

Railway Engineering

Question No. 01

On a single rail track, goods trains loaded with heavy iron material run starting from 'A' to 'B' and then empty wagons run from 'B' to 'A'. The amount of creep in the rails:

- (A) Will be more in the direction of B to A
- (B) Will be more in the direction of A to B
- (C) Will be maximum at the middle of A and B
- (D) Cannot be determined from the given data

Answer: Option B

Question No. 02

A triangle is used for

- (A) Changing the direction of engine
- (B) Transferring wagons to and from parallel tracks without shunting
- (C) Separating all the sidings and shunting lines from main lines
- (D) Preventing the vehicles from running off the track

Answer: Option A

Question No. 03

Heel divergence is

- (A) Always less than flange-way clearance
- (B) Equal to flange-way clearance
- (C) Always greater than flange-way clearance
- (D) Sometimes greater than flange-way clearance

Answer: Option C

Question No. 04

Stretcher bar is provided

- (A) To permit lateral movement of the tongue rail
- (B) To maintain the two tongue rails at the exact distance
- (C) To ensure exact gauge at the toe of the switch as well as the nose of crossing
- (D) To prevent any vertical movement between the wing rail and nose of crossing

Answer: Option B

Question No. 05

Cant deficiency occurs when a vehicle travels around a curve at

- (A) Equilibrium speed
- (B) Speeds higher than equilibrium speed
- (C) Speeds lower than equilibrium speed
- (D) Booked speed

Answer: Option B

Question No. 06

The type of spike used for fixing chairs of bull headed rails to wooden sleepers is

- (A) Dog spike
- (B) Rail screw
- (C) Elastic spike
- (D) Round spike

Answer: Option D

Question No. 07

Flat mild steel bearing plates are used

- (A) For points and crossings in the lead portion
- (B) With wooden sleepers at locations where creep is likely to be developed
- (C) On all joints and curves
- (D) On all the above

Answer: Option A

Question No. 08

Composite sleeper index is the index of

- (A) Hardness and strength
- (B) Strength and toughness
- (C) Toughness and wear resistance
- (D) Wear resistance and hardness

Answer: Option A

Question No. 09

Staggered joints are generally provided

- (A) On curves
- (B) On straight track
- (C) When two different rail sections are required to be joined
- (D) None of the above

Answer: Option A

Question No. 10

Creep is the

- (A) Longitudinal movement of rail
- (B) Lateral movement of rail
- (C) Vertical movement of rail
- (D) Difference in level of two rails

Answer: Option A

Question No. 11

Due to battering action of wheels over the end of the rails, the rails get bent down and are deflected at ends. These rails are called

- (A) Roaring rails
- (B) Hogged rails

(C) Corrugated rails

(D) Buckled rails

Answer: Option B

Question No. 12

The main function of a fish plate is

(A) To join the two rails together

(B) To join rails with the sleeper

(C) To allow rail to expand and contract freely

(D) None of the above

Answer: Option A

Question No. 13

The purpose of providing fillet in a rail section is to

(A) Increase the lateral strength

(B) Increase the vertical stiffness

(C) Avoid the stress concentration

(D) Reduce the wear

Answer: Option C

Question No. 14

Two important constituents in the composition of steel used for rail are

(A) Carbon and silicon

(B) Manganese and phosphorous

(C) Carbon and manganese

(D) Carbon and sulphur

Answer: Option C

Question No. 15

Flange-way clearance is the distance

(A) Between the adjoining faces of the running rail and the check rail near the crossing

(B) Between the gauge faces of the stock rail and the tongue rail

(C) Through which the tongue rail moves laterally at the toe of the switch

(D) None of the above

Answer: Option A

Question No. 16

Which of the following types of sleepers is preferred on joints?

(A) CST-9 sleeper

(B) Steel trough sleeper

(C) Wooden sleeper

(D) Concrete sleeper

Answer: Option C

Question No. 17

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

Question No. 18

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) None of these

Answer: Option D

Question No. 19

On Indian Railways, number of a crossing is defined as

- (A) Sine of angle of crossing
- (B) Cosine of angle of crossing
- (C) Tangent of angle of crossing
- (D) Contingent of angle of crossing

Answer: Option D

Question No. 20

Pandrol clips cannot be used with

- (A) Wooden sleepers
- (B) Concrete sleepers
- (C) CST-9 sleepers
- (D) Steel trough sleepers

Answer: Option C

Question No. 21

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

Answer: Option C

Question No. 22

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

Question No. 23

Normally maximum cant permissible in Meter Gauge is

- (A) 75 mm
- (B) 90 mm
- (C) 140 mm
- (D) 165 mm

Answer: Option B

Question No. 24

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

Question No. 25

Pick up the correct statement from the following:

- (A) An extra width of 7.5 cm ballast is provided on outside a curve if track is laid with short welded rails
- (B) An extra width of 7.5 cm ballast is provided 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

Question No. 26

Lead of crossing is the distance from the

- (A) Heel of the switch to the toe of the switch
- (B) Heel of the switch to the theoretical nose of the crossing
- (C) Toe of the switch to the theoretical nose of crossing
- (D) Toe of the switch to the actual nose of crossing

Answer: Option B

Question No. 27

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

Answer: Option D

Question No. 28

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

Question No. 29

The object of providing a point lock is

- (A) To ensure that each switch is correctly set
- (B) To ensure that the point may not be operated while the train is on it
- (C) To detect any obstruction between and tongue rail
- (D) None of the above

Answer: Option A

Question No. 30

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

- (A) 1152
- (B) 1252
- (C) 1352
- (D) 1452

Answer: Option C

Question No. 31

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

Question No. 32

When semaphore and warner are installed on the same post, then the stop indication is given when

- (A) Both arms are horizontal
- (B) Semaphore arm lowered but warner arm horizontal
- (C) Both semaphore and warner arms lowered
- (D) None of the above

Answer: Option A

Question No. 33

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

- (A) 2.74 m × 25 cm × 13 cm

- (B) 1.83 m × 20 cm × 11 cm
- (C) 1.52 m × 15 cm × 10 cm
- (D) 1.75 m × 20 cm × 12 cm

Answer: Option B

Question No. 34

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

Question No. 35

Wear of rails is maximum in weight of

- (A) Tangent track
- (B) Sharp curve
- (C) Tunnels
- (D) Coastal area

Answer: Option B

Question No. 36

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

Answer: Option D

Question No. 37

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

Answer: Option B

Question No. 38

For a sleeper density of $(n + 5)$, the number of sleepers required for constructing a broad gauge railway track of length 650 m is

- (A) 975
- (B) 918
- (C) 900

(D) 880

Answer: Option C

Question No. 39

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

Question No. 40

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

- (A) Nose thickness $\times \tan \alpha$
- (B) Nose thickness $\times \cot \alpha$
- (C) Nose thickness $\times \sin \alpha$
- (D) Nose thickness $\times \cos \alpha$

Answer: Option B

Question No. 41

The rail is designated by its

- (A) Length
- (B) Weight
- (C) Cross-section
- (D) Weight per unit length

Answer: Option D

Question No. 42

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

Question No. 43

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

Question No. 44

Ordinary rails are made of

- (A) Mild steel
- (B) Cast iron
- (C) Wrought iron
- (D) High carbon steel

Answer: Option D

Question No. 45

In India the rails are manufactured by

- (A) Open hearth process
- (B) Duplex process
- (C) Both (a) and (b)
- (D) Neither (a) nor (b)

Answer: Option C

Question No. 46

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

Question No. 47

The formation width for a railway track depends on the

- (i) Type of gauge**
- (ii) Number of tracks to be laid side by side**
- (iii) Slope of sides of embankment or cutting**

The correct answer is

- (A) Only (i)
- (B) Both (i) and (ii)
- (C) Both (i) and (iii)
- (D) (i), (ii) and (iii)

Answer: Option B

Question No. 48

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

Question No. 49

Main disadvantage of steel sleepers, is:

- (A) It gets rusted quickly
- (B) Its lugs sometimes get broken
- (C) Its lugs sometimes get split
- (D) All the above

Answer: Option D

Question No. 50

For a Broad Gauge route with $(M + 7)$ sleeper density, number of sleepers per rail length is

- (A) 18
- (B) 19
- (C) 20
- (D) 21

Answer: Option C

Question No. 51

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

Answer: Option A

Question No. 52

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

Question No. 53

The desirable rate of change of cant deficiency in case of Metre Gauge is

- (A) 20 mm/sec
- (B) 35 mm/sec
- (C) 55 mm/sec
- (D) 65 mm/sec

Answer: Option B

Question No. 54

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

Question No. 55

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

(A) 1 in $8\frac{1}{2}$

(B) 1 in 12

(C) 1 in 16

(D) None of these

Answer: Option B

Question No. 56

Switch angle is the angle between

(A) The gauge face of the stock rail and tongue rail

(B) The outer face of the stock rail and tongue rail

(C) The gauge face of the stock rail and outer face of the tongue rail

(D) The outer face of the stock rail and the gauge face of the tongue rail

Answer: Option A

Question No. 57

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

Question No. 58

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

Question No. 59

The treadle bar is provided

(A) In the middle of the track a little in front of the toes of the tongue rail

(B) Near and parallel to inner side of one of the rails

(C) At right angle to the rail

(D) Near and parallel to inner side of both the rails

Answer: Option B

Question No. 60

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

Question No. 61

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) All the above

Answer: Option D

Question No. 62

For laying the railway track, materials required are

- (A) Rails
- (B) Fish-Plates
- (C) Fish Bolts
- (D) Bearing Plates

The quantities required for one kilometer of Broad Gauge track will be

Answer: Option B

Question No. 63

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

Question No. 64

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

Question No. 65

Consider the following statements about concrete sleepers.

- 1. They improve the track modulus.**
- 2. They have good scrap value.**

3. They render transportation easy.

4. They maintain the gauge quite satisfactorily. Of these statements

- (A) 1 and 2 are correct
- (B) 2 and 3 are correct
- (C) 3 and 4 are correct
- (D) 1 and 4 are correct

Answer: Option D

Question No. 66

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

Answer: Option C

Question No. 67

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

Question No. 68

In a B.G. railway track, the specified ruling gradient is 1 in 250. The horizontal curve of 3° on a gradient of 1 in 250 will have the permissible gradient of

- (A) 1 in 257
- (B) 1 in 357
- (C) 1 in 457
- (D) 1 in 512

Answer: Option B

Question No. 69

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) All the above

Answer: Option D

Question No. 70

Staggered rail joints are generally provided

- (A) On curves

- (B) On tangents
- (C) On bridges
- (D) In tunnels

Answer: Option A

Question No. 71

The following tests are conducted for rails:

- (i) Falling weight test**
- (ii) Tensile test**
- (iii) Hammer test**

The compulsory tests are

- (A) Only (i)
- (B) (i) and (ii)
- (C) (ii) and (iii)
- (D) (i) and (iii)

Answer: Option B

Question No. 72

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

Question No. 73

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

Question No. 74

Fish plate is in contact with rail at

- (A) Web of rail
- (B) Fishing plane
- (C) Head of rail
- (D) Foot of rail

Answer: Option B

Question No. 75

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

Question No. 76

Minimum gradient in station yards is generally limited to

- (A) 1 in 1000
- (B) 1 in 750
- (C) 1 in 500
- (D) Zero

Answer: Option D

Question No. 77

The formation width for a single line meter gauge track in embankment as adopted on Indian Railways is

- (A) 4.27 m
- (B) 4.88 m
- (C) 5.49 m
- (D) 6.10 m

Answer: Option B

Question No. 78

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) $\sin^{-1} (d - t/L_1)$
- (B) $\tan^{-1} (d - t/L_1)$
- (C) $\sin^{-1} (d - t/L_2)$
- (D) $\tan^{-1} (d - t/L_2)$

Answer: Option A

Question No. 79

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

Question No. 80

Minimum depth of ballast cushion for a Broad Gauge wooden sleeper of size 275 × 25 × 13 cm with 75 cm sleeper spacing is

- (A) 15 cm

- (B) 20 cm
- (C) 25 cm
- (D) 30 cm

Answer: Option C

Question No. 81

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

Answer: Option B

Question No. 82

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) $D \tan \alpha$
- (B) $D \sec \alpha$
- (C) $D \operatorname{cosec} \alpha$
- (D) $D \cot \alpha$

Answer: Option C

Question No. 83

The sleepers resting directly on girder are fastened to the top flange of girder by

- (A) Hook bolts
- (B) Dog spikes
- (C) Fang bolts
- (D) Rail screws

Answer: Option A

Question No. 84

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

Question No. 85

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

- (A) Sine of acute crossing
- (B) Cosine of acute crossing
- (C) Tangent of acute crossing

(D) Cotangent of acute crossing

Answer: Option A

Question No. 86

The standard length of rail for Broad Gauge and Meter Gauge are respectively

(A) 12 m and 12 m

(B) 12 m and 13 m

(C) 13 m and 12 m

(D) 13 m and 13 m

Answer: Option C

Question No. 87

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

Question No. 88

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

Question No. 89

Which of the following factors govern the choice of the gauge?

(i) Volume and nature of traffic

(ii) Speed of train

(iii) Physical features of the country

The correct answer is

(A) Only (i)

(B) Both (i) and (ii)

(C) Both (ii) and (iii)

(D) (i), (ii) and (iii)

Answer: Option D

Question No. 90

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

Question No. 91

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

(A) Weight of the rail/axial load of locomotive = 1/10

(B) Weight of the rail/axial load of locomotive = 1/410

(C) Weight of the rail/axial load of locomotive = 1/510

(D) Weight of the rail/axial load of locomotive = 1/610

Answer: Option C

Question No. 92

The maximum degree of curvature for Meter Gauge is limited to

(A) 10°

(B) 16°

(C) 30°

(D) 40°

Answer: Option B

Question No. 93

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

(A) 0.02 %

(B) 0.03 %

(C) 0.04 %

(D) 0.05 %

Answer: Option C

Question No. 94

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) All the above

Answer: Option D

Question No. 95

Number of keys used in CST-9 sleeper is

(A) 2

(B) 3

(C) 4

(D) None of the above

Answer: Option A

Question No. 96

Wheels of a rolling stock are provided flanges on

- (A) Outer side
- (B) Inner side
- (C) Both sides
- (D) Neither side

Answer: Option B

Question No. 97

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

Question No. 98

The compensation for curvature on gradient for Meter Gauge is given by

- (A) $70/R$
- (B) $52.5/R$
- (C) $35/R$
- (D) $105/R$

Where 'R' is radius of curve

Answer: Option B

Question No. 99

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

Question No. 100

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

Answer: Option C

Question No. 101

The correct relation between curve lead (CL), switch lead (SL) and lead of crossing (L) is given by

- (A) $CL = L - SL$
- (B) $L = CL - SL$

- (C) $SL = L + CL$
- (D) $L = (CL + SL)/2$

Answer: Option B

Question No. 102

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

Question No. 103

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

Question No. 104

In a shunting signal if the red band is inclined at 45° it indicates

- (A) Stop
- (B) Proceed
- (C) Proceed cautiously
- (D) None of the above

Answer: Option B

Question No. 105

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) $DN + G [N + \sqrt{1 + N^2}]$
- (B) $DN + G [2N + \sqrt{1 + N^2}]$
- (C) $DN + G [3N + \sqrt{1 + N^2}]$
- (D) $DN + G [4N + \sqrt{1 + N^2}]$

Answer: Option C

Question No. 106

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

Answer: Option B

Question No. 107

A train is hauled by 2-8-2 locomotive with 22.5 tonnes and on each driving axle. Assuming the coefficient of rail-wheel friction to be 0.25, what would be the hauling capacity of the locomotive?

- (A) 15.0 tonnes
- (B) 22.5 tonnes
- (C) 45.0 tonnes
- (D) 90.0 tonnes

Answer: Option B

Question No. 108

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

Question No. 109

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

- (A) Four railway zones
- (B) Six railway zones
- (C) Seven railway zones
- (D) Nine railway zones

Answer: Option D

Question No. 110

If 'A' is the angle formed by two gauge faces, the crossing number will be

- (A) $\tan A$
- (B) $\cot A$
- (C) $\sec A$
- (D) A rad

Answer: Option B

Question No. 111

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) 135 mm

Answer: Option D

Question No. 112

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) All the above

Answer: Option D

Question No. 113

Tensile strength of steel used in rails should not be less than

- (A) 450 MPa
- (B) 500 MPa
- (C) 700 MPa
- (D) 850 MPa

Answer: Option C

Question No. 114

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

Question No. 115

Wing rails are provided

- (A) Near tongue rails
- (B) Near check rails
- (C) Near stock rails
- (D) In crossing

Answer: Option D

Question No. 116

The side slope of embankments for a railway track is generally taken as

- (A) 1 : 1
- (B) 1.5 : 1
- (C) 2 : 1
- (D) 1 : 2

Answer: Option C

Question No. 117

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

- (A) $(H + 10S)/20$
- (B) $(S + 10H)/20$
- (C) $(20S + H)/10$
- (D) $(S + 20H)/10$

Answer: Option B

Question No. 118

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) $(D - G - G \sec \alpha) \cot \alpha$
- (B) $(D - G + G \sec \alpha) \cot \alpha$
- (C) $(D - G - G \sec \alpha) \tan \alpha$
- (D) $(D + G + G \sec \alpha) \cot \alpha$

Answer: Option A

Question No. 119

Minimum composite sleeper index prescribed on Indian Railways for a track sleeper is

- (A) 552
- (B) 783
- (C) 1352
- (D) 1455

Answer: Option B

Question No. 120

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)

Answer: Option C

Question No. 121

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

Answer: Option D

Question No. 122

The limiting value of cant deficiency for Meter Gauge routes is

- (A) 40 mm
- (B) 50 mm
- (C) 75 mm
- (D) 100 mm

Answer: Option B

Question No. 123

The weight of the rails depends upon

- (A) Gauge of the tracks
- (B) Speed of trains

- (C) Spacing of sleepers
- (D) All the above

Answer: Option D

Question No. 124

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) All the above

Answer: Option D

Question No. 125

In a scissors crossover, the crossings provided are

- (i) 2 obtuse angle crossings**
- (ii) 4 obtuse angle crossings**
- (iii) 4 acute angle crossings**
- (iv) 6 acute angle crossings**

The correct answer is

- (A) (i) and (iii)
- (B) (i) and (iv)
- (C) (ii) and (iii)
- (D) (ii) and (iv)

Answer: Option B

Question No. 126

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

Question No. 127

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

- (A) 1 in 8½ 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 8½ M.G.
- (D) 1 in 16 B.G. and 1 in 12 M.G.

Answer: Option A

Question No. 128

For the purpose of track maintenance, the number of turn out equivalent to one track km is

- (A) 1
- (B) 2

- (C) 5
- (D) 10

Answer: Option D

Question No. 129

Dimensions of a plate girder are:

- (A) 851 mm × 851 mm
- (B) 255 mm × 254 mm
- (C) 851 mm × 254 mm
- (D) 551 mm × 254 mm

Answer: Option C

Question No. 130

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

Question No. 131

Consider the following surveys.

- 1. Reconnaissance survey**
- 2. Preliminary survey**
- 3. Traffic survey**
- 4. Location survey**

The correct sequence in which these surveys are conducted before the alignment of a track is finalised is

- (A) 1, 3, 2, 4
- (B) 1, 3, 4, 2
- (C) 3, 1, 4, 2
- (D) 3, 1, 2, 4

Answer: Option D

Question No. 132

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

- (A) $(2G/\sin \alpha) \times (\cos \alpha/2 + \sin \alpha/2)$
- (B) $(2G/\sin \alpha) \times (\cos \alpha/2 - \sin \alpha/2)$
- (C) $(2G/\sin \alpha) \times (\sin \alpha/2 - \cos \alpha/2)$
- (D) $(2G/\sin \alpha) \times (\tan \alpha/2 - \cot \alpha/2)$

Answer: Option A

Question No. 133

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

Question No. 134

Largest percentage of material in the rail is in its

- (A) Head
- (B) Web
- (C) Foot
- (D) Head and foot both

Answer: Option A

Question No. 135

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 8½
- (C) 1 in 12
- (D) 1 in 16

Answer: Option B

Question No. 136

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

Question No. 137

The total gap on both sides between the inside edges of wheel flanges and gauge faces of the rail is kept as

- (A) 10 mm
- (B) 13 mm
- (C) 16 mm
- (D) 19 mm

Answer: Option D

Question No. 138

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

Question No. 139

In a diamond crossing, numbers of noses are

- (A) 2
- (B) 3
- (C) 4
- (D) 6

Answer: Option D

Question No. 140

Number of cotters used in CST-9 sleepers is

- (A) 2
- (B) 3
- (C) 4
- (D) 5

Answer: Option C

Question No. 141

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

Question No. 142

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) All the above

Answer: Option D

Question No. 143

A Broad Gauge branch line takes off as a contrary flexure from a main line. If the super-elevation required for branch line is 10 mm and cant deficiency is 75 mm, the super-elevation to be actually provided on the branch line will be

- (A) 10 mm
- (B) 64 mm
- (C) 85 mm
- (D) 65 mm

Answer: Option D

Question No. 144

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

Question No. 145

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

Answer: Option D

Question No. 146

Which of the following devices is used to transfer the wagons or locomotives to and from parallel tracks without any necessity of shunting?

- (A) Triangle
- (B) Turntable
- (C) Traverser
- (D) Scotch block

Answer: Option C

Question No. 147

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

Question No. 148

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

Question No. 149

For a 8° curve track diverging from a main curve of 5° in an opposite direction in the layout of a broad gauge yard, the cant to be provided for the branch track for maximum speed of 45 km/h on the main line and 'G' = 1.676 m is (Permitted cant deficiency for the main line = 7.6 cm)

- (A) 0.168 cm
- (B) -0.168 cm
- (C) 7.432 cm
- (D) 7.768 cm

Answer: Option B

Question No. 150

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

Answer: Option C

Question No. 151

30 m long rails are used in

- (A) India
- (B) U.K.
- (C) Russia
- (D) U.S.A.

Answer: Option D

Question No. 152

The load on each axle of a locomotive is 22 tonnes. If the coefficient of friction is 0.2, then the hauling capacity due to 3 pairs of driving wheels will be

- (A) 26.41
- (B) 19.81
- (C) 13.21
- (D) 6.61

Answer: Option C

Question No. 153

Overall depth of a dog spike, is

- (A) 120.6 mm
- (B) 155.90 mm
- (C) 135 mm
- (D) 150 mm

Answer: Option A

Question No. 154

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

Question No. 155

52 kg rails are mostly used in

- (A) Broad Gauge
- (B) Metre Gauge
- (C) Narrow Gauge
- (D) Both (A) and (B)

Answer: Option A

Question No. 156

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

Question No. 157

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

- (A) 3° or less
- (B) 3° to 4½°
- (C) More than 4½°
- (D) None of these

Answer: Option C

Question No. 158

The height of the rail for 52 kg rail section is

- (A) 143 mm
- (B) 156 mm
- (C) 172 mm
- (D) 129 mm

Answer: Option B

Question No. 159

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

Question No. 160

Anti-creep anchors are fixed to rails by

(A) Wedging

(B) Spring grip

(C) Clamping

(D) All the above

Answer: Option D

Question No. 161

Sleeper density in India is normally kept as

(A) $(M + 2)$ to $(M + 7)$

(B) M to $(M + 2)$

(C) $(M + 5)$ to $(M + 10)$

(D) M

Where ' M ' is the rail length in meters

Answer: Option A

Question No. 162

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

Question No. 163

If G is gauge distance and α 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) $G \cot \alpha$

(B) $G \tan \alpha$

(C) $G \sin \alpha$

(D) $G \cos \alpha$

Answer: Option A

Question No. 164

Loose jaws of steel trough sleepers are made of

(A) Cast steel

(B) Mild steel

(C) Cast iron

(D) Spring steel

Answer: Option D

Question No. 165

Regional Indian railways use different types of sleepers according to their

- (A) Availability
- (B) Economy
- (C) Suitability
- (D) All the above

Answer: Option D

Question No. 166

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

- (A) 312
- (B) 412
- (C) 512
- (D) 600

Answer: Option C

Question No. 167

Maximum value of 'throw of switch' for Broad Gauge track is

- (A) 89 mm
- (B) 95 mm
- (C) 100 mm
- (D) 115 mm

Answer: Option D

Question No. 168

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

Question No. 169

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

Question No. 170

Metal sleepers are superior to wooden sleepers with respect to

- (A) Cost
- (B) Life

- (C) Track circuiting
- (D) Fastening

Answer: Option B

Question No. 171

Charles Blacker Vignoles invented the flat footed rails in

- (A) 1814
- (B) 1836
- (C) 1846
- (D) 1856

Answer: Option B

Question No. 172

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

Question No. 173

A treadle bar is used for

- (A) Interlocking points and signal
- (B) Setting points and crossings
- (C) Setting marshalling yard signals
- (D) Track maintenance

Answer: Option A

Question No. 174

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

- (A) $a = L/4R$
- (B) $a = L^2/4R$
- (C) $h = L^2/8R$
- (D) $h = L^2/16R$

Answer: Option C

Question No. 175

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

- (A) 50 mm
- (B) 40 mm
- (C) 30 mm
- (D) 25 cm

Answer: Option B

Question No. 176

Head width of 52 kg rail section is

- (A) 61.9 mm
- (B) 66.7 mm
- (C) 67 mm
- (D) 72.33 mm

Answer: Option C

Question No. 177

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

Question No. 178

Each block of a two-block concrete sleeper is

- (A) 722 mm × 295 mm × 271 mm and 215 kg in weight
- (B) 250 mm × 154 mm × 196 mm and 260 kg in weight
- (C) 525 mm × 350 mm × 275 mm and 280 kg in weight
- (D) None of these

Answer: Option A

Question No. 179

The formation width for a double line Broad Gauge track in cutting (excluding drains) as adopted on Indian Railways is

- (A) 6.10 m
- (B) 8.84 m
- (C) 10.21 m
- (D) 10.82 m

Answer: Option C

Question No. 180

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

Answer: Option C

Question No. 181

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

- (A) 2.74 m × 25 cm × 13 cm
- (B) 1.83 m × 20 cm × 11 cm

- (C) 1.52 m × 15 cm × 10 cm
- (D) 1.75 cm × 20 cm × 12 cm

Answer: Option A

Question No. 182

The limiting value of cant excess for Broad Gauge is

- (A) 55 mm
- (B) 65 mm
- (C) 75 mm
- (D) 100 mm

Answer: Option C

Question No. 183

Indian Railways detects the rail flow by

- (A) Mitsubishi Rail flow detector
- (B) Soni Rail flow detector
- (C) Audi-gauge Rail flow detector
- (D) Kraut Kramer Rail flow detector

Answer: Option D

Question No. 184

The gradient on which an additional engine is required to negotiate the gradient, is called

- (A) Momentum gradient
- (B) Pusher gradient
- (C) Ruling gradient
- (D) Steep gradient

Answer: Option B

Question No. 185

One degree of curve is equivalent to

- (A) $1600/R$
- (B) $1700/R$
- (C) $1750/R$
- (D) $1850/R$

Where 'R' is the radius of curve in meters

Answer: Option C

Question No. 186

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) $D \tan \alpha$
- (B) $D \cot \alpha$
- (C) $D \sin \alpha$
- (D) $D \cos \alpha$

Answer: Option B

Question No. 187

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) $\sqrt{D(4R - 2G - D)}$
- (B) $\sqrt{D(3R - 2G - D)}$
- (C) $\sqrt{D(3R + 2G - D)}$
- (D) $\sqrt{D(4 + 2G - D)}$

Answer: Option A

Question No. 188

Which of the following mechanical devices is used to ensure that route cannot be changed while the train is on the point even after putting back the signal?

- (A) Detectors
- (B) Point lock
- (C) lock bar
- (D) Stretcher bar

Answer: Option C

Question No. 189

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

- (A) 4°
- (B) 5°
- (C) 6°
- (D) 7°

Answer: Option A

Question No. 190

Burnettising is done for the preservation of

- (A) Wooden sleepers
- (B) Rails
- (C) Ballast
- (D) None of these

Answer: Option A

Question No. 191

Consider the following statements:

Automatic signalling system results in

1. Greater risk
2. Higher efficiency
3. Avoidance of block instruments
4. Higher operating cost

Of these statements

- (A) 1 and 2 are correct
- (B) 3 and 4 are correct
- (C) 1 and 4 are correct

(D) 2 and 3 are correct

Answer: Option D

Question No. 192

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

Question No. 193

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

Question No. 194

Largest dimension of a rail is its

(A) Height

(B) Foot width

(C) Head width

(D) Any of the above

Answer: Option A

Question No. 195

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

Question No. 196

Advantage of automatic signalling, is:

(A) Increased safety

(B) Reduction in delays

(C) Increase in track capacity

(D) All the above

Answer: Option D

Question No. 197

For developing thinly populated areas, the correct choice of gauge is

- (A) Broad Gauge
- (B) Meter Gauge
- (C) Narrow Gauge
- (D) Any of the above

Answer: Option C

Question No. 198

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

Question No. 199

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°

Answer: Option D

Question No. 200

Standard size of wooden sleeper for Broad Gauge track is

- (A) 275 × 25 × 13 cm
- (B) 180 × 20 × 11.5 cm
- (C) 225 × 23 × 13 cm
- (D) 250 × 26 × 12 cm

Answer: Option A

Question No. 201

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

Answer: Option C

Question No. 202

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

Question No. 203

The limiting value of cant gradient for all gauges is

(A) 1 in 360

(B) 1 in 720

(C) 1 in 1000

(D) 1 in 1200

Answer: Option B

Question No. 204

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

Answer: Option D

Question No. 205

Track construction involves preparation of

(A) Sub-grade

(B) Plate laying

(C) Ballasting

(D) All the above

Answer: Option D

Question No. 206

Study the following statements regarding creep.

(i) Creep is greater on curves than on tangent railway track,

(ii) Creep in new rails is more than that in old rails,

(iii) Creep is more on steep gradients than on level track. The correct answer is

(A) Only (i)

(B) (i) and (ii)

(C) (ii) and (iii)

(D) (i), (ii) and (iii)

Answer: Option B

Question No. 207

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

(A) 1 in 6

(B) 1 in 8½

(C) 1 in 12

(D) 1 in 16

Answer: Option B

Question No. 208

Smith diamond is provided if the angle of diamond is less than

- (A) 2°
- (B) 4°
- (C) 6°
- (D) 8°

Answer: Option C

Question No. 209

60 R rails are mostly used in

- (A) Broad Gauge
- (B) Metre Gauge
- (C) Narrow Gauge
- (D) None of the above

Answer: Option B

Question No. 210

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

Question No. 211

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

- (A) 1 in 8½ of B.G.
- (B) 1 in 8½ of M.G.
- (C) Both (a) and (b)
- (D) None of these

Answer: Option C

Question No. 212

Width of ballast section for Broad Gauge is

- (A) 1.83 m
- (B) 2.25 m
- (C) 3.35 m
- (D) 4.30 m

Answer: Option C

Question No. 213

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

Question No. 214

For points and crossings, maximum size of ballast, is

(A) 50 mm

(B) 40 mm

(C) 30 mm

(D) 25 mm

Answer: Option D

Question No. 215

Which of the following methods of designation of crossing is mostly used in India?

(A) Center line method

(B) Right angle method

(C) Isosceles angle method

(D) None of the above

Answer: Option B

Question No. 216

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

(A) $C.L. = G \cdot \cot \alpha/2$

(B) $C.L. = \sqrt{2/G}$

(C) $C.L. = 2 GN$

(D) All the above

Answer: Option D

Question No. 217

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

(A) $G + 0.1$ mm

(B) $G + 1.5$ mm

(C) $G - 1.0$ mm

(D) $G - 1.5$ mm

Answer: Option B

Question No. 218

Yellow light-hand signal indicates

(A) Stop

(B) Proceed

(C) Proceed cautiously

(D) None of the above

Answer: Option C

Question No. 219

The first Indian railway was laid in

- (A) 1775
- (B) 1804
- (C) 1825
- (D) 1853

Answer: Option D

Question No. 220

Sand may be used as ballast for

- (A) Wooden sleepers
- (B) Steel sleepers
- (C) Cast iron sleepers
- (D) All the above

Answer: Option C

Question No. 221

What will be the curve lead for a 1 in 8.5 turnout taking off from a straight broad gauge track?

- (A) 28.49 m
- (B) 21.04 m
- (C) 14.24 m
- (D) 7.45 m

Answer: Option A

Question No. 222

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

Question No. 223

The effective bearing area of all types of sleepers, is

- (A) 0.40 m²
- (B) 0.42 m²
- (C) 0.44 m²
- (D) 0.46 m²

Answer: Option D

Question No. 224

The cross-sectional area of 52 kg flat footed rail is

- (A) 6155 mm²
- (B) 6615 mm²
- (C) 7235 mm²

(D) 7825 mm²

Answer: Option B

Question No. 225

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

(A) $R \sin \alpha$

(B) $R \tan \alpha$

(C) $R \sin \alpha/2$

(D) $R \tan \alpha/2$

Answer: Option D

Question No. 226

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

Question No. 227

Number of dog spikes normally used per rail seat on curved track is

(A) One on either side

(B) Two outside and one inside

(C) One outside and two inside

(D) Two outside and two inside

Answer: Option B

Question No. 228

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

(A) 15 cm

(B) 20 cm

(C) 25 cm

(D) 30 cm

Answer: Option B

Question No. 229

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

(A) 1455

(B) 1355

(C) 1255

(D) 1155

Answer: Option A

Question No. 230

The shape of transition curve used by Indian Railways is

- (A) Cubic parabola
- (B) Spiral
- (C) Sine curve
- (D) Lemniscates of Bernoulli

Answer: Option A

Question No. 231

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

Answer: Option A

Question No. 232

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

- (A) $d = (s - w)/2$
- (B) $d = (s - w)/3$
- (C) $d = (s - w)/4$
- (D) $d = (s - w)/5$

Answer: Option A

Question No. 233

The reception signal is

- (i) Outer signal
- (ii) Home signal
- (iii) Starter
- (iv) Advanced starter

The correct answer is

- (A) (i) and (ii)
- (B) (ii) and (iii)
- (C) (iii) and (iv)
- (D) (i) and (iv)

Answer: Option A

Question No. 234

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

Answer: Option A

Question No. 235

In India, metre gauge permanent way was adopted in

- (A) 1855
- (B) 1860
- (C) 1866
- (D) 1871

Answer: Option D

Question No. 236

Which one of the following rail failures is caused by loose fish bolts at expansion joints?

- (A) Crushed head
- (B) Angular break
- (C) Split head
- (D) Transverse fissures

Answer: Option A

Question No. 237

Best wood for wooden sleepers is

- (A) Chir
- (B) Deodar
- (C) Sal
- (D) Teak

Answer: Option D

Question No. 238

Bull headed rails are generally provided on

- (A) Points and crossing
- (B) Straight tangents
- (C) Curved tracks
- (D) Metre gauge tracks

Answer: Option A

Question No. 239

The type of bearing plate used in all joints and on curves to give better bearing area to the rails is

- (A) Flat mild steel bearing plate
- (B) Mild steel canted bearing plate
- (C) Cast iron anti-creep bearing plate
- (D) None of the above

Answer: Option B

Question No. 240

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

Question No. 241

Cast iron sleeper, is

- (A) Pot sleeper
- (B) Box sleeper
- (C) Duplex sleeper
- (D) All the above

Answer: Option D

Question No. 242

Gauge is the distance between

- (A) Center to center of rails
- (B) Running faces of rails
- (C) Outer faces of rails
- (D) None of the above

Answer: Option B

Question No. 243

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) All the above

Answer: Option D

Question No. 244

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

Question No. 245

At points and crossings, the total number of sleepers for 1 in 12 turnouts in Broad Gauge is

- (A) 51
- (B) 62
- (C) 70
- (D) 78

Answer: Option C

Question No. 246

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

- (A) 1.15 m³
- (B) 1.14 m³
- (C) 1.13 m³
- (D) 1.11 m³

Answer: Option D

Question No. 247

Weight and cross section of the rails are decided on

- (A) Gauge of tracks
- (B) Speed of trains
- (C) Spacing of sleepers
- (D) All the above

Answer: Option D

Question No. 248

Number of switches provided on a Gaunt-letted track is

- (A) 1
- (B) 2
- (C) 3
- (D) None of the above

Answer: Option D

Question No. 249

If S is cant deficiency in centimetres and V is maximum permissible speed in kmph, the maximum length of transition curves, is

- (A) $SV/13.6$
- (B) $SV/19.8$
- (C) $SV/127$
- (D) $SV/16.8$

Answer: Option A

Question No. 250

A train is hauled by 4-8-2 locomotive. The number of driving wheels in this locomotive is

- (A) 4
- (B) 8
- (C) 12
- (D) 14

Answer: Option B

Question No. 251

Maximum cant deficiency prescribed on Indian Board Gauge Railways, is

- (A) 40 mm
- (B) 50 mm

(C) 75 mm

(D) 100 mm

Answer: Option D

Question No. 252

Vertical curves are provided where algebraic difference between grades is equal to or

(A) Less than 2 mm/m

(B) More than 2 mm/m

(C) Less than 4 mm/m

(D) More than 4mm/m

Answer: Option D

Question No. 253

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

Answer: Option D

Question No. 254

The slipping of driving wheels of locomotives on the rail surface causes

(A) Wheel burns

(B) Hogging of rails

(C) Scabbing of rails

(D) Corrugation of rails

Answer: Option A

Question No. 255

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

(A) Sal

(B) Chir

(C) Teak

(D) Deodar

Answer: Option C

Question No. 256

To ensure exact gauge, the gauge tie plates are provided at

(A) Toe of the switch

(B) Nose of crossing

(C) Both (A) and (B)

(D) None of the above

Answer: Option C

Question No. 257

If G is gauge in metres, V is speed of trains in km/hour and R is radius of a curve in metres, the equilibrium super elevation is

- (A) GV^2/R
- (B) $GV^2/17R$
- (C) $GV^2/127R$
- (D) $GV^2/130R$

Answer: Option C

Question No. 258

The height of the center of arm of a semaphore signal above the ground is

- (A) 5.5 m
- (B) 6.5 m
- (C) 7.5 m
- (D) 8.5 m

Answer: Option C

Question No. 259

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

Question No. 260

The steepest gradient permissible on a 2.5° curve for Broad Gauge line having ruling gradient of 1 in 200 is

- (A) 1 in 250
- (B) 1 in 222
- (C) 1 in 235
- (D) 1 in 275

Answer: Option A

Question No. 261

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

Answer: Option C

Question No. 262

When the rail ends rest on a joint sleeper, the joint is termed as

- (A) Supported rail joint

- (B) Suspended rail joint
 - (C) Bridge joint
 - (D) Base joint
- Answer: Option A

Question No. 263

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

Question No. 264

Number of fish bolts per fish plate is

- (A) 2
 - (B) 4
 - (C) 5
 - (D) 6
- Answer: Option B

Question No. 265

For flat bottom sleepers, maximum size of ballast, is

- (A) 50 mm
 - (B) 40 mm
 - (C) 33 mm
 - (D) 25 mm
- Answer: Option A

Question No. 266

Which of the following turnouts is most commonly used for goods train on Indian Railways?

- (A) 1 in 8¹/₂
 - (B) 1 in 12
 - (C) 1 in 16
 - (D) 1 in 20
- Answer: Option A

Question No. 267

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

Question No. 268

The nominal size of ballast used for points and crossings is

- (A) 25 mm
- (B) 40 mm
- (C) 50 mm
- (D) 10 mm

Answer: Option A

Question No. 269

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

Question No. 270

The width of foot for 90 R rail section is

- (A) 100 mm
- (B) 122.2 mm
- (C) 136.5 mm
- (D) 146.0 mm

Answer: Option C

Question No. 271

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

Answer: Option C

Question No. 272

Switch angle depends on

- (i) Heel divergence
- (ii) Length of tongue rail
- (iii) Flange-way clearance
- (iv) Throw of switch

The correct answer is

- (A) (i) and (ii)
- (B) (ii) and (iii)
- (C) (iii) and (iv)
- (D) (i) and (iv)

Answer: Option A

Question No. 273

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

Question No. 274

Dog spikes are used for fixing rail to the

- (A) Wooden sleepers
- (B) CST-9 sleepers
- (C) Steel trough sleepers
- (D) Concrete sleepers

Answer: Option A

Question No. 275

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

Question No. 276

Anti-creep bearing plates are provided on

- (A) Bridges and approaches
- (B) Joints
- (C) Both (A) and (B)
- (D) None of the above

Answer: Option D

Question No. 277

A mono-block sleeper has

- (A) Square section
- (B) Rectangular section
- (C) Trapezoidal section
- (D) Semi-circular section

Answer: Option C

Question No. 278

The distance through which the tongue rail moves laterally at the toe of the switch for movement of trains is called

- (A) Flange-way clearance
- (B) Heel divergence

- (C) Throw of the switch
- (D) None of the above

Answer: Option C

Question No. 279

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

Question No. 280

Normally the limiting value of cant is

- (A) $G/8$
- (B) $G/10$
- (C) $G/12$
- (D) $G/15$

Where 'G' is the gauge

Answer: Option B

Question No. 281

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

Answer: Option C

Question No. 282

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

- (A) 1°
- (B) 2°
- (C) 3°
- (D) 4°

Answer: Option D

Question No. 283

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

Answer: Option C

Question No. 284

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

Question No. 285

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

Answer: Option C

Question No. 286

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