

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
M.Tech. Winter 2019-20 Examination

Semester: 2
Subject Code: 203211181
Subject Name: Railway Infrastructure Planning and Design

Date: 18-12-2019
Time: 2:00 pm to 4:30 pm
Total Marks: 60

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

- Q.1** A) Enlist the elements of geometric design of railway track and explain “Negative Super elevation” (05)
with detailed neat sketch.
B) Find out the number of sleepers required for the construction of BG track 900m long using (05)
sleeper density $n+5$.
C) What is permanent way? What are the requirements of ideal rail. (05)
- Q.2** Answer the following questions. (Attempt any three) (Each five mark) (15)
A) Enlist the classes of Railway Stations and Explain Block stations.
B) Why are objective of signaling? Enlist the classification of signal.
C) From a layout of B.G. track, 6° curve branches off from a 3° main curve in an opposite direction.
If speed is restricted to 35 kmph on branch line and permissible cant deficiency is 75mm.
determine the speed restriction on main line.
D) Define Gradient. Explain any one in detail.
- Q.3** A) Explain the methods to reduce the rail wears. (07)
B) Draw the figure of any four from the following: (08)
i. Coning of wheels
ii. Fish plate & Fish bolts.
iii. Screw Spike & Hook bolt
iv. Right hand turnout
v. Scissors crossovers
vi. Ash pit
- OR**
- B) Define interlocking and explain the principle of interlocking. (08)
- Q.4** A) Write a short note on Types of Yards. (07)
- OR**
- A) Write a short note on C.T.C. system and A.T.C. system. (07)
B) Explain in detail MAGLEV vehicles with the help of neat sketch. (08)