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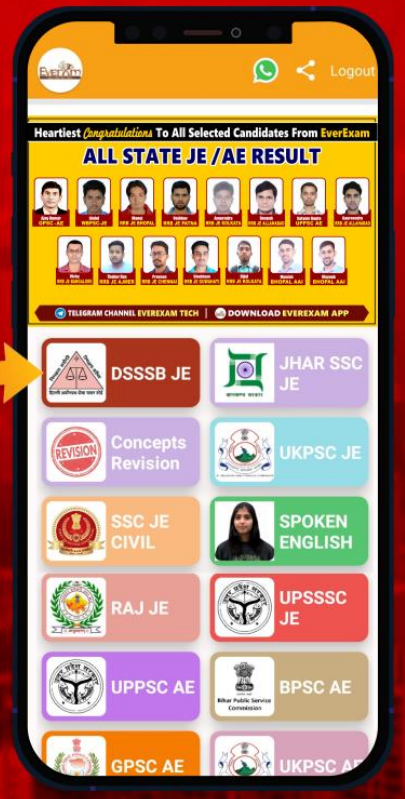

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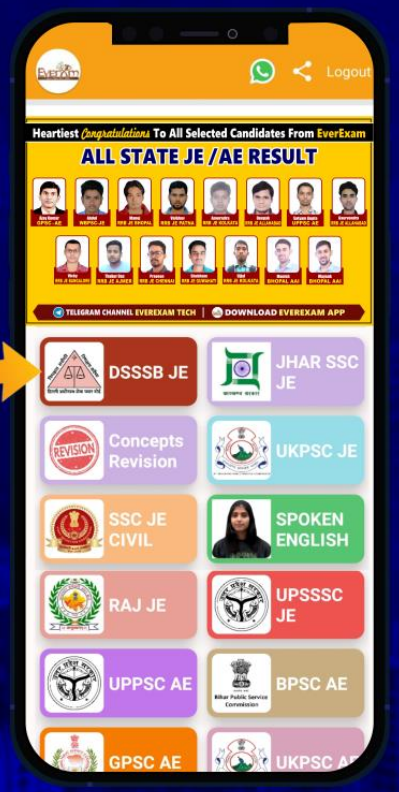

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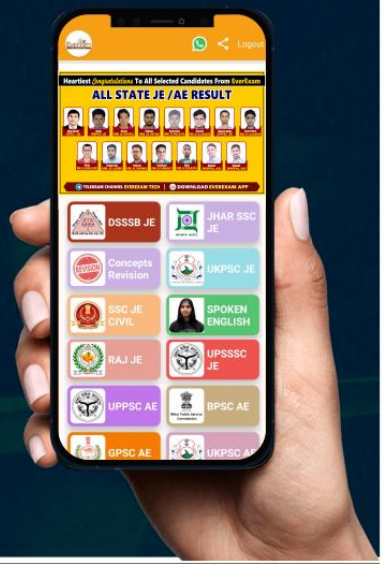

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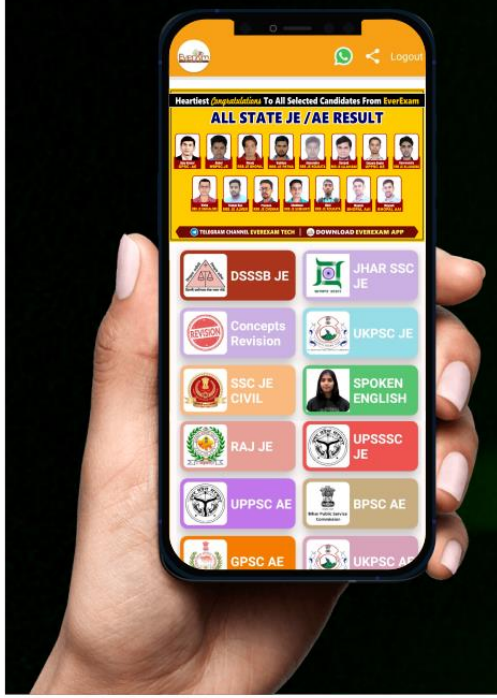

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Q :) The minimum value of coefficient of friction desirable along the longitudinal direction and the lateral direction are _____

A : 0.5 and 0.3 respectively

B : 0.35 and 0.15 respectively

C : 0.3 and 0.5 respectively

D : 0.15 and 0.35 respectively

Q :) The test to determine the hardness property of aggregates used in highways is:

A : Soundness test

B : Impact test

C : Abrasion test

D : Crushing test

Q :) The full od PIEV of the PIEV theory is:

A : Perception, Intellection, emotion, volition

B : Perception, intellection, emotion, vision

C : Perception, intelligence, emotion, volition

D : Propound, intellection, emotion, volition

Q :) Economic survey of a proposed road project includes a detailed study of:

A : Sources of income and estimated revenue

B : Agricultural and industrial products available in the area

C : Origin and destination studies

D : Soil subgrade characteristics

Q :) Which bitumen test is conducted to determine hardness of bitumen?

A : Softening point test

B : Float test

C : Spot test

D : Penetration test

Q :) Which of the following is not a commonly adopted transition curve in horizontal alignment?

A : Spiral

B : Lemniscate

C : Cubic parabola

D : Sag

Q :) Which one is NOT a road pattern?

A : Block pattern

B : Star and block pattern

C : Hexagonal pattern

D : Diamond pattern

Q :) The upper safe speed for traffic regulation as estimated using spot speed studies is:

A : 85^{th} percentile

B : 15^{th} percentile

C : 50^{th} percentile

D : 98^{th} percentile

Q :) In a horizontal highway curve, if the width of the highway is 10 m and the outer edge is 40 cm higher with respect to the inner edge, then the super elevation is

A : 1 in 20

B : 1 in 40

C : 1 in 50

D : 1 in 25

Q :) Bombay road plan is called

A : Fourth 20 year road plan

B : First 20 year road plan

C : Third 20 year road plan

D : Second 20 year road plan

Q :) When used in road work, the coefficient of hardness of a stone should be greater than

A : 17

B : 10

C : 15

D : 12

Q :) The type of the chamber which is best suited for the cement concrete pavement is

A : Straight line

B : Parabolic

C : Elliptical

D : Composite

Q :) Bottom most component of a flexible pavement is called

A : Sub-base

B : Base

C : Sub-grade

D : Base curve

Q :) The design of highways, expansion and contraction joints should respectively be provided at

A : 50 m and 32 m

B : 50 m and 10 m

C : 25 m and 10 m

D : 25 m and 32 m

Q :) Stages of engineering surveys for highway locations in the following order

A : Preliminary surveys, map study, reconnaissance, final location and detailed surveys

B : Preliminary surveys, map study, final location and detailed surveys, reconnaissance

C : Map study, reconnaissance, preliminary surveys, final location and detailed survey

D : May study, preliminary surveys, final location and detailed surveys, reconnaissance

Q :) Dowell bars and tie bars are used as a reinforcement in _____, _____ joints respectively.

A : Longitudinal, contraction

B : Explanation, longitudinal

C : Longitudinal, expansion

D : Expansion, contraction

Q :) The function of an expansion joint in the rigid pavement is to

A : Allow free expansion

B : Relive warping stresses

C : Relive shrinkage stresses

D : Resist stress due to expansion

Q :) A road is so designed that the stopping sight distance is 92 m. The intermediate sight distance (m) will be :

A : 92

B : 138

C : 184

D : 230

Q :) The major roads with two lanes each are crossing in an urban area to form an uncontrolled intersection, The number of conflict points when both the roads are two way is X, and when both the roads are one way is Y. The ratio of conflict points X to Y is:

A : 3

B : 2.5

C : 2

D : 4

Q :) RC-2, MC-2 and SC-2 corresponds to

A : Same viscosity

B : Viscosity in increasing order from RC-2 to SC-2

C : Viscosity in decreasing order from RC-2 to SC-2

D : None of the above

Q :) Indian road congress (IRC) was set up in the year:

A : 1950

B : 1978

C : 1956

D : 1934

Q :) The minimum width of the carriageway for a two-lane road without raised kerbs is

A : 7.0 m

B : 7.5 m

C : 5.5 m

D : 6.5 m

Q :) Aggregate impact value indicates the following property of aggregates

A : Durability

B : Toughness

C : Hardness

D : Strength

Q :) As per the modified classification of road system by the third road development plan, 1981 – 2001, the roads in network consist of

A : Expressways and national highways

B : State highways (HS) and major districts roads (MDR)

C : Other district roads (ODR) and village roads (VR)

D : All of the above

Q :) PCU means :

A : Personal car unit

B : Passenger car unit

C : Passenger care unit

D : Personal care unit

Q :) Select the incorrect statement regarding shoulder

A : Colour of the shoulder should be different from that of the pavement

B : Shoulder width will be difference between the roadway width and carriage way width.

C : It should be rougher than the traffic lanes so that users do not use it as regular traffic lane

D : Shoulder use increases rapidly with the decrease in pavement width below 7 m.

Q :) The shape of the stop sign according to IRC : 67 – 2001 is

A : Circular

B : Triangular

C : Octagonal

D : Rectangular

Q :) Bitumen of grade 60/70 means :

A : Its penetration value is 6 mm to 7 mm

B : Its penetration value is 60 cm to 70 cm

C : Its penetration value is 60 mm and softening point is 70

D : Its specific gravity is 0.6 to 0.7

Q :) The road length of national highway by third road plan formulae, in a certain district in India having its area as 13,400 sq. km will be

A : 134 km

B : 268 km

C : 402 km

D : 1340 km

Q :) The dowel is used in rigid pavements for

A : Resisting tensile stresses

B : Resisting bending stresses

C : Resisting shear stresses

D : Transferring load from one portion to another

Q :) If the design speed is V kmph and deviation angle is N radians, then the total length of a valley curve in meter is expressed as

A : 3.8 $NV^{1/2}$

B : 3.8 $(NV^3)^{1/2}$

C : 0.38$(NV^3)^{1/2}$

D : 0.38 $(NV)^{3/2}$

Q :) Desire lines are plotted in

A : Origin and destination studies

B : Speed studies

C : Axle load studies

D : None of these are correct

Q :) In which of the following test of bitumen ring and ball apparatus is used?

A : Penetration test

B : Softening point test

C : Viscosity test

D : Flash and fire point test

Q :) Find the compensated grade for a village road with gradient of 5% and 50m radius of curve.

A : 4.5%

B : 4%

C : 3.5%

D : 3

Q :) Traffic volume can be defined as

A : Number of vehicles occupying a unit length of road at a given instant of time

B : Number of vehicles at the cross roads

C : Number of vehicles passing a given point on road in a given unit of time in a given direction.

D : Number of vehicles passing a given point on road in a given unit of time in all the possible directions.

Q :) Which of the following is used in a regular pavement maintenance activity?

A : tack coat

B : Prime coat

C : Fog seal

D : None of these are correct

Q :) California bearing ratio is used to fine

A : The bearing capacity of soil

B : The thickness of a flexible pavement

C : Ratio of ultimate bearing capacity to net bearing capacity

D : Depth of foundation

Q :) Which is not correctly matched about extra widening:

A : If R > 300, then extra widening is not provided.

B : If R > 50 m, then extra widening is provided is provided at outer edge

C : If 50 < R < 300 m, then extra widening is provided at both the edges.

D : Extra widening is the sum of mechanical widening and psychological widening

Q :) The contact pressure P_C, type pressure P, and rigidity factor R are related by

A : $\frac{P}{P_C} = R$

B : $\frac{P_C}{P} = R$

C : P $\times$ $P_C = R$

D : R = $\sqrt{(P \times P_C)}$

Q :) In flexible pavement analysis, it is assumed that the load transferred through layers by:

A : Load stresses are absorbed in the top layer

B : Grain to grain transfer through points of contact

C : Beam action

D : Slab action

Q :) In India, yellow and white colour on a milestone indicates.

A : National highway

B : Rural road

C : State highway

D : Major district road

Q :) The cross slope of pavement surface adopted in macadam road is _____.

A : 1 in 90

B : 1 in 45

C : 1 in 36

D : 1 in 18

Q :) Super elevation on the hilly roads should be -

A : Not more than 12%

B : Nor more than 8%

C : Not more than 5%

D : Not more than 10%

Q :) Calculate the lag distance for design speed of 47 km/h for two way traffic on a single-lane road (assume coefficient of friction as 0.38 and reaction time of driver as 2.5 seconds)

A : 32.64 m

B : 111.04 m

C : 55.52 m

D : 65.28 m

Q :) The slope of the road pavement in the longitudinal direction is called

A : Superelevation

B : Shift

C : Gradient

D : Camber

Q :) If the radial acceleration of transition curve is 30 cm/sec^3, radius is 200 m and the velocity is 14 m/sec. The length of the transition curve is _____.

A : 46.0 m

B : 46.5 m

C : 45.0 m

D : 44.5 m

Q :) If an ascending gradient of 1 in 50 meets a descending of 1 in 50, the length of summit curve for a slopping sight distance of 8- m will be

A : 0

B : 64 m

C : 80 m

D : 60 m

Q :) By which colour is the safety symbol related to the prohibition of work (ex. do not dig here) depicted?

A : Green

B : Red

C : Yellow

D : Black

Q :) Calculate the theoretical capacity (C) of a traffic lane with one-way traffic flow for the given data.

1. **Traffic flow at a stream speed = 40 km/h**
2. **Average center to center spacing of vehicles = 12.8 m**

A : 312.5 vehicle/hour/lane

B : 3125 vehicle/hour/lane

C : 3.125 vehicle/hour/lane

D : 31.25 vehicle/hour/lane

Q :) Which of the following test is used for the bitumen?

A : Slump test

B : Abrasion test

C : Penetration test

D : Fineness test

Q :) The maximum size of aggregate for Marshall test shall be

A : 15 mm

B : 25 mm

C : 35 mm

D : 45 mm

Q :) The cement concrete roads are not preferred due to

A : It require long tome for curing

B : High initial cost

C : Iron tyres made more noise

D : More reflection of sun light to eyes

Q :) Benkelman beam deflection method is used for the design of

A : Rigid overlay on rigid pavement

B : Flexible overlay in flexible pavement

C : Flexible overlay on rigid pavement

D : Rigid overlay on flexible pavement

Q :) Maximum number of vehicles that can pass a given point on a lane during one hour without creating unreasonable delay is known as-

A : Practical capacity

B : Basic capacity

C : Traffic density

D : Probable capacity

Q :) The contact pressure P_C typre pressure P, and rigidity factor R are related by

A : $\frac{P}{P_C} = R$

B : $\frac{P_C}{P} = R$

C : $P \times P_C = R$

D : $R = \sqrt{(P \times P_C)}$

Q :) The Indian roads congress (IRC) was set up in

A : 1930

B : 1934

C : 1948

D : 1956

Q :) Nagpur road plan has recommended the use of road pattern type of

A : Star and circular pattern

B : Star and block pattern

C : Star and grid pattern

D : Star and hexagonal pattern

Q :) A vehicle has wheel base of 5.5 m. What is the off tracking negotiation of a curved path with a mean radius of 31.5 m? (take width of pavement as 3.5 m)

A : 0.48 m

B : 0.96 m

C : 0.17 m

D : 0.087 m

Q :) For a hill road with the ruling gradient of 6%, what will be the compensated gradient at a curve of radius 60 m?

A : 5.5%

B : 4.5%

C : 4.75%

D : 5%

Q :) What is the maximum superelevation that is fixed road congress (IRC) for roads in plain and rolling terrains and in show bound areas, taking mixed traffic into consideration?

A : 10.0%

B : 5.5%

C : 7.0%

D : 4.0%

Q :) A lateral shift in the transition curve is given by:

A : $L^3/24R^2$

B : $L^3/240R$

C : $L^3/24R$

D : $L^2/2.4R$

Q :) Select the correct match for the given information.

1. Regulatory sign	A. Prohibitory signs, restriction end signs, stop and give way signs, etc.
2. Warning signs	B. Cross road, side road righ, narrow bridge, etc
3. Informatory signs	C. Parking signs, flood gauge facility information sign, etc.

A : 1 - A, 2 - B, 3 - C

B : 1 - A, 2 - C, 3 - B

C : 1 - B, 2 - C, 3 - A

D : 1 - C, 2 - A, 3 - B

Q :) Scientific planning of transport system and mass transit facilities in cities is based on:

A : Spot speed data

B : Origin and destination data

C : Traffic volume data

D : Accident data

Q :) Optimum signal cycle in webster method is given by C_0

A : $C = \frac{1.5L+10}{1+Y}$

B : $C = \frac{1.5L+5}{1+Y}$

C : $C = \frac{1.5L+5}{1-Y}$

D : $C = \frac{1.65L+5}{1-Y}$

Q :) A semi rigid material which forms an excellent impervious layer for damp proofing is termed as

A : Mastic asphalt

B : Bitumen

C : Alumina

D : Bituminous felt

Q :) While conducting the softening point test on bitumen, the result is expressed as:

A : Viscosity

B : Time

C : Temperature

D : Flow

Q :) Calculate spacing between expansion joints, if the expansion joint gap is 2.0 cm in a cement concrete pavement. The laying temperature is 10^oC and the maximum slab temperature in summer is 50^oC

A : 30 m

B : 25 m

C : 100 m

D : 20 m

Q :) The interface treatment provided to plug in the voids of porous surfaces and to bond loose particles in bituminous pavements is called:

A : Tack coat

B : Seal coat

C : Prime coat

D : Surface dressing

Q :) A two-lane road with design speed 60 km / h has a horizontal curve of radius 400 m. What will be the super elevation required to be provided for the mixed traffic conditions at the curve as per IRC 38 - 1998?

A : 8.7%

B : 6.4%

C : 4.0%

D : 7%

Q :) The cumulative speed distribution curve is usually adopted for geometric design of highway. The percentile speed adopted for geometric design is _____.

A : 85 percentile speed

B : 90 percentile speed

C : 98 percentile speed

D : 99.9 percentile speed

Q :) As per IRC recommendations, the width of carriageway per lane in a multilane pavements is_____

A : 2.5 m

B : 4.0 m

C : 3.5 m

D : 3.0 m

Q :) The camber for cement concrete and high type bituminous surface for heavy rain fall condition is

A : 1 in 25

B : 1 in 33

C : 1 in 40

D : 1 in 50

Q :) The total width of the pavement on a horizontal circular curve = 7.5 m and the superelevation is 0.06. Calculate the magnitudes of raising at the outer edge of the pavement with respect to the central line and inner edge, respectively.

A : 0.225 m; 0.06 m

B : 0.06 m; 0.45 m

C : 0.225 m; 0.45 m

D : 0.06 m; 0.225 m

Q :) For a hill road with the ruling gradient of 6%, what will be the compensated gradient at a curve of radius 60 m?

A : 5.5%

B : 4.5%

C : 4.75%

D : 5%

Q :) Relationship between traffic speed and density is described using a negatively sloped straight line, If v is the free-flow speed then the speed at which the maximum flow occurs is

A : 0

B : $\frac{v_f}{4}$

C : v_f

D : $\frac{v_f}{2}$

Q :) Regulatory signs are generally circular in shape. Identify a regulatory sign which is NOT circular in shape

A : No parking sign

B : Restriction Ends sign

C : Stop sign

D : Speed limit sign

Q :) A traffic lane has one way traffic flow at a stream speed of 40 kmph. The average space gap between vehicles to follow 0.278 Vt. Assuming the average reaction time as 0.7 sec and average length of vehicle as 5 m, the theoretical capacity calculated with above data in vehicles per hour per lane will be:

A : 2170

B : 2350

C : 2840

D : 3130

Q :) Desirable range of softening point for bitumen is _____

A : $10^o\ C\ to\ 25^oC$

B : $10^o\ C\ to\ 25^oC$

C : $35^o\ C\ to\ 70^oC$

D : Greater than 175^oC

Q :) The Pensky-Martens apparatus are used for conducting the test on bitumen for testing –

A : Fire point

B : Ductility

C : Viscosity

D : Penetration

Q :) Bottom most layer of Pavement is known as –

A : Wearing course

B : Base course

C : Sub-base course

D : Sub grade

Q :) In tri axial test method, 20 cm thickness material has a E valve 216 kg/cm^2, which is equivalent to thickness T with E value 343 kg /cm^2. What is the value of T?

A : 27 cm

B : 24 cm

C : 20 cm

D : 17 cm

Q :) The method of design of flexible pavement as recommended by IRC is:

A : Group index method

B : Westergard method

C : CBR method

D : Benkelman beam method

Q :) As compared to roadways, the maintenance cost of the railway is

A : More

B : Less

C : Same

D : None of above

Q :) Penetration test on bitumen is used for determining its:

A : Grade

B : Viscosity

C : Ductility

D : Temperature susceptibility

Q :) Highway facilities are designed for

A : Annual average hourly volume

B : Annual average daily traffic

C : Thirtieth highest hourly volume

D : Peak hourly volume of the year

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