

# APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

08 PALAKKAD CLUSTER

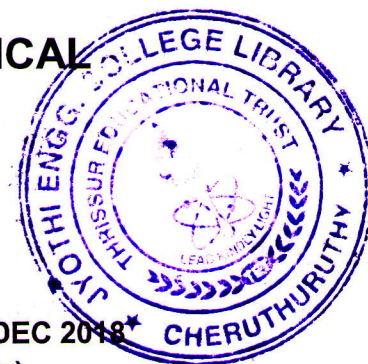
Q. P. code:TB3182

(pages: 1-2 )

Name:

Reg No:

**THIRD SEMESTER M.TECH. DEGREE EXAMINATION DEC 2018\***  
**(Civil Engineering – Transportation Engineering)**



Subject id:08CE7219

**LOW VOLUME ROADS**

Time:3 hours

Max.marks: 60

Answer all six questions. Part 'a' of each question is compulsory.

Answer either part 'b' or part 'c' of each question

(Charts and tables can be used wherever necessary.)

Q.no.	Module 1	Marks
-------	----------	-------

- |     |  |   |
|-----|--|---|
| 1.a | List out the special consideration for hilly areas. List any two codes with number where special consideration and specifications for hilly area is specified. | 3 |
|-----|--|---|

**Answer b or c**

- |   |   |   |
|---|---|---|
| b | What are the contents of a detailed project report of an engineering survey of location of alignment? | 6 |
| c | Explain in detail the format for collecting the road inventory data.                                  | 6 |

Q.no.	Module 2	Marks
-------	----------	-------

- |     |  |   |
|-----|--|---|
| 2.a | What is the three methods of attaining super-elevation? Justify the best method for rural roads. | 3 |
|-----|--|---|

**Answer b or c**

- |   |  |   |
|---|--|---|
| b | Draw a typical intersection of rural road with a major road with specifications.   | 6 |
| c | A valley curve is formed by a descending gradient of 1 in 40 which meets an ascending gradient of 1 in 30. Design the total length of valley curve for a steep terrain so as to fullfil both comfort condition and headlight sight distance for night driving, after calculating the SSD required. | 6 |

Q.no.	Module 3	Marks
3.a	List out the desirable properties of pavement quality bitumen	3

**Answer b or c**

b	Discuss on the tests on soil.	6
c	Discuss on the procedure of lime fly ash stabilization	6

Q.no.	Module 4	Marks
-------	----------	-------

4.a	How is IRC Method different from CBR method of pavement design?	3
-----	---	---

**Answer b or c**

b	Explain the design parameters for the flexible pavement design.	6
c	Design the pavement for construction of a new two lane carriageway for design life 15 years using IRC method. The initial traffic in the year of completion in each direction is 150 CVPD and growth rate is 5%. Vehicle damage factor based on axle load survey = 2.5 std axle per commercial vehicle. Design CBR of subgrade soil=4%.	6

Q.no.	Module 5	Marks
-------	----------	-------

5.a	List out the equipments for road construction.	4
-----	--	---

**Answer b or c**

b	List out the specifications of materials for water bound macadam	8
c	Give the specifications for open graded premix carpet with seal coat.	8

Q.no.	Module 6	Marks
-------	----------	-------

6.a	Explain the quality control procedure for earth work and bituminous macadam	4
-----	---	---

**Answer b or c**

b	Explain the methods and precautions for construction of hot mix bituminous materials.	8
c	Explain the types of maintenance activities of flexible pavement.	8