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B.Tech. (Civil) Elective - V 7th Semester (G-Scheme)

Examination, December-2022

RAILWAY AND AIRPORT ENGINEERING

Paper - PEC-CELL-419-G

Time allowed : 3 hours/ [Maximum marks : 75

Before answering the questions, candidate should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note: Attempt five questions in all, selecting one question o from each section. Question no. 1 is compulsory. All question carry equal marks.

1. Describe the following :
- (a) Cent deficiency
 - (b) Negative super elevation
 - (c) Airport zoning
 - (d) Creep in sleepers
 - (e) Runway length
 - (f) Sleeper Density

6×2½=15

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Section - A

2. (a) What are the advantages of railway over the other modes of transport? 8
- (b) Discuss the various gauges used in India. Why is it preferable to use Uniform Gauge in a Country. 7
3. (a) Discuss the functions and requirements of various element of railway permanent way. 7
- (b) Explain the permanent way and functions of different components with neat sketch. 8

Section - B

4. (a) What are the types of track junctions with neat and clean diagram? 7
- (b) Explain the absolute block system for controlling the movement of trains. 8
5. (a) Explain the object of signaling. Explain the classification of signal as per their functions. 7
- (b) Draw the left-hand turn-out and discuss its various parts. 8

Section - C

6. (a) What are grade compensation and maximum speed of the curve? 8
- (b) What do you understand by ruling gradient and gradient on station yards? 7

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7. (a) What are Station yards and explain their types with sketches. 7
- (b) Write a short note on maintenance of railway track. 8

Section - D

8. (a) Explain the merits and demerits of air transport. 7
- (b) What are the factors to be considered for the selection of site of an airport? 8
9. (a) The length of runway under standard conditions is 650 m. The airport site has an elevation of 150 m and reference temperature is 28° C. If the runway is to be constructed with an effective gradient of 0.5 %. Determine the correct runway length. 7
- (b) Explain the planning concept of airport building. 8

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