



PRESIDENCY UNIVERSITY

BENGALURU

Roll No.														
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Make Up Examinations – December 2025

Date: 26 – 12- 2025

Time: 1.00pm to 04.00pm

School: SOE	Program: B. Tech – Mechanical Engineering		
Course Code: MEC1001	Course Name: Fundamentals of Automobile Engineering		
Semester: MK	Max Marks: 100	Weightage: 50%	

CO - Levels	C01	C02	C03	C04	C05
Marks	4	26	26	22	22

Instructions:

- (i) Read all questions carefully and answer accordingly.
- (ii) Do not write anything on the question paper other than roll number.

Part A

Answer ALL the Questions. Each question carries 2marks.

10Q x 2M=20M

1	Define the purpose of engine cooling in IC engines.	2 Marks	L1	C01
2	List two functions of a vehicle differential.	2 Marks	L1	C01
3	What is the importance of the propeller shaft in a rear-wheel drive vehicle?	2 Marks	L2	C02
4	Briefly explain the construction of a rotary distributor-type injection system.	2 Marks	L2	C02
5	State the significance of aerodynamics in reducing vehicle fuel consumption.	2 Marks	L1	C02
6	Mention two methods of lubrication in IC engines.	2 Marks	L1	C03
7	What are the benefits of using a common rail direct injection system?	2 Marks	L2	C03
8	Define turbocharger lag and its impact on vehicle performance.	2 Marks	L2	C03
9	What is the function of a capacitor in a capacitive discharge ignition system?	2 Marks	L2	C04
10	Mention two advantages of using biofuels in automotive applications.	2 Marks	L1	C05

Part B
Answer the Questions

Total 80 Marks.

11.	a.	Explain the construction and operation of a manual gearbox with a suitable diagram.	10 Marks	L2	C03
	b.	Discuss the construction and working of an automatic transmission	10 Marks	L2	C03

or

12.	a.	Illustrate the construction and working of a supercharger in boosting engine performance.	20 Marks	L2	C03
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13.	a.	Discuss the working and advantages of VGT turbochargers in modern vehicles.	20 Marks	L2	C02
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or

14.	a.	Discuss the construction and advantages of thermostat valves in vehicle cooling systems.	10 Marks	L2	C02
	b.	Explain the importance of cooling systems in IC engines and discuss different cooling methods.	10 Marks	L2	C02

15.	a.	Explain the design and advantages of different clutch types used in automobiles.	20 Marks	L2	C04
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Or

16.	a.	Describe the construction and working of a propeller shaft and its components.	20 Marks	L2	C04
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17.	a.	Discuss the advantages of LPG and CNG as alternative fuels for vehicles and what are the benefits of using bioethanol as a fuel.	20 Marks	L2	C05
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Or

18.	a.	Discuss the advantages of overdrive in improving vehicle fuel efficiency and also explain the purpose and operation of overdrive in transmission systems	10 Marks	L2	C05
	b.	Explain the construction and working of a fluid flywheel.	10 Marks	L2	C05

******* BEST WISHES *******