

# Question Bank

## Highway Engineering

### 2 mark Questions :-

1) Define the following terms:

- a) Formation width
- b) Shoulder
- c) carriage way
- d) Kerbs
- e) Stopping sight distance
- f) overtaking sight distance
- g) Super elevation
- h) CBR
- i) Flexible pavement & Rigid pavements
- j) Surface and sub-surface drainage

2)

- 2) what are different factors on which geometric elements of highway depends upon?
- 3) what is the basic difference between skid and slip?
- 4) List of the factors affecting skid and slip.
- 5) On which factors cross-slope or camber depends?
- 6) write down the difference between two lane and two way traffic.
- 7) what do you mean by sight distance? what are the different types of sight distance present in highway engineering?

- 8) Describe PIV theory.
- 9) write down the factors on which stopping sight distance depends upon?
- 10) How ~~off~~ the efficiency of brake affects the stopping sight distance?
- 11) Define lag distance and braking distance.
- 12) what are the effect of centrifugal force developed in the vehicle in case of horizontal curves.
- 13) Define Extra widening.
- 14) what is the reason behind providing maximum super elevation?
- 15) what is the reason behind providing minimum super elevation?
- 16) what are the two methods of rotating pavement to attain super elevation.
- 17) what do you mean by transition curve? what is the object behind providing it?
- 18) List the different types of transition curve present in highway?.
- 19) what are the different types of vertical curves present in highway? what are the factors affecting it?
- 20) List the different tests done for the road aggregates.
- 21) what are the different types of road pavements present in highway?

22) Define Breast wall.

23) what are different types of Berms present in highway?

24) what do you mean by surface and subsurface drainage?

25) what is the necessity of Road drainage.

26) what do you mean by a) Pot-holes

b) Rutting

c) Raveling.

d) Alligator cracking.

27) Define type of trolley used in construction works.

### 5 Mark Questions

1) write short notes on 20 year plans.

2) Briefly define a) IRC

b) Jaykar committee

3) Derive the Expression for stopping sight distance. Define all the terms used in it.

4) what do you mean by centrifugal force and centripetal force? Explain.

5) Define cross section of Road with neat sketch.

6) Calculate stopping sight distance on a level road stretch for design speed of 50 kmph for

a) two-way traffic on two lane Road.

b) two way traffic on single lane Road.

- 7) describe overtaking process with neat sketch.
- 9) Define overtaking zone. Show length of overtaking zone and signpost ~~are~~ for a two way and one way road with neat sketch.
- 10) The radius of a horizontal curve is 100m. The design speed is 50 kmph. and the design coefficient of lateral friction is 0.15.
- Calculate the super elevation required if full lateral friction is assumed to develop.
  - Calculate the coefficient of friction needed if no super. elevation is provided.
- 11) Calculate the values of rolling minimum radius and absolute minimum radius of horizontal curve of a NH in plain terrain. Assuming rolling design speed and minimum design speed values as 100 and 30 kmph. respectively.
- 12) Describe the factors on which the length of transition curve depends upon.
- 13) Explain extra widening. Define all the terms in formula of Extra widening.
- 14) while alt. aligning a hill road with a falling gradient of 6 percent, a horizontal curve of radius 60 is encountered. Find the grade compensation and the compensated gradient at the curve.

- 15) write down the procedure of abrasion test.
- 16) what do you mean by Binder? Describe all the binders used in road constructions.
- 17) Draw the typical cross section of hilly Road.
- 18) differentiate between Breast wall and Retaining wall.
- 19) Explain requirement and importance of highway drainage system.
- 20) Draw the sectional drawing and plan of drainage network in hilly Road.
- 21) Explain common type of failures in flexible pavement.
- 22) Mention briefly about different traffic control signals used in roads.
- 23) Mention briefly about different construction equipments.
- 24) Explain the procedure of hot mixing plant.

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