

Total No. of Questions : 12]

SEAT No. :

**P3547**

**[4859]-22**

[Total No. of Pages : 2

**B.E. (Civil)**

**ADVANCED TRANSPORTATION ENGINEERING**

**(2008 Pattern) (Elective - IV)**

*Time : 3 Hours]*

*[Max. Marks : 100*

*Instructions to the candidates:*

- 1) *Answer Q1 or Q2, Q3 or Q4, Q5 or Q6 from Section - I and Q7 or Q8, Q9 or Q10, Q11 or Q12 from Section - II.*
- 2) *Answers to the two sections should be written in separate books.*
- 3) *Neat diagrams must be drawn wherever necessary.*
- 4) *Figures to the right indicate full marks.*
- 5) *Use of logarithmic tables slide rule, Mollier charts, electronic pocket calculator and steam tables is allowed.*
- 6) *Assume suitable data, if necessary.*

**SECTION - I**

**Q1)** Discuss the various types of surveys which are required to be carried out in order to design the traffic and transportation system in the vicinity of an international airport, including the air traffic and terminal designs. **[18]**

OR

**Q2)** Discuss the various types of surveys which are required to be carried out in order to design the traffic and transportation system for the smart cities and integrating them with the existing developed urban areas. **[18]**

**Q3)** Discuss with examples, advantages and limitations of the BRT systems. Suggest measures to overcome these limitations. **[16]**

OR

**Q4)** Discuss with examples, advantages and limitations of the METRO systems. Suggest measures to overcome these limitations. **[16]**

**Q5)** Discuss the various models used by the public sectors in involving Privatization (PPP) so as to develop and maintain the physical infrastructure. What Pre-requisites are necessary for the success of PPP models? Elaborate. **[16]**

**P.T.O.**

OR

**Q6)** Discuss the various financing options and the tools available for evaluating these options so that the economic analysis of the infrastructure development alternatives can be done. Highlight strengths, weaknesses of each option. **[16]**

**SECTION - II**

**Q7)** Discuss the input parameters for designing a signalling system on a national highway and detail out the instrumentation aspects for its proper functioning. Highlight role of ITS in this design and monitoring. **[18]**

OR

**Q8)** Discuss the various methods used by the modern planners for the accurate counting and future forecasts of the road traffic in order to enable them to design an integrated comprehensive transportation network, for the study area. **[18]**

**Q9)** Explain in detail the Benkelmen Beam method used for ascertaining the flexible pavement characteristics, as per the codal provisions. Discuss advantages and limitations of this method. **[16]**

OR

**Q10)** Explain the complete design procedure as per IRC-37, used for flexible pavements for subgrade as well as the topping layers. **[16]**

**Q11)** Compare and contrast between the rigid pavements and the flexible pavements. Explain concepts of **[16]**

- a) flexible rigid pavement and
- b) rigid flexible pavements.

OR

**Q12)** Explain the complete design procedure as per IRC-81, used for designing an overlay. Discuss the functions of any overlay. **[12 + 4 = 16]**

**RRRR**