

SECOND SEMESTER M. TECH DEGREE EXAMINATIONN–September- 2014
Branch: Civil Engineering (2013 Scheme)
Stream: TRAFFIC AND TRANSPORTATION ENGINEERING
CTC 2002: PAVEMENT EVALUATION

Time: 3hrs

Max. Marks : 60

Answer any **two** questions from each module

Module I

1. a). Discuss the causes and remedial treatments for potholes and rutting in pavements. (5)
b) Discuss different types of cracks developed on pavement surface and their remedial measures. (5)
2. a) Discuss factors contributing to roughness of pavements. Discuss various types of profile based indices (**Explain any three**) (7)
b). Discuss structural and functional requirements of flexible and rigid pavements. (3)
3. What is Pavement Condition Survey? Explain in detail the steps for conducting a **condition survey and arriving at the PCI** with a sample pavement condition data. (10)

Module II

4. BBD data collected at 10 points on a stretch of 1 Km road is given below. Pavement temperature was 45°C and subgrade soil is clayey, with $PI < 15$ and the annual average rainfall is 1500 mm. Calculate Characteristic Deflection.

Sl.No.	Initial Reading	Intermediate Reading	Final Reading
1	100	64	60
2	100	62	60
3	100	55	52
4	100	55	54
5	100	63	60
6	100	65	62
7	100	57	54
8	100	60	58
9	100	58	56
10	100	57	54

(P.T.O)

Also design a bituminous concrete overlay by IRC method for the above characteristic deflection for a two lane carriage way with traffic at the end of construction period as 3000 cvpd. VDF= 4.5, D=0.75. Design life= 15 years.

(10)

5. Discuss the uses of a pavement condition prediction model. Explain various types of pavement condition prediction models. **(10)**

6. Discuss advantages, uses and various types of non- destructive tests on pavements. **(10)**

Module III

7. a) Discuss the objectives and functions of a Pavement Management System. **(6)**

b) Explain the structure of a PMS. **(4)**

8. a) Differentiate between various pavement management levels. **(6)**

b) Discuss preventive and corrective maintenance actions. **(4)**

9. Write short notes

i) Tools for pavement management

ii) Life Cycle Cost analysis of Pavements **(10)**