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P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

Sixth Semester, B.E. - Civil Engineering Semester End Examination; May/June - 2018 Highway Construction and Maintenance

Time: 3 hrs

Max. Marks: 100

Note: Answer FIVE full questions, selecting ONE full question from each unit.

UNIT - I

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|------|---|----|
| 1 a. | Write a note on functions of embankment. | 4 |
| | b. With a neat sketch, explain the components of highway in cutting. | 6 |
| | c. List and explain design elements of highway embankment. | 10 |
| 2 a. | Explain step by step procedure of construction of new highway on embankment in cutting. | 12 |
| | b. Explain various quality control checks during construction of highway embankment. | 8 |

UNIT - II

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|------|---|----|
| 3 a. | Enumerate the steps for construction of Wet Mix Macadam (WMM). | 8 |
| | b. List the specification of materials in construction of; | |
| | i) Course aggregates used in WBM pavement | 12 |
| | ii) Screening of material in WBM pavement | |
| | iii) Binding material in WBM pavement | |
| 4 a. | Write a short note on following : | 6 |
| | i) Stone mastic asphalt ii) Low volume roads | |
| | b. Briefly explain the construction steps for bituminous base course. | 8 |
| | c. List and explain quality control checks during construction of pavement layer using dense graded bituminous mixes. | 6 |

UNIT - III

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|------|---|----|
| 5 a. | Explain general features of plain concrete pavement and reinforced concrete pavement. | 10 |
| | b. List and explain any two types of joints in concrete pavement in detail. | 10 |
| 6 a. | What is scope of construction of cement concrete roads in India? | 4 |
| | b. Explain components and construction of interlocking concrete block pavement. | 8 |
| | c. Briefly explain general features and construction method of continuously reinforced concrete pavement. | 8 |

UNIT - IV

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|------|---|----|
| 7 a. | Enumerate various types of damage and deterioration of roads during rainy season. | 4 |
| | b. Explain causes of distress in flexible pavement. | 4 |
| | c. List and explain classification of high way maintenance works. | 12 |
| 8 a. | Explain general causes of distress in newly constructed flexible pavement. | 8 |

b. Write short notes on maintenance of :

i) Earth shoulder

ii) Road side drains

iii) Pedestrian facility

12

UNIT - V

9 a. Explain field data collection during Benkleman beam deflection method of structural evaluation.

10

b. Explain need and application of structural evaluation studies.

6

c. Write a short note on MERLIN.

4

10 a. Explain functional evaluation of pavement by unevenness index.

10

b. Explain different types of white topping methods.

10

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