USN |  |  |  |  |  |  |  |  |  |  |                    **18CV655**

## Sixth Semester B.E. Degree Examination, Dec.2023/Jan.2024
## Intelligent Transportation Systems

Time: 3 hrs.                                              Max. Marks: 100

*Note: Answer any FIVE full questions, choosing ONE full question from each module.*

### Module-1

**1**  a.  What is Intelligent Transportation System? Describe the major objectives of adopting ITS. **(10 Marks)**

   b.  Explain the advantages of adopting ITS over the conventional transportation system. **(10 Marks)**

### OR

**2**  a.  Explain briefly the following ITS data collection techniques:
     i)  Detectors
     ii)  Automatic Vehicle Location (AVL)
     iii)  Automatic Vehicle Identification (AVI) **(10 Marks)**

   b.  Define GIS (Geographical Information System) Describe briefly how GIS is implemented in ITS. **(10 Marks)**

### Module-2

**3**  a.  What are the different ITS tools which can be used in traffic management systems in a city. **(10 Marks)**

   b.  Explain with flow diagram for concept of a typical system adopted in advanced traveller information system. **(10 Marks)**

### OR

**4**  a.  Mention the ITS applications for commercial vehicle operation. **(10 Marks)**

   b.  Mention the ITS applications in the field of intermodal freight transport system. **(10 Marks)**

### Module-3

**5**  a.  Write a short note on:
     i)  Advanced Public Transport System (APTS)
     ii)  Advanced Rural Transport System (ARTS). **(10 Marks)**

   b.  Explain the major user needs to be provided by ITS in the aspect of travel and traffic management and public transportation management. **(10 Marks)**

### OR

**6**  a.  Explain the following functional areas of ITS.
     i)  Advanced Traffic Management Systems (ATMS)
     ii)  Advanced Vehicle Control Systems (AVCS). **(10 Marks)**

   b.  Explain the ITS operations briefly in regional and project ITS architecture. **(10 Marks)**

### Module-4

**7**  a.  Explain briefly the applications of ITS and sustainable mobility. **(10 Marks)**

   b.  Explain briefly how ITS can be adopted in safety and security. **(10 Marks)**

**OR**

**8** a. Explain a case study on deployment planning and system design, its operation. **(10 Marks)**

b. Explain briefly how ITS can be adopted in technology deployment program. **(10 Marks)**

## Module-5

**9** a. Explain briefly the application of ITS in the following aspects:
   i) ITS in travel demand management
   ii) ITS and road pricing **(10 Marks)**

b. Write short notes on application of ITS in:
   i) Automated highway systems
   ii) Commercial vehicle operations
   iii) Public transportation applications. **(10 Marks)**

**OR**

**10** a. Describe briefly the implementation of ITS in the developed countries of the world.
   **(10 Marks)**

b. Explain the case study of implementation of ITS an developed country. **(10 Marks)**

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