

SIXTH SEMESTER DIPLOMA EXAMINATION IN ENGINEERING /  
TECHNOLOGY—MARCH, 2015

**TRANSPORTATION ENGINEERING**

(Common to CE, EN and WR)

[Time : 3 hours

(Maximum marks : 100)

PART—A

(Maximum marks : 10)

Marks

I Answer the following questions in one or two sentences. Each question carries 2 marks.

1. What is meant by 'Right of Way' of a road ?
2. How is the traffic volume expressed in a mixed traffic ?
3. List the classification of railway based on the track gauge.
4. Differentiate between abutment and pier of a bridge.
5. Differentiate between a harbour and port.

(5x2=10)

PART—B

(Maximum marks : 30)

II Answer any *five* of the following questions. Each question carries 6 marks.

1. What is a transition curve ? Where it is provided ? What is the purpose of providing a transition curve ?
2. What are the factors to be considered while fixing the alignment of a road ?
3. Differentiate between mandatory, cautionary and informatory signals with regard to their objectives. Give one example for each.
4. Sketch different situations of at-grade intersections.
5. Draw the cross section of the permanent way and explain the function of each component.
6. What is the function of points and crossings ? Draw a neat sketch of a right hand turn out.
7. What are the factors to be considered while fixing the alignment of bridge ?

(5x6=30)

## PART—C

(Maximum marks : 60)

(Answer *one* full question from each unit. Each full question carries 15 marks)

## UNIT – I

- III (a) Why road development is considered as vital for a country ? 5  
 (b) How map study will help in road planning ? 5  
 (c) What is meant by mixing different modes of traffic ? What is its advantage ? 5

OR

- IV (a) What are the details to be collected during the engineering survey for a new road ? 5  
 (b) What are the data to be collected during reconnaissance survey for road ? 5  
 (c) What is the objective of final location survey ? 5

## UNIT – II

- V (a) Where 'Hair Pin Bends' are provided ? Why it become inevitable ? Show a sketch. 5  
 (b) Differentiate between Pre-mix Macadam and penetration Macadam (grouted Macadam) types of road construction. 5  
 (c) Where an intercepting drain is provided in a hilly road ? What is its function ? Draw a sketch. 5

OR

- VI (a) What is the advantage of providing rotary islands at intersections ? 5  
 (b) How is the traffic volume study conducted ? Mention its objects. 5  
 (c) What are the advantages of grade separation at intersections ? 5

## UNIT – III

- VII (a) What is Ballast ? What are its functions ? 5  
 (b) Differentiate between a Way side station, Junction Station and Terminus station with an example for each in Kerala. 5  
 (c) What is meant by interlocking ? What is its objective ? 5

OR

- VIII (a) What are the different types of rail joints ? Discuss their merits and de-merits. 5  
 (b) What are the duties of a permanent way inspector ? 5  
 (c) What are the different types of signals used in railway ? Explain the function of any four. 5

## UNIT—IV

- IX (a) Sketch the shape of any three types of bridge piers and wing walls. 5  
(b) How bridges are classified by IRC ? 5  
(c) Draw a layout of an air port and associated component. 5

OR

- X (a) Sketch the shape of a Bow string bridge and explain its importance. 5  
(b) When it become necessary to construct a tunnel ? What are its uses ? 5  
(c) Explain what is dock mention its types and function. 5
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