Register Number: …….

B.E. DEGREE EXAMINATIONS: NOV/DEC 2010

Fourth Semester

CIVIL ENGINEERING

U07CE405: Railways, Docks & Harbours and Airports

Time: Three Hours **Maximum Marks: 100**

Answer ALL Questions:-

PART A (10 x 1 = 10 Marks)

1. First Indian Railway line was opened for passenger traffic in the year

   a) 1583 b) 1853 c) 1934 d) 1927

2. On Indian railways, the ratio of the weight of the rail and the weight of the locomotive axle is adopted as

   a) 1/500 b) 1/610 c) 1/510 d) 1/550

3. The angle of crossing by Isosceles Triangle method for the number of crossing 1 in 6 is

   a) $9^{o}42'35"$ b) $9^{o}33'37"$ c) $9^{o}31'38"$ d) $9^{o}27'44"$

4. When a passenger platform is completely surrounded by tracks is called an

   a) isolated platform b) island platform c) inland platform d) intact platform

5. The high tides which occur only one time a day is called

   a) Diurnal tides b) Spring tides c) Neap tides d) Tidal bores

6. The platforms lowered into and raised from the water using hydraulic power is called

   a) Graving dock b) Lift dock c) Dry dock d) Floating Dock

7. ICAO stands for

   a) Indian Civil Aviation Organisation b) Italian Civil Aviation Organisation

   c) Independent Civil Aviation Organisation d) International Civil Aviation Organisation

8. The warm-up pads is also called as

   a) Blast Pads b) Holding Apron c) Hanger d) Fillets

9. The distance between the threshold lighting and th runway threshold is

   a) 70 m b) 50 m c) 60 m d) 80 m

10. In an Instrumental landing aid, the middle marker is kept at a distance of ---- from the runway threshold

    a) 7 KM b) 3 KM c) 2 KM d) 1 KM

PART B (10 x 2 = 20 Marks)

11. Define track alignment.

12. State any four functions of sleepers.

13. How crossings are classified?

14. What is a siding?

15. What do you understand about littoral drift?

16. What are the basic requirements of signals?

17. What are factors affecting airport operating capacity?

18. List the various imaginary surfaces around the airport.

19. What is meant by Airway Traffic Control?

20. Define ramp time.

PART C (5 x 14 = 70 Marks)

21. a) Explain the factors influencing the selection of a good railway track alignment.

(OR)

b) Bring out the features, advantages and disadvantages of different types of sleepers.

22. a) Calculate all the necessary elements required to set out a 1 in 8½ turnout taking off from a straight B.G track with its curve starting from the toe of the switch (i.e.) tangential to the gauge face of the outer main rail and pass through theoretical nose of crossing. The heel divergence (d) is 11.4 cm.

(OR)

b) (i) What is interlocking of signals and points? (4)

(ii) Describe the working principle of mechanical method of interlocking. (12)

23. a) Write a detailed note on break waters.

(OR)

b) (i) What are the types of Navigational Aids? (4)

(ii) Discuss about fixed navigation structures and floating navigation aids. (12)

24. a) The length of runway under standard conditions is 1620 m. The airport site has an elevation of 270 m. Its reference temperature is 32.90^{o} C. If the runway is to be constructed with an effective gradient of 0.20 %. Determine the corrected runway length.

(OR)

b) What are the basic patterns of runway configurations? Discuss each pattern.

25. a) Write a detailed notes on:

(i) Terminal Facilities (8)

(ii) Airport Markings (8)

(OR)

b) Describe the different systems of aircraft parking.

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