MODEL QUESTION PAPER

Programmename: 4023 Mechanical Engineering

Course code: **Course name: Automobile Engineering**

Time : 3 Hours *Max.Marks : 75*

1. **Answer all the following questions** **(9 x 1 = 9 Marks)**

1	Carburettor ---------- the fuel in a petrol engine	MO 1.05	R
2	A ---------- lubrication system uses a dipper (scoop) for supplying lubricating oil	MO 1.04	U
3	---------- compensates the angular variations of the propeller shaft	MO 2.03	R
4	A clutch usually is in ---------- position	MO 2.02	R
5	ABS stands for----------	MO 3.06	R
6	The outward tilt of the wheels when viewed from the top is called -----	MO 3.04	R
7	Coil ignition system works on the principle of ----------	MO 3.01	R
8	A fuel cell produces electricity through an electro-chemical reaction that combines -------- and oxygen to form water.	MO 4.03	U
9	An electric drive vehicles source of power is typically stored in and dispensed from --------	MO 4.01	R

2. **Answer any Eight questionsfrom the following** **8 x 3= 24 Marks)**

1	List down the basic components of lubrication system in an IC Engine?	MO 1.04	U
2	Explain thetypes of radiators based on the construction of the core.	MO 1.03	U
3	Differentiate between torque converter and fluid coupling.	MO 2.02	U
4	Discuss about stub axle with a neat figure of any one type.	MO 2.03	R
5	Write a short note onleaf spring suspension.	MO 3.03	U
6	List down the effects of incorrect camber.	MO 3.04	R
7	Differentiate between hybrid vehicle and plug in hybrid vehicle	MO 4.06	U
8	What are the requirements of an IC Engine?	MO 1.01	U
9	Discuss about good clutch requirements.	MO 2.02	U
10	Categorise the universal joint.	MO 2.03	U

3. **Answer all questions from the following (6x 7 = 42 Marks)**

1	Explain different types of water-cooling systems	MO 1.03	U
	OR		
2	Explain fuel system of a diesel engine with layout	MO 1.05	R
3	State the function of rear axle. Explain full floating axle with sketch	MO 2.03	U

	OR		
4	Illustrate the function and working principle of differential.	MO 2.03	U
5	Discuss the properties of lubricants and its purpose in IC engines.	MO 1.04	U
	OR		
6	Illustrate the working of multi point fuel injection system (MPFI)	MO 1.05	U
7	Illustrate steering geometry – camber, caster and, toe in and toe out	MO 3.04	U
	OR		
8	Illustrate the working of Regenerative Braking system	MO 4.04	U
9	Explain the functions of a master cylinder, brake shoes and brake lining.	MO 3.06	U
	OR		
10	What is the function of wheels? Explain disc type wheels.	MO 3.05	R
11	Explain the basics of fuel cell operation with neat figure	MO 4.03	U
	OR		
12	List down the precautions for battery working on electric drive vehicles	MO 4.02	U

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Mark Distribution

Module	Hours/Module (hi)	Marks/Module ($h_i/\sum H^i$) * 123 (±5%)	Type of Questions							
			Part A		Part B		Part C		Total	
			No. of questions	Marks	No. of questions	Marks	No. of questions	Marks	No. of questions	Marks
1	20	41	2	2	3	9	4	28	9	39
2	12	25	2	2	4	12	2	14	8	28
3	15	31	3	3	2	6	3	21	8	30
4	13	26	2	2	1	3	3	21	6	26
Total	60	123	9	9	10	30	12	84	31	123

Cognitive Level Distribution

Cognitive Level	Marks	% of Marks
Remembering	27	22
Understanding	27	22
Applying	69	56
Total	123	100