



# MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL

Paper Code : CE(PE)801D Pavement Materials and Design

UPID : 008358

Time Allotted : 3 Hours

Full Marks : 70

*The Figures in the margin indicate full marks.*

*Candidate are required to give their answers in their own words as far as practicable*

## Group-A (Very Short Answer Type Question)

1. Answer *any ten* of the following :

[ 1 x 10 = 10 ]

- (I) Write the importance of California bearing ratio.
- (II) Define: flakiness index.
- (III) Define: softening point of bitumen.
- (IV) What is the purpose of the joint sealing compound?
- (V) What is Modified bitumen ?
- (VI) Mention the desirable properties of highway materials.
- (VII) Define: Textural classification
- (VIII) What is Los Angels abrasion test?
- (IX) What is cationic emulsions ?
- (X) What is the other name for the hinged joints?
- (XI) What is geo synthetic materials?
- (XII) What is crushing strength test ?

## Group-B (Short Answer Type Question)

Answer *any three* of the following :

[ 5 x 3 = 15 ]

2. Describe how impact value of aggregate is found in laboratory. [5]
3. Briefly explain the mechanical properties of bitumen. [5]
4. Write short notes on IRC specification for construction of concrete roads. [5]
5. Briefly explain the applicability of polymer based waste products in different layers of pavement. [5]
6. Enumerate the different laboratory and in-situ procedures for evaluating the mechanical properties of soils for pavement construction. [5]

## Group-C (Long Answer Type Question)

Answer *any three* of the following :

[ 15 x 3 = 45 ]

7. Briefly explain the mechanism of stripping of bituminous binder. [ 15 ]
8. Mention the specifications and method of cement concrete pavement construction. [ 15 ]
9. Briefly explain the applicability of polymer based waste products in different layers of pavement. [ 15 ]
10. Explain the material specification for water bound macadam road. [ 15 ]
11. Explain the social, economic and environmental issues of material uses in road construction. [ 15 ]

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