

D : None of the above

Q : 16) The distance between two brass rings in a surveyor's chain is

A : 20 cm

B : 40 cm

C : 75 cm

D : 1 m

Q : 17) The horizontal distance can be found by applying hypotenusal allowance it is the _____ method of chaining on the sloping ground

A : Direct method

B : Stepping method

C : Indirect method

D : Both stepping method & hypotenusal method

Q : 18) _____ is the deviation of the observed value from the most probable value

A : Permissible error

B : Residual error

C : Expected error

D : Safe error

Q : 19) Error due to sag & slope is

A : Compensating error

B : Cumulative error

C : Both

D : None of these

Q : 20) Permissible limits of error in chaining for measurement on rough or hilly ground is _____.

A : 1 : 2000

B : 1 : 1000

C : 1 : 500

D : 1 : 250

Q : 21) In chain survey execution, the first step taken is _____

A : Reference sketches

B : Marking stations

C : Running survey line

D : Reconnaissance

Q : 22) For taking offsets with an optical square in the right hand side of the chain line it is held _____

A : By right hand upside down

B : By left hand upright

C : By right hand upright

D : By left hand upside down

Q : 23) The distance between steps for measuring down hill to obtain better accuracy _____

A : Decreases with decrease of slope

B : Increase with increase of slope

C : Decrease with increase of slope

D : Decrease with decrease of weight of the chain.

Q : 24) If the chain line which runs along N-S direction is horizontal and the ground in E-W direction is sloping, then -

A : It is possible to set offsets correctly on east side

B : It is possible to set offsets correctly on east side

C : It is not possible to set offsets correctly on west side

D : It is possible to set offsets correctly on both sides

Q : 25) These are the properties of steel tape which of the following is incorrect about steel tape.

A : Made up of steel or stainless steel strips

B : Available in length of 1-50 m

C : Width of 6 – 10 mm

D : Steel tapes can be used in ground with vegetation and weeds.

Q : 26) Which one is the CORRECT option for the cumulative errors?

- 1. It decreases with an increased in measurement.**
- 2. It is directly proportional to the length of the line.**
- 3. It may be positive or negative**
- 4. It is inversely proportional to the length of the line.**

A : 1, 3 and 4

B : 1 and 3

C : 2 and 3

D : Only 2

Q : 27) Maximum length of the offset depends upon

- 1. Scale of plotting**
- 2. Possible error in direction and length**
- 3. Accuracy desired**

A : Only 1

B : 2 & 3

C : 1 & 2

D : 1, 2 and 3

Q : 28) Degree of accuracy for pacing (pedometer) is _____

A : $\frac{1}{100}$ — $\frac{1}{200}$

B : $\frac{1}{250}$ — $\frac{1}{1000}$

C : $\frac{1}{2000}$ — $\frac{1}{20,000}$

D : $\frac{1}{20,000}$ — $\frac{1}{1000,000}$

Q : 29) Gunter's chain is _____ m long.

A : 21.12

B : 20.12

C : 22.12

D : 23.12

Q : 30) A 30 m tape was tested before a survey and found to have a length of 29.93 m. If the length of a line measured with this tape is 270 m, find the true length of the line.

A : 272.23 m

B : 273.99 m

C : 269.37 m

D : 274.18 m

Q : 31) When levelling is done at a busy construction site, what does the hand signal “Extension of arm horizontally and moving hand downward?”

A : Move to my left

B : Raise height of peg or staff

C : Lower height of peg or staff

D : Return to me

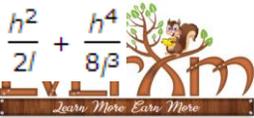
Q : 32) The correction due to wrong alignment of the tape:

A : Depends upon whether the alignment is wrong to the right or left of the line

B : Is always positive

C : Can be positive or negative

D : Is always negative



Q : 33) If h is the difference in level between end points separated by l , then the slope correction is $\frac{h^2}{2l} + \frac{h^4}{8l^3}$. The second term may be neglected if the value of h in a 20 m distance is less than

A : $\frac{1}{2}$ m

B : 1 m

C : 2 m

D : 3 m

Q : 34) Pick up the correct statement from the following.

A : The eyepiece plays no part in defining the line of sight

B : The diaphragm plays no part in defining the line of sight

C : The optical centre of the objective plays no part in defining the line of sight

D : None of these

Q : 35) The radius of curvature of the arc of the bubble tube is generally kept

A : 10 m

B : 25 m

C : 50 m

D : 100 m

Q : 36) Pick up the correct statement from the following:

A : The tangent screw enables to give small movement under conditions of smooth and positive control

B : Standing on the tripod is the levelling head or trib arch

C : The levelling screws arch are used to tilt instrument so that its rotation axis is truly vertical

D : All the above

Q : 37) One of the Lehmann's rules of plane tabling, is

A : Location of the instrument station is always distant from each of the three rays from the known points in proportion to their distances

B : When looking in the direction of each of the given points, the instrument station will be on the right side of one and left side of the other ray

C : When the instrument station is outside the circumscribing circle its location is always on the opposite side of the ray to the most distant point as the inter-section of the other two rays

D : None of these

Q : 38) Closed contours of decreasing values towards their centre, represent

A : A hill

B : A depression

C : A saddle or pass

D : A river bed

Q : 39) If a 30 m chain diverges through a perpendicular distance d from its correct alignment, the error in length, is

A : $\frac{d^2}{60}$ m

B : $\frac{d^2}{30}$ m

C : $\frac{d}{30}$ m

D : $\frac{d}{20}$ m

Q : 40) The 'fix' of a plane table station with three known points, is bad if the plane table station lies

A : In the great triangle

B : Outside the great triangle

C : On the circumference of the circumscribing circle

D : None of these

Q : 41) In quadrantal bearing system, back bearing of a line may be obtained from its forward bearing, by

A : Adding 180° , if the given bearing is less than 180°

B : Subtracting 180° , if the given bearing, is more than 180°

C : Changing the cardinal points, i.e. substituting N for S and E for W and vice-versa

D : None of these

Q : 42) Pick up the correct statement from the following:

A : The theodolite in which telescope can be rotated in vertical plane is called a transit

B : When the vertical circle is to the left of the telescope during observation, it is called to be in left face

C : When the vertical circle is to the right of the telescope during observation, it is called to be in right face

D : All the above

Q : 43) The most reliable method of plotting a theodolite traverse, is

A : By consecutive co-ordinates of each station

B : By independent co-ordinates of each station

C : By plotting included angles and scaling off each traverse leg

D : By the tangent method of plotting

Q : 44) If the radius of a simple curve is R , the length of the chord for calculating offsets by the method of chords produced, should not exceed.

A : $R/10$

B : $R/15$

C : $R/20$

D : $R/25$

Q : 45) The sensitiveness of a level tube decreases if

A : Radius of curvature of its inner surface is increased

B : Diameter of the tube bubble is increased

C : Length of the vapour bubble is increased

D : Both viscosity and surface tension are increased.

Q : 46) Pantagraph is used for

A : Measuring distances

B : Measuring areas

C : Enlarging or reducing planes

D : Setting out right angles

Q : 47) If the angular measurements of a traverse are more precise than its linear measurements, balancing of the traverse, is done by

A : Bowditch's rule

B : Transit rule

C : Empirical rule

D : All of the above

Q : 48) If the rate of gain of radial acceleration is 0.3 m per sec^3 and full centrifugal ratio is developed. On the curve the ratio of the length of the transition curve of same radius on road and railway, is

A : 2.828

B : 3.828

C : 1.828

D : 0.828

Q : 49) Let angular value of one graduation of a tube of length x be φ seconds and R be the radius of its internal curved surface, then

$$\text{A : } \varphi = \frac{X}{206265 R}$$

$$\text{B : } \varphi = \frac{R}{206265 X}$$

$$\text{C : } \varphi = \frac{206265}{x.R}$$

$$\text{D : } \varphi = \frac{x.R}{206265}$$

Q : 50) The diaphragm of a stadia theodolite is fitted with two additional

A : Horizontal hairs

B : Vertical hairs

C : Horizontal and two vertical hairs

D : None of these

Q : 51) A tape of length l and weight W kg/m is suspended at its ends with a pull of P kg, the sag correction is

A : $\frac{l^3 W^2}{24p^2}$

B : $\frac{l^2 W^3}{24p^2}$

C : $\frac{l^2 W^2}{24p^3}$

D : $\frac{lW^2}{24P}$

Q : 52) The operation of making the algebraic sum of latitudes and departures of a closed traverse, each equal to zero, is known

A : Balancing the sights

B : Balancing the departures

C : Balancing the latitudes

D : Balancing the traverse

Q : 53) Orientation of a plane table by solving two point problem is only adopted when

A : Saving of time is a main factor

B : Better accuracy is a main factor

C : Given points are inaccessible

D : None of these

Q : 54) The best method of interpolation of contours, is by

A : estimation

B : Graphical means

C : Computation

D : All of these

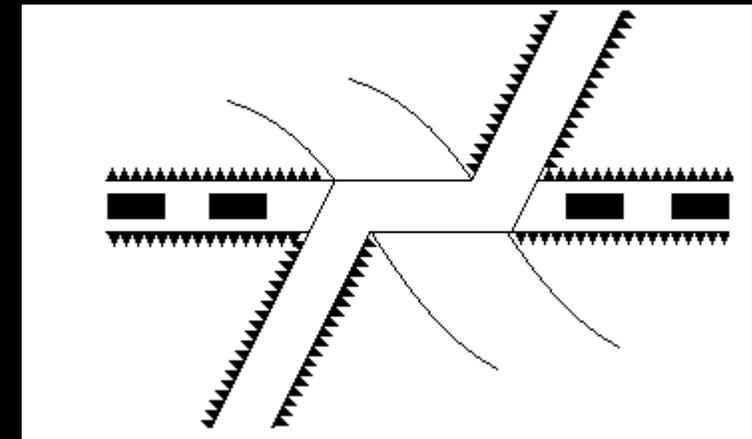
Q : 55) The conventional sign shown in below figure represents a

A : Bridge carrying railway below road

B : Bridge carrying road below railway

C : Bridge carrying road and railway at the same level

D : A level crossing



Q : 56) Measuring with a 30 m chain, 0.01 m too short, introduces

A : Positive compensating error

B : Negative compensating error

C : Positive cumulative error

D : Negative cumulative error

Q : 57) The vertical angle between longitudinal axis of a freely suspended magnetic needle and a horizontal line at its pivot, is known

A : Declination

B : Azimuth

C : Dip

D : Bearing

Q : 58) Cross hairs in surveying telescopes, are fitted

A : In the objective glass

B : At the centre of the telescope

C : At the optical centre of the eye piece

D : In front of the eye piece.

Q : 59) Probable systematic error in precise levelling as recommended by international geodetic association should not exceed

(Where k is in kilometers)

A : $\pm 0.1 \sqrt{k}$ mm

B : $\pm 0.2 \sqrt{k}$ mm

C : $\pm 0.1 \sqrt{k}$

D : $0.2 \sqrt{k}$ mm



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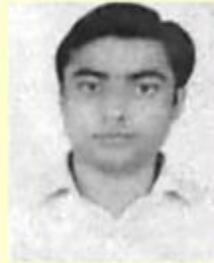
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