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University Roll No. 2115800023

Mid Term Examination, Odd Semester 2021-22  
B. Tech. (Hons.) CS, I- Year, I Semester  
BMEG 0003 : Introduction to Automotive Systems

Time: 2 Hours

Max Marks:15

Section – A

Note: Attempt All Three Questions

3x1=3 Marks

1. Define mechanical and thermal efficiency of engine. Also Write down the corresponding formulae.
2. What is self-ignition temperature and related to which engine?
3. Make a human-vehicle analogy in terms of the chassis and frame.  
What causes white smoke in two-stroke engines?

Section – B

Note: Attempt All Three Questions

3x2=6 Marks

1. What do you mean by automobile? Give the classification of automobiles based on various aspects.
2. Compare the terms sedan and hatchback. Enlist the sedans and hatchbacks as per the Indian scenario.

3. How do you compare Maruti Celerio manual and automatic?  
Explain the necessity of gearbox (or transmission) and working of a Sliding mesh gearbox.

Section – C

Note: Attempt Any Two Questions

2x3=6 Marks

1. What is the significance of ignition in automotive? Explain the following parts of the ignition system, with a neat sketch:
- a. Battery & ignition switch
  - b. Ignition coil
  - c. Spark plug
2. Discuss all types of resistance encountered by the auto vehicle during its operation and the factors they depend on.

Enlist some vehicles in India using CI and SI engines. Do a comparative analysis of an SI and CI engine. Why are the CI engines comparatively heavier?