

Drawing And Surveying Multiple Choice Questions And Answers

During chaining along a straight line, the leader of the party has 4 arrows in his hand while the follower has 6. Distance of the follower from the starting point is

- a) 4 chains
- b) 6 chains
- c) 120 m
- d) 180m

Ans: b

A metallic tape is made of

- a) steel
- b) invar
- c) linen
- d) cloth and wires

Ans: d

For a well-conditioned triangle, no angle should be less than

- a) 20°
- b) 30°
- c) 45°
- d) 60°

Ans: b

The angle of intersection of the two plane mirrors of an optical square is

- a) 30°
- b) 45°
- c) 60°
- d) 90°

Ans: b

The allowable length of an offset depends upon the

- a) degree of accuracy required
- b) method of setting out the perpendiculars and nature of ground
- c) scale of plotting
- d) all of the above

Ans: d

Which of the following angles can be set out with the help of French cross staff?

- a) 45° only
- b) 90° only
- c) either 45° or 90°
- d) any angle

Ans: c

Which of the following methods of offsets involves less measurement on the ground?

- a) method of perpendicular offsets
- b) method of oblique offsets
- c) method of ties
- d) all involve equal measurement on the ground

Ans: a

The permissible error in chaining for measurement with chain on rough or hilly ground is

- a) 1 in 100
- b) 1 in 250
- c) 1 in 500
- d) 1 in 1000

Ans: b

The correction for sag is

- a) always additive
- b) always subtractive
- c) always zero
- d) sometimes additive and sometimes subtractive

Ans: b

Cross staff is an instrument used for

- a) measuring approximate horizontal angles
- b) setting out right angles
- c) measuring bearings of the lines
- d) none of the above

Ans: b

Normal tension is that pull which

- a) is used at the time of standardising the tape
- b) neutralizes the effect due to pull and sag
- c) makes the correction due to sag equal to zero
- d) makes the correction due to pull equal to zero

Ans: b

Which of the following is not used in measuring perpendicular offsets ?

- a) line ranger
- b) steel tape
- c) optical square
- d) cross staff

Ans: a

If the length of a chain is found to be short on testing, it can be adjusted by

- a) straightening the links
- b) removing one or more small circular rings
- c) closing the joints of the rings if opened out
- d) all of the above

Ans: a

The maximum tolerance in a 20 m chain is

- a) ± 2 mm
- b) ± 3 mm

c) ± 5 mm

d) ± 8 mm

Ans: c

For accurate work, the steel band should always be used in preference to chain because the steel band

a) is lighter than chain

b) is easier to handle

c) is practically inextensible and is not liable to kinks when in use

d) can be easily repaired in the field

Ans: c

The length of a chain is measured from

a) centre of one handle to centre of other handle

b) outside of one handle to outside of other handle

c) outside of one handle to inside of other handle

d) inside of one handle to inside of other handle

Ans: b

Select the incorrect statement.

a) The true meridians at different places are parallel to each other.

b) The true meridian at any place is not variable.

c) The true meridians converge to a point in northern and southern hemispheres.

d) The maps prepared by national survey departments of any country are based on true meridians.

Ans: a

If the true bearing of a line AB is $269^{\circ} 30'$, then the azimuth of the line AB is

a) $0^{\circ} 30'$

b) $89^{\circ} 30'$

c) $90^{\circ} 30'$

d) $269^{\circ} 30'$

Ans: c

In the prismatic compass

- a) the magnetic needle moves with the box
- b) the line of the sight does not move with the box
- c) the magnetic needle and graduated circle do not move with the box
- d) the graduated circle is fixed to the box and the magnetic needle always remains in the N-S direction

Ans: c

For a line AB

- a) the forebearing of AB and back bearing of AB differ by 180°
- b) the forebearing of AB and back bearing of BA differ by 180°
- c) both (a) and (b) are correct.
- d) none is correct

Ans: a

Local attraction in compass surveying may exist due to

- a) incorrect levelling of the magnetic needle
- b) loss of magnetism of the needle
- c) friction of the needle at the pivot
- d) presence of magnetic substances near the instrument

Ans: d

In the quadrantal bearing system, a whole circle bearing of $293^\circ 30'$ can be expressed as

- a) $W23^\circ 30'N$
- b) $N66^\circ 30'W$
- c) $S113^\circ 30'N$
- d) $N23^\circ 30'W$

Ans: b

The prismatic compass and surveyor's compass

- a) give whole circle bearing (WCB) of a line and quadrantal bearing (QB) of a line respectively

- b) both give QB of a line and WCB of a line
- c) both give QB of a line
- d) both give WCB of a line

Ans: a

The horizontal angle between the true meridian and magnetic meridian at a place is called

- a) azimuth
- b) declination
- c) local attraction
- d) magnetic bearing

Ans: b

A negative declination shows that the magnetic meridian is to the

- a) eastern side of the true meridian
- b) western side of the true meridian
- c) southern side of the true meridian
- d) none of the above

Ans: b

If the magnetic bearing of the sun at a place at noon in southern hemisphere is 167° , the magnetic declination at that place is

- a) 77° N
- b) 23° S
- c) 13° E
- d) 13° W

Ans: c

The graduations in prismatic compass

- i) are inverted
- ii) are upright
- iii) run clockwise having 0° at south
- iv) run clockwise having 0° at north

The correct answer is

- a) (i) and (iii)
- b) (i) and (iv)
- c) (ii) and (iii)
- d) (ii) and (iv)

Ans: a

Agate cap is fitted with a

- a) cross staff
- b) level
- c) chain
- d) prismatic compass

Ans: d

The temporary adjustments of a prismatic compass are

- i) Centering
- ii) Levelling
- iii) Focusing the prism

The correct order is

- a) (0, (iii), 00)
- b) (0, (ii), (iii))
- c) (ii), (iii), 0)
- d) (in), (i), (ii)

Ans: b

Theodolite is an instrument used for

- a) tightening the capstan-headed nuts of level tube
- b) measurement of horizontal angles only
- c) measurement of vertical angles only
- d) measurement of both horizontal and vertical angles

Ans: d

The process of turning the telescope about the vertical axis in horizontal plane is known as

- a) transiting
- b) reversing
- c) plunging
- d) swinging

Ans: d

Size of a theodolite is specified by

- a) the length of telescope
- b) the diameter of vertical circle
- c) the diameter of lower plate
- d) the diameter of upper plate

Ans: c

Which of the following is not the function of levelling head ?

- a) to support the main part of the instrument
- b) to attach the theodolite to the tripod
- c) to provide a means for leveling the theodolite
- d) none of the above

Ans: d

If the lower clamp screw is tightened and upper clamp screw is loosened, the theodolite may be rotated

- a) on its outer spindle with a relative motion between the vernier and graduated scale of lower plate
- b) on its outer spindle without a relative motion between the vernier and graduated scale of lower plate
- c) on its inner spindle with a relative motion between the vernier and the graduated scale of lower plate
- d) on its inner spindle without a relative motion between the vernier and the graduated scale of lower plate

Ans: c

A telescope is said to be inverted if its

- a) vertical circle is to its right and the bubble of the telescope is down
- b) vertical circle is to its right and the bubble of the telescope is up
- c) vertical circle is to its left and the bubble of the telescope is down
- d) vertical circle is to its left and the bubble of the telescope is up

Ans: a

The cross hairs in the surveying telescope are placed

- a) midway between eye piece and objective lens
- b) much closer to the eye-piece than to the objective lens
- c) much closer to the objective lens than to the eye piece
- d) anywhere between eye-piece and objective lens

Ans: b

For which of the following permanent adjustments of theodolite, the spire test is used ?

- a) adjustment of plate levels
- b) adjustment of line of sight
- c) adjustment of horizontal axis
- d) adjustment of altitude bubble and vertical index frame

Ans: c

The adjustment of horizontal cross hair is required particularly when the instrument is used for

- a) leveling
- b) prolonging a straight line
- c) measurement of horizontal angles
- d) all of the above

Ans: a

Which of the following errors is not eliminated by the method of repetition of horizontal angle measurement ?

- a) error due to eccentricity of verniers

- b) error due to displacement of station signals
- c) error due to wrong adjustment of line of collimation and trunnion axis
- d) error due to inaccurate graduation

Ans: b

The error due to eccentricity of inner and outer axes can be eliminated by

- a) reading both verniers and taking the mean of the two
- b) taking both face observations and taking the mean of the two
- c) double sighting
- d) taking mean of several readings distributed over different portions of the graduated circle

Ans: a

In the double application of principle of reversion, the apparent error is

- a) equal to true error
- b) half the true error
- c) two times the true error
- d) four times the true error

Ans: d

Which of the following errors can be eliminated by taking mean of both face observations ?

- a) error due to imperfect graduations
- b) error due to eccentricity of verniers
- c) error due to imperfect adjustment of plate levels
- d) error due to line of collimation not being perpendicular to horizontal axis

Ans: d

Which of the following errors cannot be eliminated by taking both face observations ?

- a) error due to horizontal axis not being perpendicular to the vertical axis
- b) index error i.e. error due to imperfect adjustment of the vertical circle vernier
- c) error due to non-parallelism of the axis of telescope level and line of collimation
- d) none of the above

Ans: d

If a tripod settles in the interval that elapses between taking a back sight reading and the following foresight reading, then the elevation of turning point will

- a) increase
- b) decrease
- c) not change
- d) either 'a' or 'b'

Ans: a

If altitude bubble is provided both on index frame as well as on telescope of a theodolite, then the instrument is levelled with reference to

- i) altitude bubble on index frame
 - ii) altitude bubble on index frame if it is to be used as a level
 - iii) altitude bubble on telescope
 - iv) altitude bubble on telescope if it is to be used as a level
- The correct answer is

- a) only (i)
- b) both (i) and (iv)
- c) only (iii)
- d) both (ii) and (iii)

Ans: b

A 'level line' is a

- a) horizontal line
- b) line parallel to the mean spheroidal surface of earth
- c) line passing through the center of cross hairs and the center of eye piece
- d) line passing through the objective lens and the eye-piece of a dumpy or tilting level

Ans: b

The following sights are taken on a "turning point"

- a) foresight only
- b) backsight only
- c) foresight and backsight

d) foresight and intermediate sight

Ans: c

The rise and fall method of levelling provides a complete check on

a) backsight

b) intermediate sight

c) foresight

d) all of the above

Ans: d

If the R.L. of a B.M. is 100.00 m, the back-sight is 1.215 m and the foresight is 1.870 m, the R.L. of the forward station is

a) 99.345 m

b) 100.345 m

c) 100.655m

d) 101.870m

Ans: a

In an internal focussing type of telescope, the lens provided is

a) concave

b) convex

c) plano-convex

d) plano-concave

Ans: a