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Question Paper Code: 41153

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2016

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
- A kink is made in stock rails, ahead of the toe of switch at a distance of
 - 10 cm
 - 15 cm
 - 20 cm
 - 30 cm
- The rails get out of their original positions due to insufficient expansion gap. This phenomenon is known
 - hogging
 - buckling
 - creeping
 - none of these
- The runway orientation is made so that landing and takeoff are
 - against the wind direction
 - along the wind direction
 - perpendicular to wind direction
 - none of these

6. The bearing of the runway at threshold is 290° , the runway number is
 (a) $N 70^\circ W$ (b) 290° (c) 29° (d) $W 20^\circ N$
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. Which of the following conditions of loading imposes the greatest load on the foundation in case of dry docks?
 (a) When the dock is empty
 (b) When the dock is empty with the ship of maximum tonnage
 (c) Sea walls, revetments and groynes
 (d) Bulk heads, revetments and groynes
10. 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

PART - B (5 x 2 = 10 Marks)

11. What is an ideal alignment?
12. Distinguish between a railway and railway yard.
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) Explain the location survey for a new railway lines. (16)

Or

- (b) Compare the flat-footed rail and bull headed rails. (16)

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

Or

(b) Discuss about the Indian Railways on the fast track of modernization. (16)

18. (a) Describe the factors depends on location of exit taxiways. (16)

Or

(b) Explain the term ponding and its design process. (16)

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

Or

(b) Explain in detail the instrument landing system. (16)

20. (a) Draw the sketch of a typical artificial harbour. (16)

Or

(b) Describe the various types of harbour signals. (16)
