C 22569 (Pages : 3) Name....................................

Reg. No....................................
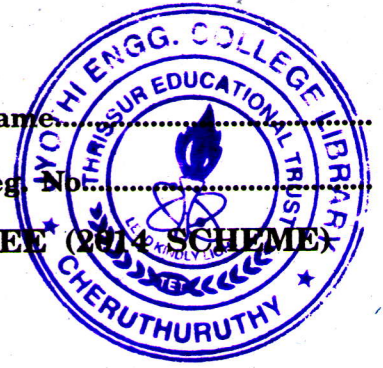
SIXTH SEMESTER B.TECH. (ENGINEERING) DEGREE (2014 SCHEME) EXAMINATION, APRIL 2017

Civil Engineering

CE 14 602—TRANSPORTATION ENGINEERING—II

Time : Three Hours   Maximum : 100 Marks

Part A

Answer any **eight** *questions.*

1. Write short notes on coning of wheels?

2. Explain functions and requirements of ballast.

3. Explain about points and crossings.

4. Write short notes on fouling marks and turn table.

5. Explain different types of lining in the tunnel.

6. Difference between dry dock and wet dock.

7. State various navigational aids illustrating their functions and working.

8. Explain quays and piers..

9. Write notes on Intelligent Transportation system.

10. Explain the benefits of highway users.

                                                                (8 × 5 = 40 marks)

Part B

Answer **all** *questions.*

11. (a) (i) Draw a typical cross section of a permanent way. Discuss in brief the basic functions of various components of a railway track

                                                                (8 marks)

    (ii) Compare the different types of sleepers. Give all details.

                                                                (7 marks)

Or

Turn over

(b) (i) A curve of 900m radius exist on Chennai gudur rajdhani route with max. Sectional speed as 110 kmph and speed of goods train as 75 kmph. Calculate the max. Permissible speed over the curve and also the transition length required.

(8 marks)

(ii) What is superelevation ? Why is it necessary to provide superelevation on the curves of a railway track ?

(7 marks)

12. (a) (i) Write a note on stations and yards.

(8 marks)

(ii) Draw a neat diagram of simple right hand or left hand turnout and show its various component parts. Explain the working principle of the turnout.

(7 marks)

Or

(b) (i) Explain Different methods of tunneling in hard rocks and soft soils.

(8 marks)

(ii) Write a short notes on TBM.

(7 marks)

13. (a) (i) Briefly explain the classification of Harbours.

(8 marks)

(ii) Explain about general planning of port.

(7 marks)

Or

(b) (i) Write down the design considerations of mound breakwaters and its advantages.

(8 marks)

(ii) Explain different types of fenders.

(7 marks)

14. (a) (i) Explain salient features of first, second, third and fourth road developments plans.

Or

(b) (i) Explain methods of economic evaluation of highway projects.

(8 marks)

(ii) Calculate the annual cost of a stretch of highway from the following particulars.

(7 marks)

Item	Total cost Rs. in lakhs	Estimated life, years	Rate of interest %
Land	12.0	100	6
Earth work	9.0	40	8
Bridge and culverts	7.5	60	8
Pavement	14.0	15	10

The average cost of maintenance of the road is Rs. 2 lakhs per year.

[4 × 15 = 60 marks]