1.   Mr. W. Simms, the consulting Engineer to the Government of India recommended the gauge for Indian railways

   A.   1.435 m as adopted in England

   B.   1.800 m as per Indian conditions

   C.   1.676 m as a compromise gauge

   D.   1.000 m as a standard gauge

   Answer: Option **C**

---

2.   If absolute levels of rails at the consecutive axles A, B, and C separated by 1.8 metres are 100.505 m, 100.530 m, and 100.525 m respectively, the unevenness of rails, is

   A.   0.065 m

   B.   0.055 m

   C.   0.045 m

   D.   0.035 m

   Answer: Option **A**

---

3.   A CST-9 sleeper consists of

   A.   two inverted triangular pots on either side of rail seat

   B.   a central plate with a projected key and box on the top of plate

   C.   a tie bar and 4 cotters to connect two cast iron plates

   D.   a single two way key provided on the gauge side to hold the rail to sleeper

   E.   all the above.

   Answer: Option **E**

---

4.   Charles Vignoles invented the flat footed rails in

   A.   1814

   B.   1836

   C.   1846

   D.   1856

   E.   1873

   Answer: Option **B**

---

5.   To design a cross-over between parallel tracks, the required components are :

   A.   two switch, points, two acute angle crossings and two check rails

   B.   two switch points, two acute angle crossings and four check rails

   C.   two switch points, two acute angle crossings and six check rails

   D.   none of these.

   Answer: Option **B**

6.   The first Indian railway was laid in

   A.   1775

B.   1804

C.   1825

D.   1853

E.   1876

Answer: Option **D**

---

7.   The weight of the rails depends upon

    A.   gauge of the tracks

    B.   speed of trains

    C.   spacing of sleepers

    D.   nature of traffic

    E.   all the above.

    Answer: Option **E**

---

8.   Pick up the correct statement from the following :

    A.   Rails are directly laid over hard wooden sleepers and fixed with spikes

    B.   Adzing is done on hard wooden sleepers

    C.   Bearing plates are used on soft wooden sleepers

    D.   Chairs are used for bull headed rails

    E.   All the above.

    Answer: Option **E**

---

9.   Pick up the incorrect statement from the following:

    A.   Fish plates fit the underside of the rail head

    B.   Fish plates fit the top of the rail foot

    C.   Fish plates fit the web of the rail section

    D.   Cross sectional area of fish plates, is normally the same as that of the rail section.

    Answer: Option **C**

---

10.   Minimum depth of ballast prescribed of B.G. trunk lines of Indian Railways, is

    A.   20 cm

    B.   15 cm

    C.   25 cm

    D.   30 cm

    E.   35 cm

    Answer: Option **C**

11.   Boxing of ballast is done

    A.   under rails

    B.   at the rails

C. in between two rails

D. in between two sleepers.

Answer: Option **B**

---

12. Best ballast contains stones varying in size from

A. 1.5 cm to 3 cm

B. 2.0 cm to 4 cm

C. 2.0 cm to 5 cm

D. 2.5 cm to 6 cm

Answer: Option **C**

---

13. For holding a rail in position, no chairs are used for

A. flat footed rails

B. bull headed rails

C. double headed rails

D. both (*a*) and (*b*)

Answer: Option **A**

---

14. Distance between the inner rail and check rail provided on sharp curve, is

A. 40 mm

B. 42 mm

C. 44 mm

D. 46 mm

E. 50 mm

Answer: Option **C**

---

15. Coal ash (or cinder) is used in initial stages of a new construction of railway for

A. wooden sleepers

B. steel sleepers

C. cast iron sleepers

D. none of these.

Answer: Option **A**

16. Pot sleepers are in the form of

A. a number of bowls connected together with a tie bar

B. two bowls placed under each rail and connected together with a tie bar

C. two bowls placed under two rails and the one between the rails

D. none of these.

Answer: Option **B**

---

17. In railways a triangle is mainly provided for

A. diverting trains from the main line to branch line

B. crossing over between parallel tracks

C. changing direction of engines through 180°

D. shunting wagons in yards.

Answer: Option **C**

---

18. A kink is made in stock rails, ahead of the toe of switch at a distance of

   A. 10 cm

   B. 15 cm

   C. 20 cm

   D. 30 cm

   Answer: Option **B**

---

19. If *L* is length of a rail and *R* is the radius of a curve, the versine *h* for the curve, is

   A. $a = \dfrac{L}{4R}$

   B. $a = \dfrac{L^2}{4R}$

   C. $h = \dfrac{L^2}{8R}$

   D. $h = \dfrac{L^2}{16R}$

   E. $h = \dfrac{L^2}{6R}$

   Answer: Option **C**

---

20. Rails are bent to correct curvature if the degree of curve, is more than

   A. 1°

   B. 2°

   C. 3°

   D. 4°

   E. 6°

   Answer: Option **D**

21. In India the rails are manufactured by

   A. open hearth process

   B. duplex process

   C. both (*a*) and (*b*)

   D. neither (*a*) nor (*b*)

---

22. Rail section first designed on Indian railways, was

    A. double headed

    B. bull headed

    C. flat footed

    D. (a) and (b) simultaneously

    Answer: Option **A**

---

23. A scissors cross-over consists of

    A. two pairs of points, four acute angle crossings and two obtuse angle crossings

    B. four pairs of points, four acute angle crossings and four obtuse angle crossings

    C. four pairs of points, six acute angle crossings and two obtuse angle crossings

    D. two pairs of points, six acute angle crossings and four obtuse angle crossings.

    Answer: Option **C**

---

24. To prevent percolation of water into formation, moorum is used as a blanket for

    A. black cotton soil

    B. sandy soil

    C. clayey soil

    D. all the above.

    Answer: Option **A**

---

25. Distance between inner faces of the flanges, is kept

    A. equal to the gauge distance

    B. slightly less than the gauge distance

    C. slightly more than the gauge distance

    D. none of these.

    Answer: Option **B**

26. Wooden sleepers used on the girders of bridges, are generally made of

    A. sal

    B. chir

    C. teak

    D. deodar.

    Answer: Option **C**

---

27. If L_1 and L_2 are actual and theoretical lengths of a tongue rail, d is heel divergence and t is thickness of tongue rail at toe, the switch angle α is

    A. $\sin^{-1} \dfrac{d - t}{L_1}$

B. $\tan^{-1} \dfrac{d-t}{L_1}$

C. $\sin^{-1} \dfrac{d-t}{L_2}$

D. $\tan^{-1} \dfrac{d-t}{L_2}$

E. $\cot^{-1} \dfrac{d-t}{L_2}$

Answer: Option **A**

---

28.   If D is distance between centres of two parallel track of gauge G, then, total length of cross-over (from the point of commencement to the point of termination) with an intermediate straight portion and N crossing, is given by

    A. $DN + G\,(N + 1 + N^2)$

    B. $DN + G\,(2N + 1 + N^2)$

    C. $DN + G\,(3N + 1 + N^2)$

    D. $DN + G\,(4N + I + N^2)$

Answer: Option **C**

---

29.   If a 0.7% upgrade meets a 0.65% downgrade at a summit and the permissible rate of change of grade per chain length is 0.10%, the length of the vertical curve, is

    A.   10 chains

    B.   12 chains

    C.   14 chains

    D.   16 chains

Answer: Option **C**

---

30.   Overall depth of a dog spike, is

    A.   120.6 mm

    B.   155.90 mm

    C.   135 mm

    D.   150 mm

    E.   none of these.

Answer: Option **A**

31.   Best wood for wooden sleepers is

    A.   chir

    B.   deodar

    C.   sal

    D.   teak

    E.   shesham.

Answer: Option **D**

32. The rail section which is not used on Indian metre gauge tracks, is

    A. 25 *R*

    B. 30 *R*

    C. 35 *R*

    D. 40 *R*

    Answer: Option **D**

33. Dimensions of a plate girder, are :

    A. 851 mm x 851 mm

    B. 255 mm x 254 mm

    C. 851 mm x 254 mm

    D. 551 mm x 254 mm

    Answer: Option **C**

34. Rail joint supported on a single sleeper, is known

    A. suspended rail joint

    B. bridge rail joint

    C. supported rail joint

    D. square rail joint.

    Answer: Option **C**

35. Maximum wheel base distance provided on Indian B.G. tracks, is

    A. 4.096 m

    B. 5.096 m

    C. 6.096 m

    D. 7.096 m

    E. none of these.

    Answer: Option **C**

36. The tread of wheels is provided an outward slope of

    A. 1 in 10

    B. 1 in 15

    C. 1 in 20

    D. 1 in 25

    E. 1 in 30

    Answer: Option **C**

37. On a straight railway track, absolute levels at point *A* on two rails are 100.550 m and 100.530 m and the absolute levels at point B 100 m apart are 100.585 m and 100.515 m respectively, the value of twist of rails per metre run, is

A. 0.4 mm

B. 0.5 mm

C. 0.7 mm

D. 0.8 mm

E. 1.0 mm

Answer: Option **B**

---

38. Bearing plates are used to fix

A. flat footed rails to the wooden sleepers

B. double headed rails to the wooden sleepers

C. bull headed rails to the wooden sleepers

D. flat footed rails to the cast iron sleepers

E. none of these.

Answer: Option **A**

---

39. A welded rail joint is generally

A. supported on a sleeper

B. supported on a metal plate

C. suspended

D. none of these.

Answer: Option **C**

---

40. Safe speed (*V*) on a curve of radius 970 metres provided with two transition curves on Board Gauge track, is

A. 112 km/hour

B. 122 km/hour

C. 132 km/hour

D. 142 km/hour

Answer: Option **C**

41. Pick up the incorrect statement from the following:

A. Sleepers hold the rails at proper gauge on straights

B. Sleepers provide stability to the permanent way

C. Sleepers act as an elastic cushion between rails and ballast

D. Sleepers transfer load of moving trains to ballast

E. None of the these.

Answer: Option **E**

---

42. If α is switch angle and *R* is radius of the turnout, the length of the tongue rail, is

A. *R* sin α

B. *R* tan α

C.   R sin α/2

   D.   R tan α/2

   E.   R cos α/2

   Answer: Option **D**

---

43.   The quantity of stone ballast required per metre tangent length, is

   A.   1.15 m^3

   B.   1.14 m^3

   C.   1.13 m^3

   D.   1.12 m^3

   E.   1.11 m^3

   Answer: Option **E**

---

44.   The type of switch generally used for B.G. and M.G. tracks, is

   A.   articulated

   B.   undercut

   C.   over riding

   D.   straight cut.

   Answer: Option **C**

---

45.   The difference in the lengths of two diagonals of a rail diamond is

   A. $\dfrac{2G}{\sin a}\,[\cos a/2 + \sin a/2]$

   B. $\dfrac{2G}{\sin a}\,[\cos a/2 - \sin a/2]$

   C. $\dfrac{2G}{\sin a}\,[\sin a/2 - \cos a/2]$

   D. $\dfrac{2G}{\sin a}\,[\tan a/2 - \cot a/2]$

   Answer: Option **A**

46.   For flat bottom sleepers, maximum size of ballast, is

   A.   50 mm

   B.   40 mm

   C.   33 mm

   D.   25 mm

   E.   20 mm

   Answer: Option **A**

---

47.   Coning of wheels

A. prevent lateral movement of wheels

B. provide smooth running of trains

C. avoid excessive wear of inner faces of rail

D. all the above.

Answer: Option **D**

---

48. The sleepers which satisfy the requirements of an ideal sleeper, are

A. cast iron sleepers

B. R.C.C. sleepers

C. steel sleepers

D. wooden sleepers.

Answer: Option **D**

---

49. Arrangement made to divert the trains from one track to another, is known as

A. railway point

B. railway crossing

C. turnout

D. railway junction

E. none of these.

Answer: Option **C**

---

50. At a rail joint, the ends of adjoining rails, are connected with a pair of fish plates and

A. 2 fish bolts

B. 4 fish bolts

C. 6 fish bolts

D. 8 fish bolts

Answer: Option **B**

1. Width of the top portion of a flat footed, rail, is

A. 69.85 mm

B. 63.50 mm

C. 66.77 mm

D. 136.52 mm

E. none of these.

Answer: Option **C**

---

2. For providing the required tilt of rails, adazing of wooden sleepers, is done for

    A. bull headed rails

    B. double headed rails

    C. flat footed rails

    D. any type of rails

    E. none of these.

    Answer: Option **C**

3. The life of a wooden sleeper depends upon

    A. quality of its timber

    B. ability to resist decay

    C. resistance to weathering

    D. all the above.

    Answer: Option **D**

4. The spread between the point and splice rails at a distance of 4.25 m is 50 cm. The size of the crossing is

    A. 1 in 6

    B. 1 in $8\frac{1}{2}$

    C. 1 in 12

    D. 1 in 16

    Answer: Option **B**

5. Minimum packing space provided between two sleepers, is between

    A. 20 to 25 cm

    B. 25 to 30 cm

    C. 30 to 35 cm

    D. 35 to 40 cm

    Answer: Option **C**

6. The overall length of a turn out is the distance between the end of stock rail and

    A. heel of crossing

    B. actual nose of crossing

    C. throat of crossing

    D. toe of crossing.

    Answer: Option **A**

7. According to Railway Board, no diamond crossing should be flatter than

    A. 1 in 6

B. 1 in $8\frac{1}{2}$

C. 1 in 12

D. 1 in 16

Answer: Option **B**

---

8. Coning of wheels is provided

    A. to check lateral movement of wheels

    B. to avoid damage to inner faces of rails

    C. to avoid discomfort to passengers

    D. All the above.

Answer: Option **D**

---

9. A scissors cross over consists of one diamond and

    A. one turn out

    B. two turn outs

    C. three turn outs

    D. four turn outs

    E. no turn out.

Answer: Option **D**

---

10. Pick up the incorrect statement from the following:

    A. Sleepers transfer the load of moving locomotive to the girders of the bridges

    B. Sleepers act as a non-elastic medium between the rails and ballast

    C. Sleepers hold the rails at 1 in 20 tilt inward

    D. Sleepers hold the rails loose on curve.

Answer: Option **B**

11. Heel divergency, the distance between the running faces of stock rail and gauge face of tongue rail, as recommended for Indian B.G. tracks, is

    A. 100 mm

    B. 119 mm

    C. 125 mm

    D. 155 mm

    E. 135 mm

Answer: Option **E**

---

12. Type of switch rails generally adopted for modern track, is

    A. straight switch

    B. curved switch

C.   loose heel switch

D.   bent switch.

Answer: Option **B**

---

13.   If sleeper density is M + 7 for 13 m rails, the minimum depth of ballast under wooden sleepers (25 cm x 13 cm), is

A.   15 cm

B.   20 cm

C.   25 cm

D.   30 cm

E.   36 cm

Answer: Option **B**

---

14.   By interchanging gibs and cotters of a pot sleeper, gauge may be slackened by

A.   1.2 mm

B.   2.2 mm

C.   3.2 mm

D.   4.2 mm

E.   5.0 mm

Answer: Option **C**

---

15.   Composite sleeper index determines

A.   number of sleepers per rail length

B.   suitability of wooden sleepers

C.   permissible stresses in steel sleepers

D.   none of these

Answer: Option **B**

16.   If S is cant deficiency in centimetres and V is maximum permissible speed in km p.h,, the maximum length of transition curves, is

A. $\dfrac{S.V}{13.6}$

B. $\dfrac{S.V}{19.8}$

C. $\dfrac{S.V}{127}$

D. $\dfrac{S.V}{16.8}$

Answer: Option **A**

---

17.   Indian Railways detects the rail flow by

A.   Mitsubish Rail flow dector

B. Soni Rail flow dector

C. Audi-gauge Rail flow detector

D. Kraut Kramer Rail flow detector.

Answer: Option **D**

---

18. The rail section which is not used on Indian Broad Gauge tracks, is

    A. 35 R

    B. 40 R

    C. 45 R

    D. 55 R

Answer: Option **B**

---

19. Ballast packed below and around the sleepers to transfer the load from sleepers to formation, generally consists of

    A. broken stones

    B. gravels

    C. moorum

    D. all the above.

Answer: Option **D**

---

20. A wing rail is renewed or reconditioned if its maximum vertical wear is

    A. 9.5 m

    B. 7.5 m

    C. 5.5 m

    D. 5.0 m

Answer: Option **A**

21. The place where a railway line and a road cross each other at the same level, is known as

    A. cross over

    B. railway junction

    C. road junction

    D. level crossing

    E. none of these.

Answer: Option **D**

---

22. On Indian Railways standard length of rails for B.G. track, is

    A. 33 ft (10.06 m)

    B. 36 ft (10.97 m)

    C. 39 ft (11.89 m)

    D. 42 ft (12.8 m)

Answer: Option **D**

23. Heel of crossing is the line joining

   A. ends of splice rail and point rail

   B. ends of lead rails butting the crossing

   C. ends of wing rails

   D. throat and actual nose of crossing.

   Answer: Option **A**

---

24. A mono-block sleeper has

   A. square section

   B. rectangular section

   C. trapezoidal section

   D. semi-circular section

   E. none of these.

   Answer: Option **C**

---

25. Minimum length of a transition curve required for

   A. 2° curves for a maximum permissible speed of 135 km/hr, is 220 metres

   B. 4° curves for a maximum permissible speed of 95 km/hr, is 220 metres

   C. 6° curves for a maximum permissible speed of 80 km/hr, is 220 metres

   D. All the above.

   Answer: Option **D**

26. The distance between the theoretical noses of crossing along the same rail, in case of diamond crossing, is

   A. $\dfrac{G}{\sin 1/2\,F}$

   B. $\dfrac{G}{\sin F}$

   C. $\dfrac{G}{\tan F}$

   D. $\dfrac{G}{\cos F}$

   Answer: Option **A**

---

27. A triangle used for turning the face of locomotives, consists of

   A. three turn outs

   B. one turn out and two splits

   C. two turn outs and one split

D. three splits.

Answer: Option **C**

---

28. Monnier, the inventor of R.C.C., suggested the introduction of reinforced cement concert sleepers for the railways in

    A. 1857

    B. 1867

    C. 1877

    D. 1887

    E. 1897

Answer: Option **C**

---

29. If D is the distance between the parallel sidings and α is the angle of crossing, the distance between the noses of crossing measured parallel to the gathering line, is

    A. D tan α

    B. D cot α

    C. D sin α

    D. D cos α

Answer: Option **B**

---

30. Regional Indian railways use different types of sleepers according to their

    A. availability

    B. economy

    C. suitability

    D. design

    E. all the above.

Answer: Option **E**

31. Minimum composite sleeper index for wooden sleepers used in cross-overs, is

    A. 1152

    B. 1252

    C. 1352

    D. 1452

    E. none of these.

Answer: Option **C**

---

32. The spike commonly used to fix rails to wooden sleepers in Indian railways, is

    A. dog spike

    B. screw spike

    C. round spike

    D. all the above.

33. If *S* and *H* are strength and hardness index of a timber at 12% moisture content, the composite sleeper index, is

 A. $\dfrac{H + 10S}{20}$

 B. $\dfrac{S + 10H}{20}$

 C. $\dfrac{20S + H}{10}$

 D. $\dfrac{S + 20H}{10}$

Answer: Option **B**

34. In Indian railways, plate laying is usually done by

 A. side method

 B. telescopic method

 C. American method

 D. all the above.

Answer: Option **B**

35. Stock rails are

 A. parts of crossing

 B. fitted against check rails

 C. fitted against tongue rails

 D. laid between heel of switch and nose of crossing.

Answer: Option **C**

36. The grade compensation on B.G. tracks on Indian Railways, is

 A. 0.02%

 B. 0.03%

 C. 0.04%

 D. 0.05%

 E. 0.06%

Answer: Option **C**

37. Maximum cant deficiency prescribed on Indian Board Gauge Railways, is

 A. 40 mm

 B. 50 mm

 C. 75 mm

 D. 100 mm

E. 25 mm

Answer: Option **D**

---

38. Gauge of a permanent way, is

    A.   minimum distance between running faces of rails

    B.   minimum distance between outer faces of rails

    C.   distance between centres of rails

    D.   width of formation

    E.   none of these.

Answer: Option **A**

---

39. On Indian Railways standard length of rails for M.G. track, is

    A.   33 ft (10.06 m)

    B.   36 ft (10.97 m)

    C.   39 ft (11.89 m)

    D.   42 ft (12.8 m)

Answer: Option **C**

---

40. For calculating the length of curve lead (C.L.), the correct formula is

    A.   C.L. = G. cot α/2

    B.   C.L. = 2lG

    C.   C.L. = 2 GN

    D.   all the above.

Answer: Option **D**

41. The standard dimensions of a wooden sleeper for M.G. railway track are

    A.   2.74 m x 25 cm x 13 cm

    B.   1.83 m x 20 cm x 11 cm

    C.   1.52 m x 15 cm x 10 cm

    D.   1.75 m x 20 cm x 12 cm

    E.   none of these.

Answer: Option **B**

---

42. If *G* is gauge is metres, *V* is speed of trains in km/hour and *R* is radius of a curve in metres, the equilibrium superelevation is

    A. $\dfrac{GV^2}{R}$

    B. $\dfrac{GV^2}{17R}$

    C. $\dfrac{GV^2}{127R}$

D. $\dfrac{GV^2}{130R}$

E. $\dfrac{GV^2}{130R}$

Answer: Option **C**

---

43. The standard width of ballast for B.G.track in Indian Railways, is kept

    A. 3.35 m

    B. 3.53 m

    C. 2.35 m

    D. 2.53 m

    E. none of these.

    Answer: Option **A**

---

44. The angle between the gauge faces of the stock rail and tongue rail, is called

    A. switch angle

    B. angle of crossing

    C. angle of turnout

    D. none of these.

    Answer: Option **A**

---

45. Top surface of steel sleepers, is

    A. kept level throughout

    B. provided a cant of 1 in 20 inward

    C. provided a cant of 1 in 20 outward

    D. none of these.

    Answer: Option **B**

46. Wheels of a rolling stock are provided flanges on

    A. outer side

    B. inner side

    C. both sides

    D. neither side.

    Answer: Option **B**

---

47. The arrangement of rails which permit trains to cross another track and also to divert to the other track, is called

    A. diamond crossing

    B. diamond crossing with single slip

    C. diamond crossing with double slip

    D. cross over.

48. To achieve best performance, the type of switch preferred to, is

    A. undercut switch

    B. straight-cut switch

    C. overriding switch

    D. both (*a*) and (*b*)

    E. none of these.

49. Degree of a railway curve is defined as number of degrees subtended at the centre of a curve by an arc of

    A. 10 m

    B. 15 m

    C. 20 m

    D. 30.5 m

    E. 30 m

50. Pot sleepers are used if degree of the curve does not exceed

    A. 4°

    B. 5°

    C. 6°

    D. 7°

    E. 8°

1. For even distribution of load through ballast, load dispersal is assumed as

    A. 30° to the vertical

    B. 45° to the vertical

    C. 60° to the vertical

    D. none of these.

2. The side of a rail diamond may be obtained by dividing the gauge of track by

    A. sine of acute crossing

    B. consine of acute crossing

    C. tangent of acute crossing

    D. cotangent of acute crossing.

3. The main advantage of a cement concrete sleeper, is :

    A.   its heavy weight which improves the track modulus

    B.   its capacity to maintain gauge

    C.   its suitability for track circuiting

    D.   its flat bottom which is very suitable for modern track

    E.   all the above.

Answer: Option **E**

---

4.   Rail tops of a track are placed

    A.   horizontal

    B.   at an inward slope of 1 in 20

    C.   at an outward slope of 1 in 20

    D.   at an outward slope of 1 in 30

    E.   at an inward slope of 1 in 30

Answer: Option **B**

---

5.   The gradient on which an additonal engine is required to negotiate the gradient, is called

    A.   momentum gradient

    B.   pusher gradient

    C.   ruling gradient

    D.   steep gradient.

Answer: Option **B**

6.   Pick up the correct statement from the following:

    A.   The line which connects a number of parallel tracks, and also provides an access to main track, is called a gathering line

    B.   With a diagonal gathering line, the length of the siding decreases with increase of its distance from main track

    C.   To have sidings of same length, a diagonal line is laid at one end and a parallel gathering line at the other end

    D.   For most economical layout of yards, the gathering lines are laid at the limiting angle

    E.   All the above.

Answer: Option **E**

---

7.   If *D* is the distance between the parallel sidings and β is the limiting angle of crossings, the distance between the noses of crossing measured parallel to the main track, is

    A. $D \sin \beta$

    B. $D \cot \beta$

    C. $D \tan \beta$

    D. $D \sec \beta$

Answer: Option **B**

---

8.   To avoid the damage of nose of crossing, the wing rails are ramped so that nose of crossing remains at a lower level by

A. 3 mm

B. 4 mm

C. 5 mm

D. 6 mm.

Answer: Option **A**

---

9. Smitch diamond is provided if the angle of diamond is less than

A. 2°

B. 4°

C. 6°

D. 8°

Answer: Option **C**

---

10. The distance between theoretical nose of crossing and actual nose of crossing for practical purposes, is

A. Nose thickness x tan α

B. Nose thickness x cot α

C. Nose thickness x sin α

D. Nose thickness x cos α

Answer: Option **B**

11. The main advantage of a long rail over short one, is

A. it requires less number of rail fastenings

B. it provides smooth running of trains

C. it involves less maintenance cost

D. it provides conform to passengers

E. all the above.

Answer: Option **E**

---

12. Widening of gauge is provided if degree of the curve, is

A. 3° or less

B. 3° to $4\frac{1}{2}°$

C. more than $4\frac{1}{2}°$

D. none of these.

Answer: Option **C**

---

13. Continuity of electric current across welded rail joints, is maintained by

A. welding ends of a wire to each rail

B. placing an insulated plate underneath the rails

    C.   placing insulation in expansion gaps

    D.   none of these.

Answer: Option **D**

---

14.   Sand may be used as ballast for

    A.   wooden sleepers

    B.   steel sleepers

    C.   cast iron sleepers

    D.   all the above.

Answer: Option **C**

---

15.   Cast iron sleeper, is

    A.   pot sleeper

    B.   box sleeper

    C.   Duplex sleeper

    D.   plate sleeper

    E.   All the above.

Answer: Option **E**

16.   On Indian Railways, angle of crossing between gauge faces of Vee, is generally calculated by

    A.   Cole's method

    B.   Centre line method

    C.   Isosceles triangle method

    D.   both (*a*) and (*b*)

Answer: Option **A**

---

17.   For an effective administration, Indian railway system has been divided into

    A.   four railway zones

    B.   six railway zones

    C.   seven railway zones

    D.   eight railway zones

    E.   nine railway zones.

Answer: Option **E**

---

18.   In a railway track, permissible gauge with tolerance under loaded condition, is

    A.   G + 0.1 mm

    B.   G + 1.5 mm

    C.   G - I.O mm

    D.   G - 1.5mm

E. G - 20 mm

Answer: Option **B**

---

19. A turn-in-curve is defined as

   A. a curve introduced between two straights

   B. a reverse curve

   C. a reverse curve introduced in continuity of a turn out

   D. a spiral transition curve.

   Answer: Option **C**

---

20. Advantage of automatic signalling, is:

   A. increased safety

   B. reduction in delays

   C. increase in track capacity

   D. all the above.

   Answer: Option **D**

21. Track construction involves preparation of

   A. subgrade

   B. plate laying

   C. ballasting

   D. all the above.

   Answer: Option **D**

---

22. In permanent way, ballast

   A. transfers load from sleepers to the formation

   B. provides an elastic bed to the track

   C. provides a drainage of track

   D. **all the above.**

---

23. The lengths of the standard crossings in India for Broad gauge and Metre gauge tracks is same for

   A. 1 in $8\frac{1}{2}$ B.G. and, in 12 M.G.

   B. 1 in 12 B.G. and, 1 in 16 M.G.

   C. 1 in 12 B.G. and 1 in $8\frac{1}{2}$ M.G.

   D. 1 in 16 B.G. and 1 in 12 M.G.

   Answer: Option **A**

---

24. If w is width of sleepers, s is sleeper spacing and d is depth of ballast then

A. $d = \dfrac{s - w}{2}$

B. $d = \dfrac{s - w}{3}$

C. $d = \dfrac{s - w}{4}$

D. $d = \dfrac{s - w}{5}$

E. $d = \dfrac{s - w}{5}$

Answer: Option **A**

---

25. On either side of the centre line of rails, a cant of 1 in 20 in the sleeper is provided for a distance of

A. 150 mm

B. 165 mm

C. 175 mm

D. 185 mm

Answer: Option **C**

26. Anti-creep anchors are fixed to rails by

A. wedging

B. spring grip

C. clamping

D. all the above.

Answer: Option **D**

---

27. On Indian Railways, the approximate weight of a rail section is determined from the formula

A. $\dfrac{\text{weight of the rail}}{\text{axial load of locomotive}} = \dfrac{1}{10}$

B. $\dfrac{\text{weight of the rail}}{\text{axial load of locomotive}} = \dfrac{1}{410}$

C. $\dfrac{\text{weight of the rail}}{\text{axial load of locomotive}} = \dfrac{1}{510}$

D. $\dfrac{\text{weight of the rail}}{\text{axial load of locomotive}} = \dfrac{1}{610}$

Answer: Option **C**

---

28. Pick up the incorrect statement from the following. Required tilt of 1 in 20 is provided

A. to the tops of rails

B. at rail seats in bearing plates

C. at rail seats in chairs

D. at rail seats in metal sleepers.

Answer: Option **A**

---

29. A triangle of railway consists of

A. three turn outs

B. one turn out and two diamonds

C. two turn outs and one split

D. one turn out, one split and one diamond.

Answer: Option **C**

---

30. Steel sleepers are

A. rectangular is cross section throughout

B. hollow circular pipes

C. 6 mm thick steel sheets with ends bent down

D. 6 mm thick steel sheets with ends bent up.

Answer: Option **C**

31. If D is distance between centres of two parallel tracks of gauge G with entire curved leads and equal angles of crossing, total length of crossover, is

A. D (4R - 2G - D)

B. D (3R - 2G -D)

C. D (3R + 2G - D)

D. D (4 + 2G - D)

Answer: Option **A**

---

32. Pick up the incorrect statement from the following:

A. Ends of adjoining rails should be in true alignment

B. Rail joints should be as strong as the rail section itself

C. Rail joints should be elastic laterally as well as vertically

D. Ends of adjoining rails butt against to give a continuity

E. All the above.

Answer: Option **E**

---

33. Staggered rail joints are generally provided

A. on curves

B. on tangents

C. on bridges

D. in tunnels.

Answer: Option **A**

34. Bull headed rails are generally provided on

    A. points and crossing

    B. straight tangents

    C. curved tracks

    D. metre gauge tracks

    E. none of these.

    Answer: Option **A**

35. The check rails are placed opposite the crossing so that

    A. it is symmetrically placed opposite nose of crossing

    B. its one-third length is ahead of the nose of crossing

    C. its two-third length is ahead of the nose of crossing

    D. its three fourth length is ahead of the nose of crossing.

    Answer: Option **C**

36. Weight and cross section of the rails are decided on

    A. gauge of tracks

    B. speed of trains

    C. spacing of sleepers

    D. type of rails

    E. all the above.

    Answer: Option **E**

37. Main disadvantage of steel sleepers, is :

    A. it gets rusted quickly

    B. its lugs some times get broken

    C. its lugs some times get split

    D. all the aboye.

    Answer: Option **D**

38. An extra 7.5 cm ballast width is not provided on outer side on a curve, if its degree is

    A. 6°

    B. 5°

    C. 4°

    D. 3°

    E. 2°

    Answer: Option **D**

39. The factor for deciding the type of sleeper, is

A.   easy fixing and removal of rails

B.   provision of sufficient bearing area for rails

C.   initial and maintenance costs

D.   strength to act as a beam under loads

E.   all the above.

Answer: Option **E**

---

40.   Spacing of sleepers

A.   throughout the length of a rail is kept uniform

B.   near rail joints, is kept closer

C.   at the middle of rails, is kept closer

D.   none of these.

Answer: Option **C**

41.   Rail section is generally designated by its

A.   total weight

B.   total length

C.   weight per metre length

D.   area of its cross-section.

Answer: Option **C**

---

42.   Pick up the correct statement from the following:

A.   Length of tongue rail should be greater than rigid wheel base of vehicle

B.   Stock rail should be longer than tongue rail

C.   Length of stock rail ahead of the toe should be a minimum of 1.65 m

D.   All the above.

Answer: Option **D**

---

43.   Total effective bearing area of both the bowls of a pot sleeper, is

A.   slightly more than that of a wooden sleeper

B.   slightly less than that of a wooden sleeper

C.   equal to that of a wooden sleeper

D.   none of these.

Answer: Option **C**

---

44.   For metal sleepers with rounded edges, maximum size of ballast, is

A.   50 mm

B.   40 mm

C.   30 mm

D. 25 cm

E. 20 mm

Answer: Option **B**

---

45. If *G* is gauge distance and a is crossing, the distance between the nose of acute crossing and nose of obtuse crossing of a rail diamond, measured along the rail not forming the diamond, is

A. *G* cot α

B. *G* tan α

C. *G* sin α

D. *G* cos α

Answer: Option **A**

46. On Indian Railways, number of a crossing is defined as

A. sine of angle of crossing

B. consine of angle of crossing

C. tangent of angle of crossing

D. contangent of angle of crossing.

Answer: Option **D**

---

47. If the standard length of a crossing is 480 cm, the number of crossing is

A. 1 in $8\frac{1}{2}$ of B.G.

B. 1 in $8\frac{1}{2}$ of M.G.

C. both (*a*) and (*b*)

D. none of these.

Answer: Option **C**

---

48. In India, metre gauge permanent way was adopted in

A. 1855

B. 1860

C. 1866

D. 1871

E. 1875

Answer: Option **D**

---

49. On a single line track, 10 goods trains loaded with iron ore run from *A* to *B* and empty wagons return from *B* to *A* daily. Amount of creep of the rails will be

A. zero

B. more in the direction *A* to *B*

C. more in the direction *B* to *A*

D. none of these.

Answer: Option **B**

---

50. Check rails are provided on inner side of inner rails if sharpness of a B.G. curve, is more than

A. 3°

B. 5°

C. 6°

D. 8°

Answer: Option **D**

1. Wing rails are provided

A. near tongue rails

B. near check rails

C. near stock rails

D. in crossing.

Answer: Option **D**

---

2. Burnettising is done for the preservation of

A. wooden sleepers

B. rails

C. ballast

D. none of these.

Answer: Option **A**

---

3. 30 m long rails are used in

A. India

B. Pakistan

C. Russia

D. U.S.A.

E. U.K.

Answer: Option **D**

---

4. Minimum gradient in station yards is generally limited to

A. 1 in 1000

B. 1 in 750

C. 1 in 500

D. 1 in 400

E. zero

Answer: Option **E**

---

5. If n is length of a rail in metres, the number of sleepers per rail length generally varies from

A. n to $(n + 2)$

B. $(n + 2)$ to $(n + 4)$

C. $(n + 3)$ to $(n + 6)$

D. $(n + 4)$ to $(n + 5)$

Answer: Option **C**

6. For inspection and packing of ballast, each pot sleeper is provided with

A. one hole

B. two holes

C. three holes

D. four holes.

Answer: Option **B**

---

7. Each block of a two-block concrete sleeper is

A. 722 mm x 295 mm x 271 mm and 215 kg in weight

B. 250 mm x 154 mm x 196 mm and 260 kg in weight

C. 525 mm x 350 mm x 275 mm and 280 kg in weight

D. none of these.

Answer: Option **A**

---

8. The effective bearing area of all types of sleepers, is

A. 0.40 m^2

B. 0.42 m^2

C. 0.44 m^2

D. 0.46 m^2

E. 0.50 m^2

Answer: Option **D**

---

9. For points and crossings, maximum size of ballast, is

A. 50 mm

B. 40 mm

C. 30 mm

D. 25 mm

E. 20 mm

Answer: Option **D**

---

10. The main function of sleepers, is

A. to support rails

B. to hold rails at correct gauge

C. to distribute load from the rails to ballast

D.   all the above.

Answer: Option **D**

11.   If *S* is the switch angle and α is diamond angle, *r* is the radius of slip, the distance between middle point slip and the nose of obtuse crossing, is

A. $r \left[\sec \left(\dfrac{a}{2} - S \right) - 1 \right]$

B. $r \left[\sec \left(S - \dfrac{a}{2} \right) - 1 \right]$

C. $r \left[\sec \left(\dfrac{a - S}{2} \right) - 1 \right]$

D. $r \left[\sec \left(\dfrac{a - S}{2} \right) + 1 \right]$

Answer: Option **A**

---

12.   Packing of ballast is done

A.   near the ends of sleepers

B.   on the shoulders

C.   under sleepers

D.   between two rails.

Answer: Option **C**

---

13.   If the standard length of a B.G. crossing is 597 cm, the number of crossing, is

A.   1 in $8\dfrac{1}{2}$

B.   1 in 12

C.   1 in 16

D.   none of these.

Answer: Option **B**

---

14.   Rails are fixed on steel sleepers

A.   by bearing plates

B.   by dog spikes

C.   by keys in lugs or jaws

D.   none of these.

Answer: Option **C**

---

15.   If *a* is average number of peaks more than 10 mm of unevenness per kilometre, *b* is average number peaks more than 6 mm for gauge variation per kilometre and *c* is average number of peaks more than 2 mm twist per metre, then composite current recording index (I_c), as recommended by Indian Northern Railways, is

A. $I_c = 10 - a - b - c/4$

B. $I_c = 20 - a - b - c/4$

C. $I_c = 30 - a - b - c/4$

D. $I_c = 40 - a - b - c/4$

Answer: Option **D**

16. Pick up the correct statement from the following:

A. An extra width of 7.5 cm ballast isprovided on outside a curve if track is laid with short welded rails

B. An extra width of 7.5 cm ballast isprovided on outside a curve sharper than 3° on B.G. and M.G. tracks

C. An extra width of 15 cm ballast is provided on each shoulder if the track is laid with welded rails

D. All the above.

Answer: Option **D**

---

17. The standard width of ballast for M.G. track in Indian Railways, is kept

A. 3.35 m

B. 3.53 m

C. 2.30 m

D. 2.50 m

E. none of these.

Answer: Option **C**

---

18. To prevent creep in rails, the steel sleepers are fixed with rails by clips, bolts and

A. one key

B. two keys

C. three keys

D. four keys.

Answer: Option **D**

---

19. The standard dimensions of a wooden sleeper for a B.G. railway track are

A. 2.74 m x 25 cm x 13 cm

B. 1.83 m x 20 cm x 11 cm

C. 1.52 m x 15 cm x 10 cm

D. 1.75 cm x 20 cm x 12 cm

E. none of these.

Answer: Option **A**

---

20. In Indian railways, the ratio of axle load and weight of rail, is

A. 312

B. 412

C. 512

D. 600

Answer: Option **C**

21. If D is the distance between parallel tracks G is the gauge and α is angle of crossings, the distance between theoretical noses of two crossings measured parallel to tracks, is

    A. $(D - G - G \sec α) \cot α$

    B. $(D - G + G \sec α) \cot α$

    C. $(D - G - G \sec α) \tan α$

    D. $(D + G + G \sec α) \cot α$

Answer: Option **A**

---

22. Minimum composite sleeper index for wooden sleepers used over bridge girders, is

    A.   1455

    B.   1355

    C.   1255

    D.   1155

    E.   none of these.

Answer: Option **A**

---

23. In a diamond crossing, number of noses are

    A.   2

    B.   3

    C.   4

    D.   6

Answer: Option **D**

---

24. If the stock rails are B.H. rails, the type of switch generally provided, is

    A.   articulated

    B.   undercut

    C.   over riding

    D.   straight cut.

Answer: Option **D**

---

25. Bending of rail ends due to loose packing under a joint and loose fish Bolts, is known

    A.   buckling

    B.   hogging

    C.   creeping

    D.   none of these.

Answer: Option **B**

26. On Broad Gauge main lines with maximum traffic loads, the rail section preferred to, is

    A.   29.8 to 37.3 kg/m

B. 32.5 to 42.5 kg/cm

C. 44.7 to 56.8 kg/m

D. none of these

Answer: Option **C**

---

27. If *D* is the distance between the parallel sidings and α is the angle of crossing, the distance between the noses of crossing measured parallel to the main track, is

A. D tan α

B. D sec α

C. D cosec α

D. D cot α

Answer: Option **C**

---

28. On B.G. tracks the distance of outer signal from station limit is kept

A. 510 m

B. 520 m

C. 530 m

D. 540 m

E. 550 m

Answer: Option **D**

---

29. The rails get out of their original positions due to insufficient expansion gap. This phenomenon is known

A. hogging

B. buckling

C. creeping

D. none of these.

Answer: Option **B**