

Q:) Which one of the following pairs is correctly matched? (Notations have their usual meaning)

A: To avoid both skidding and overturning: $P/W \leq b/2h \leq$

B: Allowable maximum superelevation in plain region: 0.15

C: Allowable coefficient of lateral friction : 0.07

D: Attainment of superelevation : nl^2R

Q:) Consider the following pairs with reference to highway geometric design:

1. Camber for CC pavement : (1 in 33) to (1 in 40)
2. Roadway formation width for two lane NH in plain terrain : 12 m
3. Height of the object while calculating stopping sight distance : 0.15 m
4. Reaction time of driver in the calculating of overtaking sight-distance : 2.5 s

A: 2 and 3

C: 2 and 4

B: 1 and 3

D: 3 and 4

Q:) If N is the algebraic difference of grades, S is the headlight sight distance in metres, then the transmission length of a valley curve (following standard codes) should roughly be equal to

A: $NS^2/6$

C: $NS^2/4$

B: $NS^2/9.6$

D: $NS^2/10$

Q:) Consider the following steps involved in the design of super elevation in practice as recommended by IRC

- 1. Calculation of the allowable speed for maximum 'e' and design value of 'f'**
- 2. Calculation of the super elevation for 75% of the design speed**
- 3. Calculation of the value of 'e' and recheck**
- 4. Calculation of the value of 'f' and recheck**

The correct sequence of these steps is

A: 1,2,3,4

C: 2,3,4,1

B: 3,4,1,2

D: 4,3,2,1

Q:) What is the value of camber rate that should be provided in case of WBM pavement surface in an area of heavy rainfall?

A: 1 in 30

C: 1 in 60

B: 1 in 48

D: 1 in 72

Q:) Consider the following statements:

1. An ascending gradient of 1 in 100 meets an ascending gradient of 1 in 120 from a valley curve
2. A falling gradient of 1 in 75 meets a falling grades of 1 in 50 form a summit curve
3. The length of summit curve is determind on the basis of headlight sight-distance

Which of the statements given above is/are correct?

A: 1 and 2

C: 2 and 3

B: 1 and 3

D: 2 only

Q:) If the width of a carriage way is 5.5 m, then what is it called?

A: Single lane

C: Intermediate lane

B: Two lanes

D: Multi-lane

Q:) What is the full width of the land acquired before finalizing highway alignment known as?

A: Width of formation

C: Carriage way

B: Right of way

D: Road way

Q:) At high stretches where the required overtaking sight distance cannot be provided, it is advisable to incorporate which one of the following?

A: At least twice the safe stopping sight distance

B: Half the required overtaking sight distance

C: One-third the required overtaking sight distance

D: At least three times the safe stopping sight distance

Q:) A vehicle with track width of 2.5 m and height 3.8 m is moving on a horizontal curved roadway. What is the value of stability factor?

A: 6.3

C: 1.3

B: 0.64

D: 0.32

Q:) Consider the following factors for finding length of summit vertical curve:

1. Sight distance requirements
2. Deviation angle
3. Headlight beam distance
4. Drainage

Which of the above factors are relevant?

A: 1 and 2 only

C: 2 and 3 only

B: 1 and 3 only

D: 1,2,3 and 4

Q:) What is the value of "off tracking" while a vehicle is negotiating a curve of radius 40.0m with a wheel base of 7.0 m?

A: 0.75 m

C: 0.61 m

B: 0.69 m

D: 0.52 m

Q:) Which one of the following dictates the minimum required sight distance in valley curves?

A: Design speed

C: Height of drivers eye

B: Height of obstacle

D: Nighttime driving condition.

Q:) If the difference in elevation between the edges of a pavement of width 9.0 m and its crown is 7.5 cm, what is the camber of the pavement?

A: 1 in 60

C: 1 in 30

B: 1 in 45

D: 1 in 15

Q:) What happens when the path travelled along the road surface is more than the circumferential movement of the wheels due to rotation?

A: Slipping

C: Turning

B: Skidding

D: Revolving

Assertion (A):

The super-elevation increases along the length of transition curve.

Reason ®:

The radius of transition curve decrease along the length of the curve.

Q:) At sharp horizontal curves of highways of radius 'R' (in meters), the percentage reduction in gradient provided to compensate the loss of traction force due to curvature is

A: $50/R$

C: $100/R$

B: $75/R$

D: $125/R$

Q:)

Which one of the following diagrams illustrates the relation between speed ' u ' and density ' k ' of traffic flow?

Q:) Which one of the following methods of O - D traffic surveys is conducted for comprehensive analysis of traffic and transportation data?

A: Home interview

C: Registration number method

B: Roadside interview

D: Postcard number

Q:) If L is the length of vehicle in meters, C is the clear distance between two consecutive vehicles (stopping sight distance), then the maximum number (N) of vehicles/hour is equal to

A: $N = 1000V/C+L$

C: $N = 1000V/C-L$

B: $N = C+L/1000V$

D: $N = 1000V/L+V$

