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Code No: R32016 **R10** **Set No: 1**

III B.Tech. II Semester Supplementary Examinations, January -2014

TRANSPORTATION ENGINEERING-II

(Civil Engineering)

Time: 3 Hours **Max Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks
*****

1. a) What are the requirements of an ideal permanent way? Explain.
   b) What is 'creep of rails'? Briefly discuss the theories related to the creep of rails.

2. What are the different gradients adopted in the geometric design of a railway track? Explain.

3. What is a 'crossing'? What are the requirements of a good crossing ? Explain. Also give a neat sketch of an acute angle crossing indicating various components.

4. Write short notes on the following :

   a) Repeater or co-acting signal
   b) Shunting signal
   c) Outer signal
   d) Advance starter

5. What are the requirements of an ideal airport location ? Explain.

6. What kind of defects can be expected in airport pavements and what are the possible causes for such defects ? Explain.

7. Differentiate between a dry dock and a wet dock. What are the requirements and facilities needed for a dock? Support your answer with neat sketches.

8. Describe the various navigational aids used for guiding ships in harbours and ports.

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Code No: R32016 **R10** **Set No: 2**

III B.Tech. II Semester Supplementary Examinations, January -2014

TRANSPORTATION ENGINEERING-II

(Civil Engineering)

Time: 3 Hours **Max Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks
*****

1. Giving a typical cross section of a permanent way on an embankment, indicate various component. Also describe the functions of various components of a permanent way.

2. a) What is the need for providing super elevation on curves of a railway track ?
   b) Derive a relationship between the rate of super elevation, Gauge, speed and radius of the curve.

3. Write short notes on the following :
   a) Switches
   b) Stock rails
   c) Heel divergence
   d) Throw of a switch

4. a) What is a semaphore signal ? Explain the working principle of a semaphore signal.
   b) Explain the modified lower quadrant semaphore signal system.

5. What are the aircraft characteristics that have an influence on the airport design? Describe.

6. a) What are the various parameters to be considered while planning for airport drainage ? Discuss.
   b) What are the methods used for drainage of subsurface water in case of airport pavements? Explain.

7. Differentiate between a port and a harbour. Give the classification of harbours and explain their features with the help of neat sketches.

8. Why dredging is required in ports and harbours ? What are type different types of devices used for dredging purposes ? Describe with the help of neat sketches.

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Code No: R32016 **R10** **Set No: 3**

III B.Tech. II Semester Supplementary Examinations, January -2014

TRANSPORTATION ENGINEERING-II

(Civil Engineering)

Time: 3 Hours **Max Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks
*****

1. a) What are the functions of sleepers in a permanent way? Explain. Also give the requirements of sleepers to fulfill these functions.
   b) What do you understand by 'adzing of sleepers'? Explain.

2. What is safe speed for a given railway track ? On what factors safe speed depends? Explain the formulae used for computing the safe speed on curves as per Indian practice.

3. Give neat sketch of a left hand turnout and indicate various components. Describe how it functions.

4. What is automatic block system of controlling train movements? Explain the working principle of automatic block systems.

5. a) What are the various types of layouts possible for an airport terminal? Explain with the help of neat sketches.
   b) What kind of passenger processing facilities are required in an airport terminal building ? Describe.

6. What kind of defects can be expected in airport pavements and what are the possible causes for such defects ? Explain.

7. a) How the ports are classified ? Explain.
   b) What are the requirements of a good port ? Discuss.

8. Write short notes on the following :
   a) Quays and Wharves
   b) Dredging
   c) Mooring Buoys
   d) Break Waters

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Code No: R32016 **R10** **Set No: 4**

III B.Tech. II Semester Supplementary Examinations, January -2014

TRANSPORTATION ENGINEERING-II

(Civil Engineering)

Time: 3 Hours **Max Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks
*****

1. Explain the role of chairs, keys and fish plates as track fittings and fastenings. Support your answer with neat sketches.

2. a) Explain about negative super elevation and the situation where negative super elevation is required in a railway track.
   b) A 5^0 curve diverges from a 3^0 main curve in a reverse direction in the layout of a BG yard. If the speed on the branch line is restricted to 35 kmph, determine the restricted speed on main line.

3. a) Describe the arrangement of a double turnout in a railway track.
   b) Explain about diamond crossing with the help of a neat diagram.

4. Explain about the working of absolute block system and also discuss the essential procedure to be followed in absolute block system.

5. a) What factors are to be considered while deciding the location and orientation of a runway ? Explain.
   b) Explain the use of wind rose diagram in deciding runway orientation.

6. a) What are the various parameters to be considered while planning for airport drainage ? Discuss.
   b) What are the methods used for drainage of subsurface water in case of airport pavements.

7. a) Why transit sheds and ware houses are needed at ports? Explain. Also discuss the features of Transit sheds and ware houses.
   b) What are the requirements of a good port ? Describe.

8. What are quays, wharves and jetties? Explain the difference among the three. Also describe the structural elements associated with them by giving suitable sketches.

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