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Question Paper Code: 45103

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2018

Fifth Semester

Civil Engineering

14UCE503 - RAILWAYS, AIRPORT AND HARBOUR ENGINEERING

(Regulation 2014)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

- The sleepers which satisfy the requirements of an ideal sleeper, are
 - cast iron sleepers
 - R.C.C sleepers
 - steel sleepers
 - wooden sleepers
- For points and crossings maximum size of ballast is
 - 50 mm
 - 40 mm
 - 30 mm
 - 25 mm
- Public phones are provided in the following categories of railway stations
 - D
 - A, B, C
 - F
 - E
- The quantity of stone ballast required per meter tangent length, is
 - 1.15m³
 - 1.14 m³
 - 1.11 m³
 - 1.13 m³
- The meteorological to I.C.A.O the slope of transitional surface at right angles to the centre line of runway, is kept
 - 1 in 4
 - 1 in 7
 - 1 in 6
 - 1 in 5
- The two major components of airport are
 - landing and terminal areas
 - hangar and apron
 - parking and circulation area
 - aerodrome and runway

7. The height of the pilot's eye above the runway surface is assumed
(a) 1 m (b) 3 m (c) 4 m (d) 5 m
8. Two single runways may be arranged so as to have
(a) L-shape (b) T-shape (c) X-shape (d) All of the above
9. Location of soundings by two angles from the shore requires establishing
(a) one range line parallel to shore
(b) one range line perpendicular to shore
(c) two range lines mutually perpendicular
(d) no range line
10. The shape of docks and basins is generally kept
(a) Rectangular ways (b) diamond shape guys
(c) inclined guys (d) all the above

PART - B (5 x 2 = 10 Marks)

11. Define super elevation of railway track.
12. Mention the different tunneling methods in railways.
13. Define cross wind component and wind coverage.
14. Why wind direction indicator is provided?
15. What do you understand by littoral drift?

PART - C (5 x 16 = 80 Marks)

16. (a) Describe in detail the various surveys which are conducted before laying a new railway track. (16)

Or

- (b) A 5° curve branches off from a main curve of 3° in an opposite direction in the layout of a B.G.yard. Determine speed restriction on the main line if speed on the branch line is restricted to 35 kmph. Assume cant deficiency as 75mm. (16)

17. (a) What is meant by crossings? Discuss various types of crossings used in Indian Railways. (16)

Or

(b) Briefly explain about the different types of station yards also explain the functioning and types of marshalling yard. (16)

18. (a) What are the factors which influence the location of an airport? (16)

Or

(b) Mention the standards laid down by ICAO for the layout of the imaginary surfaces. (16)

19. (a) Describe the various elements of the airport lighting. (16)

Or

(b) Briefly discuss the various geometric standards for the taxiway with special reference to the recommendations of the ICAO. (16)

20. (a) Discuss the different types of gravity wharves and the circumstances under which you will select each type. (16)

Or

(b) Write short notes on the following coastal structures

(i) Piers

(ii) Wharves

(iii) Jetties

(iv) Quays. (16)

