

**B.Tech. – VIEP – MECHANICAL ENGINEERING  
(BTMEVI)**

**Term-End Examination**

**00805**

**December, 2014**

**BIME-012 : AUTOMOBILE ENGINEERING**

*Time : 3 hours*

*Maximum Marks : 70*

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**Note :** Answer any **five** questions. All questions carry equal marks. Assume missing data if any.

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1. (a) How is autovehicle different from a hovercraft and locomotive ? Make a classification of automobiles. 7
- (b) How does an autovehicle meant for movement on Earth differ from an autovehicle in Space ? 7
2. (a) What are the different prime movers used over the automobiles ? Also discuss the basis on which these prime movers are selected for a vehicle. 7
- (b) What are the different components of the power unit in an automobile ? Giving some example, explain the components in brief. 7

3. (a) What are the requirements of a good steering system ? Discuss the different steering systems, with their relative advantages or disadvantages. 7
- (b) What are the different types of springs used in automotive suspensions ? Discuss their characteristics and suitability of application. 7
4. (a) Discuss the various transmission systems used in automobiles, with their relative advantages and disadvantages. 7
- (b) Describe the constructional details and working of a cone clutch with a neat sketch. 7
5. (a) What is the purpose of an axle in automobile ? Discuss the types of axles, along with their features. 7
- (b) What are the functions of a brake ? On which principle does it work ? Discuss about the types of brakes used in two wheelers, cars and trucks, in brief. 7
6. (a) Explain the importance of using a fuse in an automotive electrical circuit. Also, discuss their types along with their applications. 7
- (b) Classify automotive batteries from different considerations and compare their performance. 7

7. (a) Explain the various panel board instruments along with their purpose, in brief. 7
- (b) What are the different lighting accessories used in automobiles ? Explain in brief. 7
8. Write short notes on any *four* of the following :

$$4 \times 3 \frac{1}{2} = 14$$

- (a) Couplings
- (b) Power brakes
- (c) Torque converter
- (d) Starter motor
- (e) Automobile air-conditioning
- (f) Sensors
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