Code No: 117JF

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech IV Year I Semester Examinations, November/December - 2016
TRANSPORTATION ENGINEERING - II
(Civil Engineering)

Time: 3 Hours **Max. Marks: 75**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A.
Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART- A

(25 Marks)

1.a) What is sleeper density? [2]
b) Define "Gauge". What are the popularly used gauges in Indian railways? [3]
c) What is Negative Super elevation? [2]
d) What is Degree of a curve? What is the relation between Degree of Curve and Radius of Curve? [3]
e) What is Hangar? [2]
f) Give classification of Airports as per ICAO. [3]
g) What is the difference between a Harbour and a Port? [2]
h) Differentiate between wharves and jetties. [3]
i) Define ITS. [2]
j) Give a brief description of benefits of ITS. [3]

PART-B

(50 Marks)

2. Giving a neat diagram of a Permanent way on an embankment, indicate various components. Briefly describe the functions of each component. [10]

OR

3. What are the functions of sleepers in a railway track? What are the requirements of good sleepers? [10]

4. If a 6^0 curve diverges from a main curve of 3^0 in opposite direction in a BG track, compute the super elevation and the permissible speed on branch line, if the maximum speed permitted on main line is 50 kmph. Cant deficiency permitted is 7.6 cm. [10]

OR

5. What are the different gradients used in railway alignment? How do you compute grade compensation? [10]

6. Discuss about the various geometric design elements of a runway and the related design standards. [10]

OR

7. The length of runway at sea level under standard conditions at zero gradient is 1500 m. The airport is planned at an elevation of 900 m above sea level. Monthly mean of maximum daily temperature and mean of average daily temperature are 42.5^{0}C and 21.6^{0}C respectively. The effective gradient of proposed runway is 0.5%. Compute the actual runway length after corrections. [10]

8. Give the classification of Harbours. What are the features of a Harbour? While planning a Harbour, what considerations are to be given importance? [10]

OR

9. Define breakwaters. Explain the types of breakwater structures with the help of neat diagrams. [10]

10. Discuss how Advanced Traveller Information Systems can be effectively used in Traffic Management. [10]

OR

11. Giving an overview of ITS implementation in developing countries like India, discuss the issues related. [10]

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