Registration No.: | | | | | | | | | | |

Total Number of Pages: 02 **Course: B.Tech**
Sub_Code: RME5D001

5th Semester Back Examination: 2025-26
SUBJECT: Automobile Engineering
BRANCH(S): MECH, MMEAM
Time: 3 Hours
Max Marks: 100
Q.Code: U289

Answer Question No.1 (Part-I) which is compulsory, any eight from Part-II and any two from Part-III.
The figures in the right-hand margin indicate marks.

Part-I

Q1 **Answer the following questions:** **(2 x 10)**

a) Name important parts of engine system.
b) What is tractive effort?
c) Differentiate between monocoque and body on frame construction.
d) How hydraulic brakes work?
e) Why gearbox is used?
f) Differentiate between AT and AMT automatic transmission.
g) What is the steering ratio?
h) Which steering system is generally used in passenger cars?
i) What is the voltage a lightning system of car work?
j) What are the types of batteries used in car?

Part-II

Q2 **Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve)** **(6 x 8)**

a) Show with a neat diagram the main parts of the steering system.
b) Write about some important points on motor vehicle act.
c) Explain working of disc brakes.
d) Explain the Hotchkiss drives.
e) Differentiate between a front wheel and a four-wheel drive with neat diagrams.
f) Explain working of torque converter.
g) Explain working of differential with a neat sketch.
h) Draw the front suspension and explain Camber, castor, and kingpin inclination.
i) Explain different battery types used in EV.
j) Differentiate between series and parallel hybrid vehicles.
k) Explain working of fuel cells vehicles.
l) Write about important electronic and electrical components used in solar power vehicles.

Part-III

Only Long Answer Type Questions (Answer Any Two out of Four)

Q3	Explain with a neat sketch the working of the EV power train.	**(16)**
Q4	Draw the Layout of an all-wheel drive transmission system and explain the main function of the different components of the transmission system.	**(16)**
Q5	Explain important functions of double wishbone suspension and Differentiate between independent and dependent suspensions.	**(16)**
Q6	Explain with neat diagrams working and selection consideration of braking system of a car.	**(16)**