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Q)Increase in traffic volume, due to increase in transport vehicles, is known as--> **Generated traffic growth**
Q)Volume of traffic which would immediately use a new road or an improved one when opened to traffic, is known--> **Normal traffic growth**
Q)First operation during the detailed survey of a hill road, is--> **Fixation of Bench Marks**
Q)Nagpur road plan formula were prepared by assuming--> **Radial or star and grid road pattern**
Q)In India the modes of transportation, in the order of their importance, are--> **Railways, roads, shipping, air transport**
Q)The width of different roads as recommended in Nagpur plan by the Indian Road Conference for hilly region, is--> **Different for National Highways**
Q)Border Roads Organisation for hilly regions, was formed in--> **1960**
Q)The period of long term plan for the development of roads in India, known as Bombay Plan (Aug. 1958), is--> **20 years**
Q)An access from a road to private property is known as--> **Driveway**
Q)A junction so designed that traffic streams are divided to enable them to pass over or under each other is called--> **Flyover**
Q)In Nagpur conference the minimum width of village roads was recommended as--> **2.45m**
Q)The Indian Road Congress came into existence--> **1943**
Q)The road connecting capitals of States is known as--> **National Highway**
Q)A route formed by a road or a series of roads to avoid an obstruction or provide an alternative way for the traffic is known as--> **Loop road**
Q)Select the correct statement.--> **Second 20-year plan has provided 1600 km of expressways out of the proposed National highway.**
Q)The sequence of four stages of survey in a highway alignment is--> **Map study, reconnaissance, preliminary survey and detailed survey**
Q)Road width 8.8 m of two lane National highways or State highways in mountainous--> **excludes the width of parapet and side drain**
Q)The absolute minimum sight distance required for stopping a vehicle moving with a speed of 80 kmph is--> **120m**
Q)If D is the degree of a curve, the percentage reduction of gradient, is--> **0.04 D**
Q)Any gradient on a road is said to be an exceptional gradient, if it is--> **less than minimum gradient or more than maximum gradient.**
Q)The ideal shape of a transition curve, is--> **spiral**
Q)The desirable camber for straight cement concrete roads, is--> **1 in 160 to 1 in 140**
Q)Motor vehicle Act was enacted in--> **1951**
Q)For two major roads with divided carriageway crossing at perpendicular, a full clover leaf interchange with four indirect ramps is provided. From following statement on turning movement to all direction is correct.--> **Both merging from left and diverging to left are possible**
Q)A single lane carriage way whenever changes to two-lane carriage way, is affected through a taper of--> **1 in 15 to 1 in 20**
Q)The head light of vehicles should be such that its lower beam illuminates objects at--> **30 m**
Q)In an ideal transition curve, the radius of curvature--> **is inversely proportional to the radius of main curve**

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Q)Floating gradients are generally provided--> **at summit curves**
Q)Along highways confirmatory route markers are generally fixed--> **after the crossing on the left side**
Q)Length of vehicles does not affect--> **width of shoulders**
Q)While calculating the sight distances, the drivers eye above road surface, is assumed--> **120 cm**
Q)On the recommendations of Indian Road Congress, the ruling gradient in plains, is--> **1 in 30**
Q)The terrain may be classified as rolling terrain if the cross slope of land is--> **between 10% and 25%**
Q)Reaction time of a driver--> **decreases with increase in speed**
Q)For a constant value of coefficient of lateral friction, the value of required super-elevation increases with--> **decrease in speed and with increase in radius of curve**
Q)The effect of grade on safe overtaking sight distance is--> **to increase it on both descending and ascending grades**
Q)The shoulder provided along the road edge should be--> **rougher than the traffic lanes**
Q)On a single lane road with two way traffic, the minimum stopping sight distance is equal to--> **two times the stopping distance**
Q)The shape of a vertical curve, is--> **parabolic**
Q)The value of lateral friction or side friction used in the design of horizontal curve as per India Roads Congress guidelines is--> **0.15**
Q)The desirable length of overtaking zone as per IRC recommendation is equal to--> **five times the overtaking sight distance**
Q)The sequence of four stages of survey in a highway alignment is--> **map study, reconnaissance, preliminary survey and detailed survey**
Q)As per IRC recommendations, the maximum limit of super elevation for mixed traffic in plain terrain is--> **1 in 15**
Q)When the path travelled along the road surface is more than the circumferential movement of the wheels due to rotation, then it results in--> **skidding**
Q)Coefficient of friction is less when the pavement surface is--> **smooth and wet**
Q)For the design of super elevation for mixed traffic conditions, the speed is reduced by--> **25%**
Q)On a horizontal curve if the pavement is kept horizontal across the alignment, then the pressure on the outer wheels will be--> **more than the pressure on inner wheels**
Q)Camber in the road is provided for--> **effective drainage**
Q)The maximum width of a vehicle as recommended by IRC is--> **2.44 m**
Q)Length of a vehicle affects--> **extra width of pavement and minimum turning radius**
Q)Which of the following shapes is preferred in a valley curve ?--> **cubic parabola**
Q)Highway facilities are designed for--> **thirtieth highest hourly volume**
Q)The shape of the camber, best suited for cement concrete pavements, is--> **straight line**
Q)In case of summit curves, the deviation angle will be maximum when--> **an ascending gradient meets with a descending gradient**
Q)The ruling design speed on a National Highway in plain terrain as per IRC recommendations is--> **100 kmph**
Q)Compared to a level surface, on a descending gradient the stopping sight distance is--> **more**
Q)With increase in speed of the traffic stream, the minimum spacing of vehicles--> **increases**

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Q)The maximum design gradient for vertical profile of a road is--> **ruling gradient**
Q)The camber of road should be approximately equal to--> **half the longitudinal gradient**
Q)If ruling gradient is 1 in 20 and there is also a horizontal curve of radius 76 m, then the compensated grade should be--> **4%**
Q)In case of hill roads, the extra widening is generally provided--> **fully on the inner side of the curve**
Q)Select the correct statement.--> **Psychological extra widening depends on the speed of vehicle.**
Q)The attainment of super elevation by rotation of pavement about the inner edge of the pavement--> **avoids the drainage problem in flat terrain**
Q)Centre line markings are used--> **in roadways meant for two way traffic**
Q)Taking f = 0.35, reaction time = 2.5 sec, design speed = 90kmph. Find the length of valley curve based on head light sight distance--> **308m**
Q)If b is the wheel track of a vehicle and h is the height of centre of gravity above road surface, then to avoid overturning and lateral skidding on a horizontal curve, the centrifugal ratio should always be--> **less than b/2h and also less than co-efficient of lateral friction**
Q)If the stopping distance is 60 meters, then the minimum stopping sight distance for two lane, two way traffic is--> **60m**
Q)A road is provided with a horizontal circular curve having deflection angle 550 and centre line radius of 250m. A transition curve is to be provided at each end of the circular curve of such a length that the rate of gain of radial acceleration is 0.3m/ s 3 at a curve required at each of the ends is--> **2.57m**
Q)The perception - reaction time for a vehicle travelling at 90 kmph, given the coefficient of longitudinal friction of 0.35 and the stopping sight distance of 170 m (assume g = 9.81 m/s2) is _____ seconds.--> **3.15s**
Q)A descending gradient of 1 in 25 meets an ascending gradient of 1 in 20. With the design speed of 90kmph and C = 0.5 m/sec3.Length of valley curve from comfort condition is _____--> **106m**
Q)If the stopping distance and average length of a vehicle are 18 m and 6 m respectively, then the theoretical maximum capacity of a traffic lane at a speed of 10 m/sec is--> **1500 vehicles per hour**
Q)On a circular curve, the rate of superelevation is e. While negotiating the curve a vehicle comes to a stop. It is seen that the stopped vehicle does not slide inwards (in the radial direction). The coefficient of side friction is f. Which of the following is true--> **e ≤ f**
Q)If a vehicle travelling at 40 kmph stopped within 1.8 seconds after the application of the brakes, then the average skid resistance coefficient is--> **0.63**
Q)The rate of rise or fall of a road along its alignment is known as--> **Gradient**
Q)The following data are related to a horizontal curved portion of a two-lane highway: length of curve = 200 m, radius of curve = 300 m and width of pavement = 7.5 m. In order to provide a stopping sight distance (SSD) of 80 m, the set back distance (in m) required from the centre line of the inner lane of the pavement is--> **4.55**
Q)The percentage compensation in gradient for ruling gradient of 4% and horizontal curve of radius 760 m is--> **no compensation**
Q)If an ascending gradient of 1 in 50 meets a descending gradient of 1 in 50, the length of

summit curve for a stopping sight distance of 80 m will be--> **60m**
Q)A rest vertical curve joins two gradients of +3% and -2% for a design speed of 80km/h and the corresponding stopping sight distance of 120m. The height of drivers eye and the object above the road surface are 1.20m and 0.15m respectively. The curve length (which is less than stopping sight distance) to be provided is--> **152m**
Q)A student riding a bicycle on a 5 km one way street takes 40 minutes to reach home. The student stopped for 15 minutes during this ride. 60 vehicles over took the student (Assume the number of vehicle overtaken by the student is zero) during the ride and 45 vehicles while the student stopped. The speed of vehicle stream on that road (in km/hr) is--> **60**
Q)The gradient at hair-pin bends or other sharp corners with inside curves of 10 to 15m should never exceed--> **1 in 20**
Q)Weight of vehicles affects--> **Pavement thickness**
Q)The reduction in load carrying capacity at a gradient of 1 in 20 is--> **l0%**
Q)The recommended safe coefficient of longitudinal friction is--> **0.15**
Q)The highest point on a carriageway is known as--> **Crown**
Q)As per l.R.C. the camber on cement concrete road should be--> **l in 60 to 72**
Q)The slope of the line joining the crown and edge of the road surface is known as--> **camber**
Q)The maximum number of vehicles beyond which the rotary may not function efficiently is--> **5000 vehicles per hour**
Q)When a number of roads are meeting at a point and only one of the roads is important, then the suitable shape of rotary is--> **tangent**
Q)With increase in speed of the traffic stream, the maximum capacity of the lane--> **first increases and then decreases after reaching a maximum value at optimum speed**
Q)The alignment of a road should cross the series of hills through--> **Saddle**
Q)Two major roads with two lanes each are crossing in an urban area to form an uncontrolled intersection. The number of conflict points when both roads are one-way is X and when both roads are two-way is Y. The ratio of X to Y is--> **0.25**
Q)Scientific planning of transportation system and mass transit facilities in cities should be based on--> **origin and destination data**
Q)The direct interchange ramp involves--> **diverging to the right side and merging from right**
Q)Which of the following is indicated by a warning sign?--> **level crossing**
Q)The background colour of the informatory sign board is--> **yellow**
Q)When the width of kerb parking space and width of street are limited, generally preferred parking system is--> **parallel parking**
Q)When two equally important roads cross roughly at right angles, the suitable shape of central island is--> **circular**
Q)A traffic rotary is justified where--> **number of intersecting roads is between 4 and 7**
Q)When the speed of traffic flow becomes zero,then--> **traffic density attains maximum value whereas traffic volume becomes zero**
Q)"Dead Slow" is a--> **regulatory sign**
Q)Maximum number of vehicles can be parked with--> **900 angle parking**
Q)Which of the following methods is preferred for collecting origin and destination data for a small area like a mass business center or a large intersection ?--> **license plate method**

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Q)The diagram which shows all important physical conditions of an accident location like roadway limits, bridges, trees and all details of roadway conditions is known as**--> condition diagram**
Q)Equivalent factor of passenger car unit (PCU) for a passenger car as per IRC is**--> 1.0**
Q)The entrance and exit curves of a rotary have**--> different radii and different widths of pavement**
Q)The provision of traffic signals at intersections**--> reduces right angled collisions but may increase rear end collisions**
Q)As per IRC recommendations, the average level of illumination on important roads carrying fast traffic is**--> 30 lux**
Q)Maximum number of passenger cars that can pass a given point on a road during one hour under the most ideal road way and traffic conditions, is known as**--> basic capacity of traffic lane**
Q)Desire lines are plotted in**--> origin and destination studies**
Q)Which of the following is known as design capacity?**--> basic capacity**
Q)The particular places where pedestrians are to cross the pavement are properly marked by the pavement marking known as**--> crosswalk lines**
Q)Select the incorrect statement.**--> Go or green time of a signal is the sum of stop and clearance intervals for the cross flow.**
Q)For highway geometric design purposes the speed used is**--> 98th percentile**
Q)Enoscope is used to find**--> spot speed**
Q)The length of the side of warning sign boards of roads is**--> 45 cm**
Q)The shape of the STOP sign according to IRC: 67-2001 is**--> octagonal**
Q)Minimum permissible speed on high speed roads, is decided on the basis of**--> 15 percentile cumulative frequency**
Q)The diagram which shows the approximate path of vehicles and pedestrians involved in accidents is known as**--> collision diagram**
Q)Select the correct statement.**--> Traffic capacity should always be more than traffic volume.**
Q)The weaving length of a roadway is the distance**--> between the channelising islands**
Q)As per recommendations of I.R.C., traffic volume study is carried out for rural roads for 7 days continuously during**--> harvesting and lean season**
Q)The minimum value of 15 minutes peak hour factor on a section of a road is**--> 0.33**
Q)The speed-density (v-k) relationship on a single lane road with unidirectional flow is v = 70 0.7k where is in km/hr and k is in veh/km. The capacity of the road (veh/hr) is**--> 1750**
Q)On a right angled road intersection with two way traffic, the total number of conflict points is**--> 24**
Q)For the movement of vehicles at an intersection of two roads, without any interference, the type of grade separator generally preferred to, is**--> clover leaf.**
Q)Pick up the incorrect statement from the following. The super-elevation on roads is**--> directly proportional to velocity of vehicles**
Q)Design of horizontal and vertical alignments, super-elevation, sight distance and grades, is worst affected by**--> speed of the vehicle**
Q)The capacities of One-way 1.5m wide sidewalk (persons per hour) and Oneway 2-lane urban road (PCU per hour, with no frontage access, no standing vehicles and very little cross traffic)

are respectively**--> 1200 and 2400**
Q)A two-lane urban road with one-way traffic has a maximum capacity of 1800 vehicles/hour. Under the jam condition, the average length occupied by the vehicles is 5.0 m. The speed versus density relationship is linear. For a traffic volume of 1000 vehicles/hour, the density (in vehicles/km) is**--> 67**
Q)Weaving is**--> merging, travelling and diverging**
Q)150 Vehicle cross a particular location on highway in a duration of 30 minutes. Assume that vehicles arrival follow negative exponential distribution. Find out number of time headways greater than 5 seconds.**--> 99s**
Q)The average spacing between vehicles in a traffic stream is 50 m, then the density (in veh/km) of stream is _____.**--> 20**
Q)A traffic office impose on an average 5 number of penalties daily on traffic violators. Assume that the number of penalties on different day is independent and follows a Poisson distribution. The probability that there will be less than 4 penalties in a day is _____.**--> 0.265**
Q)An isolated three-phase traffic signal is designed by Websters method. The critical flow ratio for three phase are 0.2, 0.3 and 0.25 respectively and lost time per phase is 4 second. The optimum cycle length (in sec.) is _____**--> 92s**
Q)A pre-timed four phase signal has critical lane flow rate for the first three phases as 200, 187 and 210 veh/hr with saturation flow rate of 1800 veh/ hr/lane for all phases. The lost time is given as 4 seconds for each phase. If the cycle length is 60 seconds. The effective green time of 4th phase is _____ (in seconds)**--> 16s**
Q)An advantage of manual counting of traffic is**--> permits traffic classification by the type of vehicle**
Q)An effective way of conducting Origin and destination studies ' to extract more information is**--> return post card method**
Q)Traffic density is**--> no. of vehicles per unit length**
Q)Maximum equivalent single wheel load as per IRC is**--> 4080kg**
Q)As per IRC the maximum width of a vehicle is**--> 2.44m**
Q)PCU equivalent for a bus is**--> 2.25**
Q)The safe speed on a highway is**--> 75th percentile**
Q)Centre line for an urban road of more than 4 lanes is**--> two thick parallel lines with a gap of 75mm in between**
Q)Thick white and black lines of 2m to 4m long provided along the width of a highway indicates**--> pedestrian crossing**
Q)For the most effective traffic control, adopt**--> limited number of traffic signs**
Q)Fixed delay in a highway is due to**--> traffic signals**
Q)A channelization island provides**--> funnel shaped entry and wider exit**
Q)The advantage of a rotary is**--> no waiting by traffic**
Q)Grade separation had the advantage of**--> easy right turn**