K. J. Somaiya Institute of Technology, Sion, Mumbai-22
(Autonomous College Affiliated to University of Mumbai)

May-June 2024	
Program: B.Tech Scheme I/II/IIB/III: II	
Regular Examination: LY Semester: VIII	
Course Code: EXDLC8033and Course Name: Autonomous Vehicle	
Date of Exam: 18|05|2024 Duration: 2.5 Hours Max. Marks: 60	

Instructions:
(1)All questions are compulsory.
(2)Draw neat diagrams wherever applicable.
(3)Assume suitable data, if necessary.

		Max. Marks	CO	BT level
Q 1	Solve any six questions out of eight:	12		
i)	What are the usage and feature of Open source car control (OSCC).	2	1	U
ii)	What is the main task of machine perception for AV?	2	2	U
iii)	Define Time triggered communication and state types and example of task in AV.	2	3	U
iv)	List down Learning Classification algorithm.	2	4	R
v)	Define Digital map with one shortcoming.	2	5	R
vi)	Describe the benefit of use case of vehicle in demand.	2	6	U
vii)	State the expression of Intermediate frequency signal and expression for its phase and frequency..	2	2	U
viii)	Explain feature of level 3Autonomous car.	2	1	R
Q.2	Solve any four questions out of six.	16		
i)	Explain system model of Autonomous connected vehicle.	4	1	U
ii)	How CNN is more effective than neural network for image classification.	4	2	AP

iii)	Explain range measurement using FMCW radar.	4	3	U
iv)	Explain role of object dictionary in CANopen protocol.	4	4	U
v)	Explain open loop optimization problem with example.	4	5	U
vi)	Explain Value of characteristic of use cases of interstate pilot using driver for extended availability.	4	6	U
Q.3	Solve any two questions out of three.	16		
i)	List the characteristic defined for use cases of Autonomous vehicle and explain characteristic B:Maximum permitted gross weight	8	1	R
ii)	Explain depth, stride and zero padding in CNN.	8	4	U
iii)	Explain architecture of HD map creation.	8	5	U
Q.4	Solve any two questions out of three.	16		
i)	How Velocity measurement is done with multiple object at same range.	8	2	AP
ii)	Explain CAN protocol layers using Block diagram.	8	3	U
iii)	Explain the use case of interstate pilot using driver for extended availability.	8	6	U

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