INTERNATIONAL CENTRE FOR APPLIED SCIENCES
MAHE, MANIPAL

B.Sc. (Applied Sciences) in Engg.

End – Semester Theory Examinations – NOV 2021

III SEMESTER - AUTOMOBILE ENGINEERING [IME 235]

Time: 3 Hours **Date: 29 NOV 2021** **Max. Marks: 50**

- ✓ **Answer ALL questions.**
- ✓ **Missing data, if any, may be suitably assumed.**

1A Compare the theoretical and actual valve timings diagrams of a 4-cylinder 4-stroke petrol engine which runs with a lead, lag, and overlap of 35°. **(5)**

1B Sketch & explain the type of engine valve that can used in racing car engines. **(5)**

2A Explain with appropriate sketches the provisions that can be provided in a carburetor in order to meet the following driving requirements: **(5)**

a) Brief stoppage at a traffic signal b) City driving

2B Sketch & explain the working of a vacuum advance ignition mechanism. **(5)**

3A Sketch & explain the working of a clutch mechanism used in automatic transmission vehicles. **(5)**

3B Sketch & explain the working of a gear box that is designed to obtain clash-free and silent coupling of gears. **(5)**

4A Explain with appropriate sketches, the type of rear axle in which a single bearing takes up the vertical load. **(5)**

4B Explain the following phenomenon & their significance using appropriate sketches: **(5)**

a. Negative Caster b. Positive Camber

c. Negative scrub radius

5A Sketch & explain the working of a double tube telescopic shock absorber. **(5)**

5B Explain the working of a tandem master cylinder with an appropriate sketch. **(5)**

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