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**Question Paper Code: 35103**

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2020

Fifth Semester

Civil Engineering

01UCE503 – RAILWAYS, AIRPORTS AND HARBOUR ENGINEERING

(Regulation 2013)

Duration: One hour

Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

**(Answer any six of the following questions)**

1. Coning of wheels is provided to
  - (a) check lateral moment of wheel
  - (b) avoid damage to inner faces of rail
  - (c) avoid discomfort to passengers
  - (d) all the above
2. The sleepers which satisfy the requirements of an ideal sleeper are
  - (a) Cast iron Sleepers
  - (b) RCC Sleepers
  - (c) wooden Sleepers
  - (d) Steel Sleepers
3. Track construction involves preparation of
  - (a) Sub grade
  - (b) Plate laying
  - (c) Ballasting
  - (d) All the above
4. The quantity of stone ballast required per meter tangent length, is
  - (a)  $1.15\text{m}^3$
  - (b)  $1.14\text{ m}^3$
  - (c)  $1.11\text{ m}^3$
  - (d)  $1.13\text{ m}^3$
5. The meteorological to I.C.A.O the slope of transitional surface at right angles to the centre line of runway, is kept
  - (a) 1 in 4
  - (b) 1 in 7
  - (c) 1 in 6
  - (d) 1 in 5

6. For the proposed airport, the survey project provides
- (a) Topographic plan
  - (b) Grading Plan
  - (c) drainage plan
  - (d) all the above
7. The maximum length and pavement strength of the runway is that of
- (a) A1
  - (b) B2
  - (c) B3
  - (d) G7
8. According to I.C.A.O all markings on the runways are painted white and on taxiways
- (a) Black
  - (b) red
  - (c) yellow
  - (d) green
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 width of the entrances of the harbours is restricted to
- (a) 100m
  - (b) 125m
  - (c) 150m
  - (d) 180m

PART – B (3 x 8= 24 Marks)

**(Answer any three of the following questions)**

11. What are the functions of sleepers? Describe the different types of sleepers used? (8)
12. Explain ventilation and drainage in tunnels. (8)
13. Discuss air transport characteristics and socio-economic characteristics of catchment areas. (8)
14. Explain the various runway and taxiway markings. (8)
15. Write notes on the following coastal structures (i) piers (ii) wharves (8)