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10CV63

Sixth Semester B.E. Degree Examination, Aug./Sept. 2020
Transportation Engineering – II

Time: 3 hrs.

Max. Marks:100

- Note:** 1. Answer FIVE full questions, selecting at least TWO questions from each part.
2. Assume any missing data suitably.

PART – A

- 1 a. Draw neatly the cross section of a straight broad gauge railway track in cutting for double lane. (06 Marks)
b. Mention the requirements of an ideal permanent way. (06 Marks)
c. Define creep. What are the possible causes and affects a creep? (08 Marks)
- 2 a. With a neat sketches differentiate between double headed rails and flat footed rails. (08 Marks)
b. Name the different types of welding of rails? Explain any one of them. (06 Marks)
c. For rail of 11.89 metre length, calculate the quality of materials required per km length of track. Assume sleeper density to be equal to $(1.0936 n+4)$. (06 Marks)
- 3 a. Explain the following:
(i) Gradients (ii) Grade compensation (iii) Negative super elevation. (06 Marks)
b. What are the objects of providing transition curves? Explain briefly the essential requirements of an ideal transition curves. (06 Marks)
c. Determine the equilibrium cant on a 2° curve on a broad gauge, if 16 trains, 10 trains, 8 trains, 4 trains and 2 trains are running at a speed of 50 kmph, 60 kmph, 70 kmph, 80 kmph and 100 kmph respectively. (08 Marks)
- 4 a. Draw a neat sketch of a left hand turn out and show various parts of it. (06 Marks)
b. With a neat sketch, explain the working of a semaphore signal. (06 Marks)
c. Write short notes on any two of the following:
(i) Turn table (ii) Water columns (iii) Buffer stops. (08 Marks)

PART – B

- 5 a. List and explain the aircraft characteristics, which affect the planning and design of airports. (06 Marks)
b. Explain the factors which influence the airport site selection. (08 Marks)
c. Write a brief note on “Airport Classification”. (06 Marks)
- 6 a. Explain the various geometrics of taxiway. (08 Marks)
b. Write a note on airport marking. (05 Marks)
c. Calculate the actual length of runway from the following data:

Airport Elevation	: RL 100 m
Airport Reference Temperature	: 28°C
Basic length and Runway	: 900 m
Highest point along the length	: RL 97.00
Lowest point along the length	: 92.50

(07 Marks)

- 7 a. Explain various shapes of tunnels with neat sketches. (06 Marks)
b. Mention the object of tunnel lining. List the materials used for lining. (06 Marks)
c. Explain with neat sketches, the operation involved in needle beam method of constructing a tunnel. (08 Marks)
- 8 a. Explain with neat sketches, the natural classification of harbours. (06 Marks)
b. Compare with sketches, wall type break water with mound type break water. (06 Marks)
c. What is dry dock? Explain the construction and uses of dry dock. (08 Marks)

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