

Model Question Paper-1/2 with effect from 2022-23 (CBCS Scheme)

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Fourth Semester B.E. Degree Examination Transportation Engineering

TIME: 03 Hours

Max. Marks: 100

- Note: 01. Answer any **FIVE** full questions, choosing at least **ONE** question from each **MODULE**.
02.
03.

Module -1			*Bloom's Taxonomy Level	Marks																								
Q.01	a	Explain the classification of roads based on the functions & location.	L1	6																								
	b	What are the significant recommendation of Jayakar committee report? Mention how this helped in road development in India?	L2	7																								
	c	Explain with a neat sketch of the modified classification of road patterns commonly used.	L1	7																								
OR																												
Q.02	a	What is safe sight distance? What are the factors affecting SSD ?	L1	5																								
	b	The design speed of Highway is 80 Kmph. There is horizontal curve of radius 200m on certain locality. Calculate the super elevation needed to maintain this speed.	L2	7																								
	c	The speed of vehicles, overtaking & overtaken speeds are 80 kmph & 45 kmph respectively. The average acceleration during overtaking may be 0.93 m/sec ² and reaction time t= 2 sec (i) Calculate OSD for one way & two way traffic road . (ii) Calculate minimum length of overtaking zone	L2	8																								
Module-2																												
Q. 03	a	What are the desirable properties of Aggregates. Explain briefly	L2	5																								
	b	List and explain the various desirable properties of subgrade soil as a highway material.	L2	7																								
	c	Explain with neat sketch type of joints used in rigid pavement.	L3	8																								
OR																												
Q.04	a	What are the significance and requirements of good highway drainage system ?	L2	6																								
	b	List various objectives of (i) Surface drainage (ii) Sub surface drainage	L2	6																								
	c	What are various cross drainage structure ? Explain each one of those.	L3	8																								
Module-3																												
Q. 05	a	Briefly explain the traffic characteristics .	L2	5																								
	b	What engineering studies carried for the traffic engineering ?	L2	6																								
	c	Spot speed studies were carried out at a certain stretch of a highway and the consolidated data collected are given below. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Speed range Kmph</th> <th>No. of vehicles Observed</th> <th>Speed Range, Kmph</th> <th>No. of Vehicles observed</th> </tr> </thead> <tbody> <tr> <td>0-10</td> <td>12</td> <td>50-60</td> <td>255</td> </tr> <tr> <td>10-20</td> <td>18</td> <td>60-70</td> <td>119</td> </tr> <tr> <td>20-30</td> <td>68</td> <td>70-80</td> <td>43</td> </tr> <tr> <td>30-40</td> <td>89</td> <td>80-90</td> <td>33</td> </tr> <tr> <td>40-50</td> <td>204</td> <td>90-100</td> <td>9</td> </tr> </tbody> </table> Determine (i) The upper & lower values for regulation of mixed traffic flow. (ii) The design speed for checking geometric design elements of the highway.	Speed range Kmph	No. of vehicles Observed	Speed Range, Kmph	No. of Vehicles observed	0-10	12	50-60	255	10-20	18	60-70	119	20-30	68	70-80	43	30-40	89	80-90	33	40-50	204	90-100	9	L3	9
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OR				
Q. 06	a	Explain the different types of traffic signs.	L2	6
	b	Explain Reaction time and PIEV theory.	L2	7
	c	Explain the origin and destination study with a neat sketch .	L3	7
Module-4				
Q. 07	a	What are the classification of rail mention merit & with neat sketch?	L1	6
	b	Explain the classification & requirements of sleepers.	L1	6
	c	Explain the following's a) Coning of wheels. b) Turnouts with neat sketch	L2	8
OR				
Q. 08	a	Explain the track fitting and fasteners used in railway.	L1	6
	b	Explain the need for points and crossings in railway.	L1	6
	c	For a rail of 11.89m length, calculate the quantity of material required / length of the track assume sleeper density to be equal to (n+4).	L2	8
Module-5				
Q. 09	a	Draw a neat sketch of an airport and explain the functions of components of airport.	L2	6
	b	List the factors considering while selection of site for an airport & explain the characteristics of an airport.	L2	7
	c	Explain the procedure for determining the best direction of orientation of runway as per type 1 with wind rose diagram assume suitable data	L3	7
OR				
Q. 10	a	Explain the classification of airport based on the ICAO & FAA	L2	6
	b	What are factors affecting layout of taxiway ?	L3	7
	c	Briefly discuss the comparison between Runway and Highway.	L2	7

*Bloom's Taxonomy Level: Indicate as L1, L2, L3, L4, etc. It is also desirable to indicate the COs and POs to be attained by every bit of questions.