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MANIPAL INSTITUTE OF TECHNOLOGY
MANIPAL
(A constituent unit of MAHE, Manipal)

V SEMESTER B.TECH. (AUTOMOBILE ENGINEERING)

END SEMESTER EXAMINATIONS, NOV/DEC 2018

SUBJECT: RAILWAY ENGINEERING [AAE 4030]

REVISED CREDIT SYSTEM
(26/11/2018)

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

- ❖ Answer **ALL** the questions.
- ❖ Missing data may be suitable assumed.

- 1A.** List the different modern surveying techniques used in railway for difficult terrain. **(03)**
- 1B.** Enumerate the functions of commission of Railway safety. **(03)**
- 1C.** Mention the factors responsible for selection of good alignment of railway track. **(04)**
- 2A.** What are the conditions suitable for implementing the Broad-gauge railway track. **(02)**
- 2B.** Describe the various methods used to reduce wear of rails. **(03)**
- 2C.** Determine the quantity of earth work for an embankment for a railway track of 150 m long and 10 m wide at the top. Side slope is 2:1 and depths at each 30 m interval are 0.60 m, 1.2 m, 1.4 m, 1.6 m, 1.4 m and 1.6 m. **(05)**
- 3A.** Write the functions of Subgrade in the railway track. **(03)**
- 3B.** What are the remedial measures adopted to improve the load carrying capacity of natural ground. **(03)**
- 3C.** Discuss the merits and demerits of usage of Wooden sleepers in Railway track. **(04)**
- 4A.** List the components available in Switch of railway track. **(02)**
- 4B.** Compare and sketch the 'A' class Railway station with 'C' class Railway station. **(04)**

- 4C.** Enumerate the remedial measures for different types of railway accidents. **(04)**
- 5A.** Explain the recommended maintenance required for the railway track. **(03)**
- 5B.** Elaborate the safety measures available on Indian railways. **(03)**
- 5C.** Explain the factors responsible for rehabilitation and renewal of railway track. **(04)**