

Seat No.	
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**B.E. (Civil) (Semester -VII) (Revised) Examination, May - 2016**

**TRANSPORTATION ENGINEERING**

**Sub. Code: 47904**

**Day and Date : Tuesday, 03 - 05 - 2016**

**Total Marks : 100**

**Time :3.00 p.m. to 6.00 p.m.**

- Instructions :**
- 1) **Attempt any three questions from section I and section II.**
  - 2) **Use of non-programmable calculator is permitted.**

**SECTION-I**

- Q1) a)** Explain the scope of Highway Engineering. **[8]**
- b) Explain the considerations while aligning roads on hilly areas. **[8]**
- Q2) a)** Draw cross-section of a road and explain **[8]**
- i) Shoulders
- ii) Camber
- b) Discuss factors governing the highway alignment. **[8]**
- Q3) a)** Explain 'Overtaking Sight Distance'. How O.S.D. is calculated for One-way traffic road and Two-way traffic road? **[8]**
- b) The speeds of overtaking and overtaken vehicles are 80 and 60 kmph respectively. If the acceleration of the overtaking vehicle is 2.5 kmph/sec, calculate the safe overtaking distance for two-way traffic. **[8]**
- Q4) a)** Differentiate between Flexible Pavements and Rigid Pavements with sketches. **[8]**
- b) Enlist the tests to be carried out on bitumen. Explain any ONE test in detail. **[8]**

**P.T.O.**

Q5) Write notes on any THREE:

- a) Traffic Volume Study.
- b) Westergaard's stress equations.
- c) Grade Separations.
- d) CBR Test.
- e) Types of gradient.

**SECTION-II**

Q6) a) Enlist the aircraft characteristics. Explain any TWO characteristics. [8]

b) Explain the factors affecting the site selection for an airport. [8]

Q7) a) Define 'runway'. How orientation of runways is decided? [8]

b) Explain with sketch: [8]

i) Taxiways

ii) Holding Apron

Q8) a) Explain sequence of tunneling operations in hard rock. [8]

b) Explain Shield method of tunneling in soft grounds. [8]

Q9) a) Explain the elements of a harbor with a layout sketch. [8]

b) What are breakwaters? Explain the types of breakwaters with sketches. [8]

Q10) Write notes on any THREE: [18]

- a) Wind Rose.
- b) Visual Aids for an airport.
- c) Runway Patterns.
- d) Runway Markings.
- e) T.B.M.

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