C   **304B1**   Total Pages: **2**

Register No.: .... Name: ....

SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

SEVENTH SEMESTER B.TECH DEGREE EXAMINATION (S), FEBRUARY 2024

(2020 SCHEME)

Course Code :   20MET433

Course Name: Automotive Technology

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

PART A
(Answer all questions. Each question carries 3 marks)

1.   With a neat sketch, explain how oil ring helps in piston lubrication?
2.   Explain the needs and advantages of CRDI systems with diagram.
3.   How does a torque converter work?
4.   What is the need for clutch and gear box in an automobile?
5.   What are the functions and advantages of independent suspension systems?
6.   Define (i) Suspension roll centers (ii) Suspension roll axis (ii) Body roll stiffness.
7.   Explain the effect of incorrect Toe.
8.   How Li-Ion battery works?
9.   With neat figures explain Adaptive cruise control.
10. What is SRS?

PART B
(Answer one full question from each module, each question carries 14 marks)

MODULE I

11.   Distinguish between supercharged engines and turbocharged engines with neat sketches.   (14)

OR

12.   List out the functions of the following IC engine parts.
(a) Piston (b) Piston ring (c) Flywheel (d) Connecting rod (e) Crankshaft (f) Camshaft   (14)

MODULE II

13.   Explain the working of synchromesh gear box engaged in any gear using a neat diagram.   (14)

OR

14.   With a neat sketch explain diaphragm clutch.   (14)

MODULE III

15. Illustrate different types of suspension systems.   (14)

OR

16. Explain in detail the function and working of ABS brake system with neat sketch.   (14)

MODULE IV

17. What do you understand about steering geometry 1. Slip angle, 2. Camber ,3. King pin inclination, 4. Caster & 5 Toe-in and toe-out.   (14)

OR

18. Illustrate EV architecture in detail.   (14)

MODULE V

19. With neat figures explain the working of automotive air conditioner.   (14)

OR

20. Distinguish between Active and passive safety.   (14)

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