Unit-5

S.No	Questions	BT	CO	PO
	Part -A (Short Answer Questions)			
1.	What are the special requirements of train lighting systems?	L2	CO5	1
2.	Why is a constant voltage supply necessary for train lighting?	L1	CO5	1
3.	What is meant by unidirectional polarity in train lighting systems?	L1	CO5	1
4.	Explain the principle of the single battery train lighting system.	L1	CO5	1
5.	What is the function of an axle-driven generator in train lighting?	L1	CO5	1
6.	Explain the double battery parallel block system.	L1	CO5	1
7.	State the advantages of the double battery system over the single battery system.	L1	CO5	1
8.	What are the main components of coach wiring in train lighting?	L1	CO5	1
9.	How is lighting obtained from the 25 kV AC traction supply?	L1	CO5	1
10.	Compare battery-operated train lighting and 25 kV AC supply-based train lighting.	L1	CO5	1

S.No	Questions	BT	CO	PO
	Part -B (Long Answer Questions)			
1.	Explain the special requirements of train lighting systems in railway coaches.	L3	CO5	2
2.	Discuss the factors that must be considered while designing a train lighting system.	L3	CO5	2
3.	Explain the importance of reliability, safety, and voltage regulation in train lighting.	L3	CO5	3

4.	Explain the necessity of obtaining unidirectional polarity and constant output in train lighting systems.	L4	CO5	3
5.	Discuss various methods used for obtaining constant voltage and unidirectional polarity in railway coach lighting.	L2	CO5	2
6.	Explain the problems associated with variable generator speed and their effect on train lightin	L3	CO5	3
7.	Explain the construction and working of the single battery train lighting system with a neat diagram.	L2	CO5	2
8.	Discuss the advantages and disadvantages of the single battery system.	L2	CO5	2
9.	Explain the charging and discharging operation of the battery in a single battery lighting system.	L3	CO5	3
10.	Draw the schematic diagram of a single battery train lighting system and explain its operation under: • Normal running condition • Low-speed condition • Stationary condition	L4	CO5	2