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## Question Paper Code : 50298

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2017

Sixth Semester

Civil Engineering

CE 6604 – RAILWAYS, AIRPORTS AND HARBOUR ENGINEERING

(Regulations 2013)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions.

### PART – A

(10×2=20 Marks)

1. Define creep in sleepers.
2. Why the widening of gauges needed in the curves ?
3. Write the significance of earthwork in railway construction.
4. Define Tunneling.
5. Write the objectives of airport planning.
6. Write the components of an airport.
7. What is airport zoning ?
8. What is meant by basic runway length ?
9. Differentiate 'jetty' and 'dolphin'.
10. List the erosion protection methods in coastal zone.

### PART – B

(5×16=80 Marks)

11. a) i) Define super elevation. List the factors considering in design of super elevation. (8)
- ii) Write a note on negative super elevation and cant deficiency. (8)
- (OR)
- b) i) Explain coning of wheels with neat sketches. (8)
- ii) Compare the different ballast materials used for railway track. (8)

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12. a) Explain briefly the construction and maintenance of railway track. (16)

(OR)

b) Discuss the importance of track drainage. How this achieved ? Explain in detail. (16)

13. a) i) What are the characteristics of a good airport layout ? (8)

ii) Explain the airport master plan. (8)

(OR)

b) List out the factors to be considered for the site selection of a commercial airport. (16)

14. a) The length of runway at standard condition is 2500m. Determine the required runway length at an airport site with the following particulars. (16)

Mean maximum daily temperature =  $44.5^{\circ}\text{C}$

Mean average daily temperature =  $28.3^{\circ}\text{C}$

Elevation of site above MSL = 350 m

Effective gradient of runway = 0.21%

(OR)

b) Briefly explain the night time aids provided at airports. (16)

15. a) i) How harbours are classified ? Explain using examples of Indian harbours. (8)

ii) What is the function of a dry dock ? Explain the working of a floating dry dock. (8)

(OR)

b) Why shore protection is necessary ? Explain the different shore protection works generally carried out. (16)