

P P SAVANI UNIVERSITY

Seventh Semester of B. Tech. Examination

November 2022

SECV4041 Highway & Traffic Engineering

28.11.2022, Monday

Time: 10:00 a.m. To 12:30 p.m.

Maximum Marks: 60

Instructions:

1. The question paper comprises of two sections.
2. Section I and II must be attempted in separate answer sheets.
3. Make suitable assumptions and draw neat figures wherever required.
4. Use of scientific calculator is allowed.

SECTION - I

Q - 1	Short Question (Any Five)	[05]	CO	BTL
(i)	The New highway project is divided into how many stages? a) Four b) Three c) Two d) One		1	1
(ii)	The maximum number of cities and towns are connected by which type of highway? a) State highway b) Village road c) National highway d) Major district road		1	1
(iii)	Highway should be planned for _____ a) Traffic studies b) Present requirements c) Present requirements and future requirements d) Traffic developments		1	2
(iv)	The current highway development works in India are undertaken by? a) NHDP b) State governments c) Govt. of India d) NHAI		1	1
(v)	Which is the most preferred type of transition curve by IRC for highways? a) Parabola b) Lemniscuses c) Cubic parabola d) Spiral		1	1
(vi)	What is shoulder?		1	1
(vii)	What is a full form of IRC?		1	1
Q - 2 (a)	List out and explain various authorities responsible for the development of urban roads.	[05]		1
Q - 2 (b)	Classify the roads on the basis of Nagpur road plan.	[05]		1
OR				
Q - 2 (a)	Explain in detail Urban road development in India.	[05]		1
Q - 2 (b)	Classify the roads on the basis of Bombay road plan.	[05]	1	1
Q - 3 (a)	What is IRC? What are main objectives of IRC?	[05]	1	2

Q - 3 (b) What are the various field survey are under taken for locating a highway? [05] 1 2

OR

Q - 3 (a) What is CRR? What are main objectives of CRR? [05] 1 1

Q - 3 (b) What is superelevation? How it is provided on highway? Write minimum and maximum values of superelevation. [05] 2

Q - 4 Attempt any one. [05]

(i) Write about various road patterns with sketch. 1 1

(ii) Define camber. What are the various types of the camber? 1

SECTION - II

Q - 1 Short Question (Any Five) [05] 1

(i) What is ESWL?

(ii) What is CBR?

(iii) What is elongation index?

(iv) Which IRC code is used for flexible pavement design?

(v) Which test is performed to determine grade of bitumen?

(vi) Which test is performed on bituminous mix?

(vii) What is WBM?

Q - 2 (a) Sketch neat and labelled cross section of flexible and rigid pavement. [05] 1 1

Q - 2 (b) Discuss about materials used in highway construction. [05] 2

OR

Q - 2 (a) Discuss about wheel load factors considered in pavement design. [05] 1 2

Q - 2 (b) List the tests carried out on highway materials to check quality and properties of materials. [05] 2

Q - 3 (a) List types of traffic signs. Sketch 2 signs for each category with label. [05] 2 1

Q - 3 (b) What are the types of intersection? Which movements of traffic is observed at intersections? [05] 2

OR

Q - 3 (a) What is LoS? Explain categories of LoS. [05] 2

Q - 3 (b) Discuss about types of markings with neat and labelled sketches. [05] 6 2

Q - 4 Attempt any one [05]

(i) What are the causes of accident? What are the measures to prevent accidents? 4 2

(ii) How to collect data for traffic? 3 2

CO : Course Outcome Number

BTL : Blooms Taxonomy Level

Level of Bloom's Revised Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create