Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech Degree S6 (R,S) Examinations April 2026 (2019 Scheme)

Course Code: MRT342
Course Name: AUTOMOBILE ENGINEERING

Max. Marks: 100 **Duration: 3 Hours**

PART A
Answer all questions, each carries 3 marks. Marks

1		Explain the term "power-to-weight ratio" and its importance in vehicle performance.	(3)
2		Distinguish between conventional chassis construction and frameless construction.	(3)
3		Differentiate Camber and Castor.	(3)
4		Define body roll couple. How is it generated?	(3)
5		Explain advantages of Pneumatic brakes.	(3)
6		Explain the advantages of using Disc brakes over Drum brakes.	(3)
7		Differentiate between oversteer and understeer.	(3)
8		Explain the advantages of recirculating ball type steering gearbox.	(3)
9		List and explain the important components of Electric Vehicles.	(3)
10		Explain Maglev technology.	(3)

PART B
Answer any one full question from each module, each carries 14 marks.

Module I

11		With the help of a neat sketch explain about the construction and working of Torque Converter. Discuss its torque – slip characteristics.	(14)

OR

12	a)	Explain working of Centrifugal clutch in detail.	(7)
	b)	Explain the working of a synchromesh gearbox with neat diagrams.	(7)

Module II

13	a)	Explain different terms used in Suspension geometry with neat figures.	(8)
	b)	Explain the working of McPherson strut with neat diagrams	(6)

OR

14	a)	Explain the working of Double Wishbone suspension with neat diagram.	(7)
	b)	Explain the terms: body roll couple, body roll stiffness, body over turning couple.	(7)

Module III

15 a) Explain the working of Disc brakes with necessary diagrams. (7)

b) Explain the working of vacuum assisted brakes with examples. (7)

OR

16 Explain the working of modern ABS with neat diagrams. (14)

Module IV

17 a) Discuss the drawbacks of carburettor system. (7)

b) Explain the working CRDI fuel system with neat diagram. (7)

OR

18 a) Explain the working of MPFI fuel system with help of a neat diagram. (7)

b) Explain the working of Electric power steering with neat diagram. (7)

Module V

19 a) Explain the Parallel and Series architecture of modern Hybrid Electric Vehicles with help of block diagrams. (14)

OR

20 a) Explain methods to reduce aerodynamic lift in four wheelers. (7)

b) Explain the methods to reduce aerodynamic drag in automobiles. (7)

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