APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
SEVENTH SEMESTER B.TECH DEGREE EXAMINATION, DECEMBER 2018
Course Code: CE407
Course Name: TRANSPORTATION ENGINEERING - II
Max. Marks: 100
Duration: 3 Hours

PART A
Answer any two full questions, each carries 15 marks.

1 (a) List and define the component parts of a railway track (5)
(b) Explain the functions and requirements of rails (10)

2 (a) What is the equilibrium cant on a 2\textdegree{} curve on a BG track, if the speed of various trains are 10 trains at 50kmph., 8 trains at 55 kmph. and 4 trains at 60kmph. respectively (5)
(b) Explain the various type of gradient used on railway track? What is grade compensation and why is it necessary? (10)

3 (a) Explain the term ballast less tracks and explain its advantages. (4)
(b) Enumerate the role of Indian railways in National development (6)
(c) What are the factors affecting the selection of gauges? (5)

PART B
Answer any two full questions, each carries 15 marks.

4 a) What are the different types of signals according to location? Illustrate with the help of neat sketch (5)
b) How are railway stations classified? Explain each with neat sketches (10)

5 a) Explain scissors crossover with neat sketch (5)
b) What are the different systems of controlling the movement of trains? Explain the working of absolute block system. (10)

6 a) Discuss on Conventional and Advanced Remedial Aids for preventing railway accidents. (4)
b) Draw a neat sketch of a Left hand turnout and mark its components. (6)
c) Explain how the accidents are classified on Indian Railways. (5)

PART C
Answer any two full questions, each carries 20 marks.

7 a) List the various methods of tunnelling in hard and soft rocks. Explain in detail any one tunnelling method employed in hard strata and soft soil (10)
b) Why shore protection works are necessary? Explain common forms of shore protection works (10)

8 a) Write notes on (10)
   (i) Lighting and Ventilation of tunnels
   (ii) Lining of tunnels

b) State the natural and meteorological phenomena a harbour engineer has to study and briefly mention the effects of these phenomena (10)

9 a) What are the various forces acting on breakwater? (5)

b) Distinguish between (i) Wharf and Pier (ii) Transit shed and ware house (5)

c) Write down the procedure for constructing a tunnel in clayey soil. Explain its advantages. (Draw necessary diagrams) (10)

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