



APJ ABDULKALAM TECHNOLOGICAL UNIVERSITY
08 PALAKKAD CLUSTER

Q. P. Code : TE0821224-I

(Pages: 2)

Name:

Reg. No:

SECOND SEMESTER M.TECH. DEGREE EXAMINATION JULY 2021

Branch: Civil Engineering

Specialization: Transportation Engineering

08CE6224 INTELLIGENT TRANSPORTATION SYSTEMS

(Common to TE)

Time: 2 hour 15 minutes

Max. Marks: 60

Answer all six questions.

Modules 1 to 6: Part 'a' of each question is compulsory and answer either part 'b' or part 'c' of each question.

Q.no.	Module 1	Marks
1.a	Explain the need of ITS with its advantages in various applications.	3
	Answer b or c	
b	ITS is an inter –disciplinary platform intended to solve transportation problems. Justify the statement	6
c	Elaborate how ITS is used to solve a transportation problem in any Indian city.	6
Q.no.	Module 2	Marks
2.a	What is the service provided by the user service system through Pre – Trip information?	3
	Answer b or c	
b	What are the various data collection techniques in ATIS?	6
c	Explain how the Variable Message Signs serve as an interface between traffic management center and roadway system.	6
Q.no.	Module 3	Marks
3.a	Write a short note on Dynamic Speed Adaptation systems.	3

Answer b or c

- b** Elaborate on how ITS uses various communication technologies for vehicle control and safety. **6**
- c** Explain how ITS can help better functioning of toll collection systems. **6**

Q.no. Module 4 Marks

- 4.a** Write a short note on Adaptive Cruise Control. **3**

Answer b or c

- b** Enlist the various categories of in – vehicle sensors. Explain any one category in detail. **6**
- c** Explain how GIS and Positioning Systems are integrated in an ITS with their respective roles. **6**

Q.no. Module 5 Marks

- 5.a** Establish the characteristics of an ideal Automated Highway System (AHS). **4**

Answer b or c

- b** Explain with the aid of a flow chart the 5-layer architecture control system for AHS. **8**
- c** Explain any vehicle platooning system to reinforce the concept of AHS. **8**

Q.no. Module 6 Marks

- 6.a** Enlist fields of application of fleet management and explain any one in detail. **4**

Answer b or c

- b** Establish the relationship between various transportation problems, conventional approach and ITS approach. **8**
- c** Define a major transportation related problem in India. Suggest a suitable ITS solution for the same and enumerate some challenges one might face implementing it. **8**