I SEMESTER

M.tech

MID TERM EXAMINATION   *september-2025*

COURSE CODE- AI 5403

COURSE TITLE- ADVANCED DATABASE MANAGEMENT SYSTEMS

Time: 1:30 Hours   *Max. Marks : 20*

Note : All question are compulsory.
All questions carry equal marks.
Assume suitable missing data, if any.

Q.1   Design a generalization–specialization hierarchy for a motor vehicle sales company. The company sells motorcycles, passenger cars, vans, and buses. Justify your placement of attributes at each level of the hierarchy. Explain why they should not be placed at a higher or lower level.   [4][CO2]

Q.2   Consider the relation schema:
STUDENT(StudentID, Name, CourseID, CourseName, InstructorID, InstructorName)
- Identify **functional dependencies**.
- Normalize the relation up to **BCNF**. Show the resulting schemas.

[4] [CO2]

Q.3
a) Give one example of a **schedule** that is conflict serializable?   [2] [CO1]
b) Describe the role of Transaction Processing Monitors?   [2] [CO1]

Q.4   Discuss Weak Levels of Consistency. How does it affect transaction processing.?
[4][CO2]

Q.5   Discuss the role of statistics in estimating query cost and improving query performance.
[4][CO1]

***** END *****