

B.Tech. CIVIL ENGINEERING (BTCLEVI)

Term-End Examination

June, 2016

00145

BICEE-018 : PAVEMENT EVALUATION

Time : 3 hours

Maximum Marks : 70

Note : Answer any seven questions. All questions carry equal marks. Assume suitable data wherever necessary. Use of scientific calculator is allowed.

1. Explain the causes of deterioration of flexible pavements. What are the tests commonly used to evaluate pavement condition ? 10

2. Discuss the various types of failures in flexible pavements with the help of neat sketches. 10

3. What do you understand by road roughness ? How is it measured ? Write the purposes of its measurement. 10

4. What is skid resistance ? Discuss the factors affecting skid resistance of pavement surface. 10

5. Describe the objectives of conducting structural evaluation of highway pavements. Name the different methods used for this. 10

6. Explain the principle and procedure of any one method of evaluation of structural strength of pavement. 10

7. In a Benkelman Beam Deflection test conducted on 15 spots, rebound deflection values (in mm) are given below :

1.40, 1.32, 1.25, 1.35, 1.48, 1.60, 1.65, 1.55, 1.45,
1.40, 1.36, 1.46, 1.50, 1.52, 1.45.

Determine the values of

- (i) Mean Deflection
- (ii) Standard Deviation
- (iii) Characteristic Deflection for heavy traffic 10

8. What are the different options of strengthening cement concrete pavements ? Mention their relative advantages. 10

9. What are the various factors which affect the structural condition of flexible and rigid pavement? List the various non-destructive tests to check pavement strength. 10

10. Write short notes on any *two* of the following: 5+5=10

- (a) Pot Hole
 - (b) Mud Pumping
 - (c) Use of Waste Material in Pavement
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