

**Th-3 RAILWAY & BRIDGE ENGINEERING**

**Full Marks: 80**

**Time- 3 Hrs**

**Answer any five Questions including Q No.1& 2  
Figures in the right hand margin indicates marks**

1. Answer **All** questions 2 x 10
  - a. Define Gauge and mention different types of gauges.
  - b. Define Afflux.
  - c. What are the different methods for the determination of flood discharge?
  - d. Enlist the different types of railway joints
  - e. Define point and crossing.
  - f. Differentiate between Cant Excess and Cant deficiency.
  - g. Define wing wall and classify them.
  - h. State the requirement of rail alignment.
  - i. Define creep and mention its causes in railways.
  - j. What are the functions of bearing in a bridge?
  
2. Answer **Any Six** Questions 6 x 5
  - a. Mention the requirement of good ballast.
  - b. Write down the requirement and characteristics of an ideal bridge site.
  - c. Explain different pile driving methods.
  - d. Draw the figure of left hand turnout and label it neatly.
  - e. Define caissons and explain its types briefly.
  - f. Define fixtures and fastening and explain its function.
  - g. What do you mean by permanent way? Mention the requirement of ideal permanent ways.
  
3. What are the essentials of track maintenance? Briefly explain the procedure and advantages of track maintenance. 10
4. Describe different components of a bridge with neat sketch. 10
5. Explain various types of crossing used on Indian railways. 10
6. Define sleeper. Write down function and classification of sleepers used in Indian railways. 10
7. What are the different bridge foundations? Describe raft and open foundation 10