Code No: R1922014 **R19** SET - 1

II B. Tech II Semester Regular Examinations, August/September - 2021
TRANSPORTATION ENGINEERING - II
(Civil Engineering)

Time: 3 hours Max. Marks: 75

Answer any **FIVE** Questions each Question from each unit
All Questions carry **Equal** Marks
~~~~~~~~~~~~~~~~~~~~~~~~~

1	a)	Illustrate the functions and requirements of sleeper..	[8M]
	b)	Discuss about the various theories related to creep.	[7M]
		Or	
2	a)	With the help of a neat sketch, show the various components of a typical Railway track.	[8M]
	b)	Explain the following terms (i) Track modulus, (ii) Coning of Wheels. Draw neat sketches, wherever necessary.	[7M]
3	a)	Write a note about - (i) Ruling gradient and (ii) Pusher gradient.	[8M]
	b)	Calculate the super elevation, maximum permissible speed and transition length for a 4 degree curve on a high speed BG section with a maximum allowable speed of 100 kmph. Assume the equilibrium speed to be 70 kmph and the booked speed of the goods train to be 45 kmph.	[7M]
		Or	
4	a)	What are the basic requirements of an Ideal railway alignment?	[8M]
	b)	A rising gradient of 1 in 120 meets a falling gradient of 1 in 230 on a group A route. The point of intersection has a chainage of 1000 m and its R.L. is 135 m. Calculate the length of the vertical curve, the R.L. and the chainage of the various points in order to set a curve at this location.	[7M]
5	a)	Explain the concept of semaphore signal with a neat sketch.	
	b)	Explain the clarification of signal.	
		Or	
6	a)	What essential purposes are served by Signaling and Interlocking? What do you understand by route relay interlocking?	[8M]
	b)	Two BG tracks cross each other at an angle of 1 in 10. Calculate the important dimensions of the diamond crossing.	[7M]
7	a)	Explain the various Surveys to be conducted and the data to be collected for Airport site selection	[8M]
	b)	The runway length required for landing at sea level in standard atmospheric conditions is 3000 m. Runway length required for takeoff at sea level in standard atmospheric conditions is 2500 m. Aerodrome reference temperature is 25° C and that of the standard atmosphere at aerodrome elevation of 150 m is 14.025° C. If the effective runway gradient is 0.5 percent, determine the runway length to be provided	[7M]
		Or	
8	a)	Explain in detail the causes for airfield flexible pavement failures.	[8M]
	b)	What data is to be collected for the design of sub surface drainage system for an airport?	[7M]
~~~~~~~~~~~~~~~~~~~~~~~~~

9 a) What are the various services that are required for the maintenance of shipping terminals? [8M]

b) What is Dredging? Classify the different types of dredging works. [7M]

Or

10 a) Define (i) Semi diurnal tides, (ii) Mixed diurnal tides, (iii) Neap tides and (iv) Age of tide. [8M]

b) Write short notes about (i) Transition sheds and (ii) Work houses. [7M]