

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)*

UG/PG DEGREE END SEMESTER THEORY EXAMINATIONS, APRIL/MAY 2026

*Fourth Semester**Civil Engineering*

UCET24403 - HIGHWAY AND RAILWAY ENGINEERING

*Regulations - 2024**Duration : 3 Hrs**Maximum : 100 Marks***PART - A (ANSWER ALL QUESTIONS) (Marks 10*2=20)**

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
1.	Name the different types of roads.	L1	1	2
2.	Mention the factors influencing highway alignment.	L2	1	2
3.	Define horizontal curves in road design. What is their significance?	L1	2	2
4.	List the primary components of pavement.	L1	2	2
5.	Outline the term "subgrade" in the context of pavement construction.	L1	3	2
6.	Write the significance of types of the concrete used in highway pavement construction.	L2	3	2
7.	Define "sleepers" and discuss their role in maintaining track stability.	L2	4	2
8.	Identify the primary function of railway rails in the permanent way.	L2	4	2
9.	Recall turnout in railway terminology.	L1	5	2
10.	What types of rolling stock are commonly used in Indian Railways?	L1	5	2

PART - B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a Define and classify highways based on different criteria such as function, traffic volume, and ownership with examples. Or	L2	1	16
	b Examine the socio-economic factors that influences highway alignment decisions.	L2	1	16
12.	a Explain the concept of horizontal curves in road design. How do they impact vehicle dynamics? Or	L2	2	16
	b i What factors influence the choice between flexible and rigid pavement for a specific project?	L2	2	8
	ii How does road geometry influence safety and operational performance? Provide examples.	L2	2	8

13.	a	Compare and contrast the processes and considerations involved in the construction of each type of pavement with advantages and disadvantages.	L3	3	16
	Or				
	b	Discuss the various materials used in highway construction. Include their properties, and the testing methods used to evaluate their suitability for flexible and concrete pavements.	L3	3	16
14.	a	Discuss the importance of rails in the permanent way of a railway track. What are the different types of rails used and how do they affect train operations?	L2	4	16
	Or				
	b	Discuss the applications of signalling systems in railway operations. What are the different types of signalling used, and how do they ensure train safety?	L2	4	16
15.	a	Explain the concept of track circuiting in railway signaling systems and its importance for safety and control in train operations.	L2	5	16
	Or				
	b i	Discuss the pivotal role of Indian Railways in the economic and social development of the country.	L2	5	8
	ii	Discuss the importance of regulatory frameworks in ensuring safety and efficiency in railway operations.	L2	5	8