REGISTRATION NUMBER | | | | | | | | | | |

SRINIX COLLEGE OF ENGINEERING

1st INTERNAL EXAMINATION-2019

Subject-**ATE** Semester-**6TH** Branch-**CIVIL**

Full Marks-**30** Time-**1.30Hrs**

ANSWER ALL QUESTIONS (PART-A) **[2X5]**

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. Explain what do you mean by buckling of rails?

ANSWER ANY TWO QUESTIONS (PART-B) **(6X2)**

1. Using a sleeper density of M+5, find out the number if sleepers recuried for constructing a railway track 640 metres long.(B.G. track).
2. If theruling gradient is 1 in 150 on a particular section of broad gauge and at the same time curveof 4 degree is situated on this ruling gradient what should bethe allowable ruling gradient?
3. If a 8^0 curve track diverages from a main curve of 5^0 in an opposite direction in the layout of a B.G. yard,calculate the superelvation and the speed on thebranch line,if the maximum speed permitted on the main line is 45kmph.

ANSWER ANY ONE QUESTION (PART-C) **(8X1)**

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 2^0 at 50 kmph?
   (ii) What points should be considered for good performanceo woden sleeper s in a railway track?
2. Calculate the maximum permissible train load that can be pulled by a locomotive having four pairs of driving wheels carryng an axle load of 24 tonnes each.The train hasto run at a speed of 80kmh on a straight level track (B.G). Also calculatethe reduction in speed,if train has to climb a gradient of 1 in 200.If train climbs the gradient with a 2^0 curve then what would bereduction in speed?