



REGISTRATION NUMBER

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## SRINIX COLLEGE OF ENGINEERING

1<sup>ST</sup> INTERNAL EXAMINATION-2021-22

Subject-RAE

Semester-5<sup>TH</sup>

Branch-CE

Full Mark-60

Time-2.00Hrs

### ANSWER ALL QUESTIONS

(PART-A)

[2X10]

1. Write short notes on (i) Broad gauge (ii) metre gauge (iii) narrow gauge .
2. What do you mean by hauling capacity of locomotive?
3. Explain sleeper spacing and sleeper density.
4. Write short note on sections of ballast layers.
5. What do you mean by cant deficiency.
6. Explain what do you mean by buckling of rails?
7. What do you mean by weighted average?
8. What is runway and taxiway?
9. Why hanger is provided on airport?
10. What do you mean by permanent way ?

### ANSWER ANY FOUR QUESTIONS (PART-B)

(5X4)

1. Using a sleeper density of M+5, find out the number of sleepers required for constructing railway track 640 meters long. (B.G. track).
2. If the ruling gradient is 1 in 150 on a particular section of broad gauge and at the same time curve of 4 degree is situated on this ruling gradient what should be the allowable ruling gradient?
3. If a 8° curve track diverges from a main curve of 5° in an opposite direction in the layout of a B.G. yard, calculate the super-elevation and the speed on the branch line, if the maximum speed permitted on the main line is 45 kmph
4. What is wind rose diagram and Briefly write down its uses?
5. Write short notes on Runway lighting.

### ANSWER ALL QUESTIONS (PART-C)

(10X2)

1. (i) A locomotive on M.G. track has three pairs of driving wheels each carrying 20 tonnes. What maximum load can it pull on level track with curvature of 2° at 50 kmph?  
(ii) What points should be considered for good performance of wooden sleepers in a railway track?
2. Calculate the maximum permissible train load that can be pulled by a locomotive having four pairs of driving wheels carrying an axle load of 24 tonnes each. The train has to run at a speed of 80 kmh on a straight level track (B.G). Also calculate the reduction in speed, if train has to climb a gradient of 1 in 200. If train climbs the gradient with a 2° curve then what would be reduction in speed?

