Name: **Enrolment No:**	UPES UNIVERSITY WITH A PURPOSE

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
Supplementary Semester Examination, July 2020

Course: Automobile Engineering **Semester: VIII**
Program: B.Tech Mechanical Engineering **Time 03 hrs.**
Course Code: MHEG 363 **Max. Marks: 100**

Instructions: All Questions are compulsory

SECTION A

S. No.		Marks	CO
Q 1	Enumerate the factors that affects the rolling resistance of a vehicle.	**4**	**CO1**
Q 2	Determine the firing order/s for a 6-cylinder in-line SI engine.	**4**	**CO3**
Q 3	Differentiate fluid flywheel and torque converter.	**4**	**CO2**
Q 4	Enumerate the importance and functions of ignition system, and the choice of lead acid batteries suitable choice for an automobile.	**4**	**CO5**
Q 5	Define the following terms 1.Castor 2. Camber 3. Toe in and out in steering system.	**4**	**CO4**

SECTION B

Q 6	Enumerate different types of braking systems and explain the working of anyone of them.	**10**	**CO2**
Q 7	Explain the construction of Mc Pherson strut suspension and Swinging Half Axle suspension system	**10**	**CO3**
Q 8	Explain the principle of operation of stator motors and why is permanent magnet field preferred to electro-magnet field for the stator motor? **OR** List and brief any 4 electrical accessories used in an automobile	**10**	**CO5**
Q 9	Explain the principle of correct steering mechanism.why do we need the ackerman steering mechanism over DAVIS mechanism.	**10**	**CO1**

SECTION-C

Q 10	Explain coil ignition. On what principle does a coil; ignition system operates and why is capacitor used across the contact breaker in a conventional coil ignition circuit?	**20**	**CO4**
Q11	Explain in detail the procedure for determining the equation for setting the bottom gear ratio of an automobile transmission system **OR** Describe fluid flywheel and explain in detail the working of torque converter in automatic transmission.	**20**	**CO2**