

Roll No: 

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

**B. TECH.**  
**(SEM VII) THEORY EXAMINATION 2020-21**  
**AUTOMOBILE ENGINEERING**

**Time: 3 Hours****Total Marks: 100****Note:** Attempt all Sections. If require any missing data; then choose suitably.

**SECTION A**

**1. Attempt all questions in brief. 2 x 10 = 20**

a.	Give the typical specifications of an automobile.
b.	What do you mean by Electronic Engine Management System?
c.	What is meant by traction control?
d.	Why is hydrogen called as secondary energy source?
e.	What is meant by 'dump iron' in framework?
f.	List out the disadvantages of floor mounted gear shift mechanism.
g.	Why slip joint is important?
h.	What are the functions of brake lining?
i.	Define energy intensity.
j.	List the major constituents of natural gas and LPG.

**SECTION B**

**2. Attempt any three of the following: 10x3=30**

a.	Explain the effect of power to weight ratio on the performance of an automobile.
b.	Discuss the frame type chassis construction with neat sketch.
c.	What are the advantages of independent suspension system, explain independent front wheel suspension using torsion bars?
d.	With a schematic layout explain the multi point electronic fuel injection system.
e.	Briefly explain the methods available to control emissions from an automobile.

**SECTION C**

**3. Attempt any one part of the following: 10x1=10**

a.	Explain the main forces which oppose the motion of vehicle.
b.	A single cylinder engine operating at 2000 rpm develops a torque of 8 N-m. The indicated power of the engine is 2.0 kW. Find loss due to friction as the percentage of brake power.

**4. Attempt any one part of the following: 10x1=10**

a.	Explain the following with suitable sketches: (i) Rotary Distributor Type (ii) CRDI
b.	Explain with the help of simple diagram the different types of stub axles.

**5. Attempt any one part of the following: 10x1=10**

a.	Explain the Davis Steering Mechanism? Write its relative merits?
b.	Explain briefly with a neat sketch the steering linkage for a conventional rigid axle suspension.

**6. Attempt any one part of the following: 10x1=10**

a.	Explain with relevant sketches, working of electric windows in an automobile.
b.	Briefly explain electric & hybrid vehicles.

**7. Attempt any one part of the following: 10x1=10**

a.	What are the disadvantages of using alcohol as an alternative fuel?
b.	Discuss the performance & emission characteristics of a C.I. engine fueled with biodiesel & diesel blends.