Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 80212

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2016.

Fifth Semester

Civil Engineering

CE 6504 — HIGHWAY ENGINEERING

(Regulations 2013)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define central road fund.
2. What are classified roads in Nagpur plan?
3. What are the fundamental principles of alignment?
4. What are the types of sight distance?
5. What are the Requirements of an ideal pavement?
6. Define Equivalent radius of resisting section
7. What is the significance of CBR test?
8. Define elongation index.
9. Define Bleeding.
10. Differentiate Pumping and Ravelling.

PART B — (5 × 16 = 80 marks)

11. (a) Explain Jayakar committee recommendations.

Or

(b) Explain in detail the various factors affecting the design of highway location.

12. (a) Explain the Types of gradient.

Or

(b) A road has a total width of 7.5 m including extra widening on curve and design speed of 60 kmph. Calculate the length of transition curve and its shift on this curve of 200 m radius. Allowable super – elevation is 1 in 150 and pavement is rotated about centerline.

13. (a) 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%.

Or

(b) Explain the design procedure for rigid pavements.

14. (a) What are the Different forms of bitumen.

Or

(b) Explain the California Bearing Ratio Test.

15. (a) What are the possible causes for longitudinal cracking?

Or

(b) Explain in detail about any four methods of strengthening of pavements.
