



B.E DEGREE EXAMINATIONS: APRIL/MAY 2016

(Regulation 2013)

Sixth Semester

CIVIL ENGINEERING

U13CET604 : Railways, Airports and Harbour Engineering

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. The amount of superelevation for railways is given by
 - a) $e = \frac{GV^2}{27R}$
 - b) $e = \frac{GV^2}{127R}$
 - c) $e = \frac{RV^2}{27G}$
 - d) $e = \frac{127R}{GV^2}$
2. are provided to help transfer railway vehicles from one track to another.
3. is a type of station, in which arrangement is made to cross up an up and a down train or for overtaking of the slower trains by the faster trains.
4. The main purpose of having marshalling yards is
 - a) To provide facilities for the safe movements of the passengers and vehicles of passengers
 - b) To isolate wagons received from various centres in the order of station at which they are to be sent
 - c) For receiving , loading and unloading of goods
 - d) Cleaning repairing and servicing of locomotives
5. The wind data are presented in the form of a chart known as
6. Operation of parking and unparking is difficult in
 - a) Parallel parking
 - b) Right angle parking
 - c) 60° angular parking
 - d) 45° angular parking
7. The centre line of the taxiway is marked with a single continuous colour line
8. The height of any object exceeds above the ground and within 4.5 km distance from the airport reference point will be considered as an obstruction.
 - a) 31m
 - b) 25m
 - c) 41m
 - d) 51m
9. The landing places or platforms in the form of walls built near the shore for vessels are known as
10. is a structure constructed to reflect and dissipate the force of wind-generated waves.
 - a) Sand Dunes
 - b) Wharf
 - c) breakwater
 - d) dredging

PART B (10 x 2 = 20 Marks)

(Answer not more than 40 words)

11. What are the uses of fish plates?
12. What are the types of surveys that are conducted for railway track alignment?
13. What are the requirements of a track drainage system?
14. Define buffer stop.
15. What is windrose diagram?
16. What are the factors to be considered for the Layout of taxiway?
17. What are the cases to be considered for deciding Basic runway length?
18. What are the types of visual aids for aircraft navigation?
19. Differentiate between neap tide and spring tide.
20. Why is dredging so essential in port operations?

PART C (5 x 14 = 70 Marks)

(Answer not more than 400 words)

Q. No. 21 is Compulsory

21. (a) (i) Compare the different types of railway sleepers. (7)
(ii) What are the different types of gradients in railways? (7)
22. (a) How are stations classified? Explain the features of each station. (7)
(OR)
(b) Write short notes on infrastructure for metro and mono railways. (7)
23. (a) (i) List the factors to be considered for the selection of site for a commercial airport. (4)
(ii) Describe the different systems of aircraft parking. (10)
(OR)
(b) Draw a typical layout of any International airport in India and explain its concept. (14)
24. (a) Describe the importance of runway lighting. Explain threshold lighting with the help of sketches. (7)
(OR)
(b) What are the various imaginary zones in the airport and its near vicinity? Mention their significance. (7)
25. (a) (i) What are the requirements of a good port? (6)
(ii) Classify harbours on the basis of utility and explain them. (8)
(OR)
(b) Write a detailed note on break waters. (14)
