VASAVI COLLEGE OF ENGINEERING *(Autonomous)*, HYDERABAD
B.E. (CBCS) VI-Semester Main Examinations, May-2019

Intelligent Transportation Systems
(Open Elective-VII)

Time: 3 hours

Max. Marks: 70

*Note: Answer ALL questions in **Part-A** and any FIVE from **Part-B***

Q.No.	Stem of the question	M	L	CO	PO
	Part-A (10 × 2 = 20 Marks)				
1.	List the positive and negative impacts of transportation on society.	2	1	1	1,6
2.	What is visual acuity zone? What is the range of visual acuity zone?	2	1	1	1
3.	Define Level of service.	2	1	2	1
4.	What are the objectives of conducting volume studies?	2	2	2	1
5.	What is GIS?	2	1	3	1
6.	What is the utility of CALM in ITS?	2	2	3	1
7.	What are the strategies adopted for travel demand management?	2	1	4	1
8.	Which user service aims to improve the safety of the transportation system by supplementing drivers' abilities to maintain vigilance and control of the vehicle by enhancing the crash avoidance capabilities of vehicles? List the sub user services under this group.	2	2	4	1,6
9.	Define ITS.	2	1	2	1
10.	What is vehicle reidentification?	2	1	3	1,5
	Part-B (5 × 10 = 50 Marks)				
11.a)	Briefly outline the purpose of the road cross sectional elements that are considered in the design of road and influence the riding quality and safety of road user.	7	2	1	1,6
b)	How do driver characteristics affect the design of road? List the quantifiable factors and non-quantifiable factors of road users that affect the transportation	3	2	1	1,6
12.a)	Explain the ITS Probe vehicle technique for travel time data collection.	5	2	2	1,5
b)	Present the intrusive technologies used for collection of volume data on roads. Explain the working of these technologies and their usage in data collection	5	2	2	1,5
13.a)	What are the components of ITS architecture framework? Explain.	5	2	3	1,5
b)	What is your perception of "Intelligent Transportation System"? How can it be used for the betterment of society?	5	3	3	1,6,7

			M	L	CO	PO
14.a)	What are the user services in travel and traffic management? Explain. How does ATMS integrate technology primarily to improve the flow of vehicle traffic and improve safety?		6	3	4	1,6
b)	What are the components of Commercial vehicle operations in ITS? How can public benefit from these activities in areas such as environmental improvements, quality of travel, lower transportation costs and improved highway safety.		4	3	4	1,6,7
15.a)	Present the most generic functional classification of road systems based on speed and accessibility adopted in India.		6	2	1	1,6
b)	What are the challenges in utilizing intrusive and nonintrusive data collection techniques to provide real time traffic information?		4	2	2	1,5
16.a)	How can ITS be used in parking management?		5	2	3	1,5
b)	Present how ITS can be applied to the rural scenario and improve the standard of living.		5	2	4	1,6,7
17.	Answer any *two* of the following:					
a)	Challenges in adopting ITS in Indian cities		5	3	2	1,6,7
b)	Role of communication systems in ITS		5	2	3	1,5
c)	Application of Advanced Public transportation Management systems		5	2	4	1,,5

M: Marks; L: Bloom's Taxonomy Level; CO: Course Outcome; PO: Programme Outcome

S. No.	Criteria for questions	Percentage
1	Fundamental knowledge (Level-1 & 2)	76
2	Knowledge on application and analysis (Level-3 & 4)	24
3	*Critical thinking and ability to design (Level-5 & 6) (*wherever applicable)	0

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