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**Question Paper Code : 80219**

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B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2016.

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. What are the functions of ballast in a railway track?
2. What do you mean by crossing?
3. What are the methods to improve the poor subgrade soil?
4. What is a marshalling yard?
5. Write a short note on hangar.
6. List the different types of aircraft parking systems.
7. What is the significance of wind rose diagram?
8. State the importance of airport zoning.
9. What are the requirements of a good port?
10. Differentiate between a Pier and a Quay.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Elucidate the advantages of railways over the other modes of transport. (8)  
(ii) Draw a neat sketch of the permanent way and explain the functions of different components. (8)
- Or
- (b) (i) Derive an expression for the relationship between super elevation, gauge and curve in a railway track. (8)  
(ii) Discuss the functions and requirements of various elements of railway permanent way. (8)

12. (a) Explain the operations involved in plate laying by the telescopic method. (16)

Or

- (b) Explain the methods of maintenance of tracks. (16)

13. (a) (i) Discuss the merits and demerits of air transport. (8)  
(ii) Explain the planning concept of airport buildings. (8)

Or

- (b) Explain the factors to be considered for the selection of site for an airport. (16)

14. (a) (i) Explain the different runway geometrics as recommended by ICAO. (8)  
(ii) The length of runway under standard conditions is 600 m. The airport site has an elevation of 100 m and reference temperature is 28° C. If the runway is to be constructed with an effective gradient of 0.5%, determine the corrected runway length. (8)

Or

- (b) (i) What are the basic patterns of runway configurations? Discuss each pattern. (8)  
(ii) Explain the elements of airport lighting with neat sketches. (8)

15. (a) (i) Explain the classification of harbours. (8)  
(ii) Explain the different components of a port with a neat sketch. (8)

Or

- (b) (i) Explain the different types of breakwaters with neat sketches. (8)  
(ii) Explain the salient features of Coastal Regulation Zone Notification 2011. (8)