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Reg. No. :

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Question Paper Code: 99114

B.E./B.Tech. DEGREE EXAMINATION, NOV 2022

Elective

Civil Engineering

19UCE914– RAILWAY AIRPORT AND HARBOR ENGINEERING

(Regulation 2019)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1. For a Broad Gauge route with $(M + 7)$ sleeper density, number of sleepers per rail length is CO3- App
(a) 18 (b) 19 (c) 20 (d) 21
2. Anti-creep anchors are fixed to rails by CO1- U
(a) Wedging (b) spring grip (c) clamping (d) all of the above.
3. The bearing of the runway at threshold is 290° , the runway number is CO3- App
(a) N 70° W (b) 290° (c) 29° (d) W 20° N
4. As per ICAO, the minimum basic runway length for A and E type of airport will be CO1- U
(a) 1500 m and 600 m (b) 2100 m and 750 m
(c) 1500 m and 750 m (d) 2100 m and 600 m
5. When a ship floats at its designed water line, the vertical distance from water line to the bottom of the ship is known as CO1- U
(a) beam (b) depth (c) freeboard (d) draft

PART – B (5 x 3= 15 Marks)

6. Classify the types of gradient in railways. CO4- Ana
7. On a B.G track of 4° curve, equilibrium cant is provided for a speed of 60km/hr. Calculate Value of equilibrium cant. CO3- App
8. State the primary functions of an airport drainage system. CO2- App

9. What is an airport master plan? State the steps in its formulation. CO1- App
10. Mention any two erosion protection Methods in Coastal Zone CO1- U

PART – C (5 x 16= 80Marks)

11. (a) Suggest some type of gradients for the various locations for the laying of track. CO4- Ana (16)
Or
(b) Elaborate the facilities to be provided for passengers at the station yard. CO3- App (16)
12. (a) Analyze the relationship of Super elevation with gauge, Speed and Radius of the curve. CO2- App (16)
Or
(b) List the conventional and modern methods of maintenance of railway track. What are the different types of equipment used? CO2- App (16)
13. (a) For the Construction of new Airport the necessity of various elements of an airport and the functions of each. CO3- App (16)
Or
(b) Discuss in detail the factors affecting the choice of selection of site for an airport. CO4- Ana (16)
14. (a) Write a short note on various corrections used in runway design of an airport. CO4- Ana (16)
Or
(b) What are different systems of Aircraft parking? Explain the suitability of each system. CO5- Ana (16)
15. (a) If you are working in a harbor, For what reasons you adopt Dredging Operation. How dredged Materials are disposed of? List the dredging equipment with neat sketch. CO3- App (16)
Or
(b) Bring out the differences between a port and a harbor. Classify harbors on broad basis. CO5- Ana (16)