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[01 – 4220]

IV/IV B.E. DEGREE EXAMINATION.

Second Semester

Civil Engineering

TRANSPORTATION ENGINEERING — II

(Common with Dual Degree program in Civil Engineering)

(Effective from the admitted batch of 2006–2007)

Time : Three hours Maximum : 70 marks

Question No. 1 is compulsory.
Answer any FOUR from the remaining.
All questions carry equal marks.

1. (a) What is a Marshalling yard? State significance.

(b) What are the advantages of welding of rails?

(c) Why is it necessary to provide adequate drainage facilities for a railway track?

(d) What are the requirements of a good harbour?

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(e) What are Beacon lights?

(f) What are the methods of ventilation during construction and operation?

(g) What is "Cant deficiency"?

2. (a) What are the various rail failures? Discuss them with neat sketches.

(b) What are the functions of interlocking? Discuss the various methods of interlocking.

3. (a) How do you define the superelevation? What are the objectives of providing superelevation on curves of a railway track?

(b) A 8° curve track diverges from a main curve of 5° in an opposite direction in the layout of a B.G. yard. Calculate the superelevation and speed on the branch line if the maximum speed permitted on the main line is 45 kmph.

4. (a) What is a transition curve? What is the necessity of providing a transition curve in railways?

(b) What are navigational aids in ports and harbours? Draw neat sketches of different types of navigational aids.

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5. (a) What are the points and crossings? Draw a neat sketch of left hand turnout on a B.G. track and show them in all important components.

   (b) Draw a neat sketch of port showing various components.

6. (a) What are the methods adopted in draining the water from tunnels?

   (b) Explain the factors considered for selection of site for ports.

7. (a) Explain the various methods adopted for tunneling in hard ground.

   (b) Explain the different types of Breakwaters with sketches.

8. Write short notes on any THREE of the following :

   (a) Alignment of tunnels

   (b) Track circuiting

   (c) Rail fixtures and Fastenings

   (d) Natural phenomenon

   (e) Creep of rails.
