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**MANIPAL ACADEMY OF HIGHER EDUCATION**  
**THIRD SEMESTER M. ARCH. (URBAN DESIGN & DEVELOPMENT)**  
**DEGREE EXAMINATION – NOVEMBER 2018**

**SUBJECT: ARM 727 – ADVANCED URBAN TRANSPORTATION PLANNING & DESIGN (ELECTIVE - II)**

Wednesday, November 14, 2018

Time: 10:00 – 13:00 Hrs.

Max. Marks: 50

- ✍ Answer any FIVE full questions.
- ✍ Support the answers with neat sketches.
- ✍ Mention assumed data (if any).

1. What are the main factors affecting the landscaping on the Right of Way (R.O.W.)? Explain your answer with reference to the **IRC: SP: 21-2009. Guidelines on Landscaping and Tree Plantation.**

(10 marks)

- 2A. List the hierarchy of roads based on their function.
- 2B. Establish the relationship between mobility and accessibility for the above mentioned hierarchy of roads.
- 2C. What are the types of transport systems available in a city? Explain through the feeder service network.

(2½+2½+5 = 10 marks)

3. Discuss about the following with reference to the code **IRC 067: Code of Practice for Road Signs:**

- 3A. Orientation of Signs
- 3B. Material for Signs

(5 marks × 2 = 10 marks)

- 4A. What is the purpose of traffic volume survey?
- 4B. When and how is it measured, explain.
- 4C. What are the advantages and disadvantages of manual methods?

(2+3+5 = 10 marks)

- 5A. What are the ill effects of parking?
- 5B. What are the statistics that needs to be considered for the purpose of parking study?

(5+5 = 10 marks)

6. **Write short notes on the following:**

- 6A. Light Rail Transit System and Metrorail
- 6B. i) Hair Pin Bend                      ii) Climbing Lane                      iii) Sight Distance
- iv) Vertical Clearance,              v) Berm

(5+(1 mark × 5) = 10 marks)

