(10)

ELEC

BE SEM VIII (Choice Based) Summer 2026

Duration: 3 Hours **Maximum Marks: 80**

21/5/26

N.B.: -

1. Question No 1 is Compulsory
2. Solve any three questions from remaining questions
3. Assume suitable data if required and mention it clearly
4. Figures to right indicate full marks.

Q1 Solve any four of following

(a) Write a short note on GPS. What are the advantages of GPS/IMU fusion? **5**

(b) What is deep learning? How does it differ from machine learning? **5**

(c) What role does computer vision play in autonomous vehicles? **5**

(d) Explain where and how classification and regression are used in an autonomous vehicle system. **5**

(e) What are security issues and technical issues in connected car technology? **5**

Q2 (a) Draw and explain the architecture of an autonomous vehicle system. **10**

(b) Write short notes on RADAR and LiDAR. **10**

Q3 (a) Write a short note on GNSS and explain its application in autonomous vehicle systems **10**

(b) Write short notes on Visual Odometry and HD mapping. **10**

Q4 (a) Describe Motion Planning and Feedback Control for an autonomous vehicle system. **10**

(b) Describe Convolutional Neural Networks and their applications to autonomous vehicle systems. **10**

Q5 (a) What is TensorFlow? How is it useful in autonomous vehicle systems? **10**

(b) Draw and describe the architecture of the planning and control pipeline. **10**

Q6 (a) Write a short note on Direct Short Range Communication (DSRC). **10**

(b) Explain the working and advantages of ADAS. **10**

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