**ME1**

**Hall Ticket Number:**

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| **IV/IV B.Tech (Regular) DEGREE EXAMINATION** | | | |
| **January, 2024** | **Common to EE, EC, CE, CS, IT, CB & EI** | | |
| **Seventh Semester** | **Automobile Engineering** | | |
| **Time:** Three Hours | | **Maximum:** 70 Marks | |
| *Answer Question No.1 compulsorily.* | | | (1X14 = 14 Marks) |
| *Answer ONE question from each unit.* | | | (4X14=56 Marks) |

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| 1. | | Answer all questions. | | |  | |
|  | | a) | | Write the functions of flywheel CO1 L1 | | 1M |
|  | | b) | | Write the functions of piston rings CO1 L1 | | 1M |
|  | | c) | | List out the applications of automobiles CO1 L1 | | 1M |
|  | | d) | | Classify the IC engine with respect to type of ignition. CO1 L1 | | 1M |
|  | | e) | | What are different types of cooling systems used in Automobiles? CO2 L1 | | 1M |
|  | | f) | | What is the function of spark plug in ignition system CO2 L1 | | 1M |
|  | | g) | | What is the need of lubrication system CO2 L1 | | 1M |
|  | | h) | | Write the functions of gear box CO3 L1 | | 1M |
|  | | i) | | Write the functions of springs CO3 L1 | | 1M |
|  | | j) | | List out the various functions of a propeller shaft. CO3 L1 | | 1M |
|  | | k) | | Write uses of suspension system. CO3 L1 | | 1M |
|  | | l) | | What is the condition for the perfect steering? CO4 L1 | | 1M |
|  | | m) | | Define Electric vehicle CO4 L1 | | 1M |
|  | | n) | | Write disadvantages of electric vehicles CO4 L1 | | 1M |
| **UNIT I** | | | | | | |
| 2. | a) | | Why an automobile needs a cooling system? Explain liquid cooling system CO1 L2 | | | 7M |
|  | b) | | Explain the working of piston rings with neat sketch CO1 L2 | | | 7M |
| **(OR)** | | | | | | |
| 3. | a) | | Explain the working of mechanical fuel pump with neat sketch CO1 L3 | | | 7M |
|  | b) | | Explain the working of fuel filters with neat sketches CO1 L2 | | | 7M |
| **UNIT II** | | | | | | |
| 4. | a) | | Explain about splash lubrication system. CO2 L2 | | | 7M |
|  | b) | | Explain the working of wet sump lubrication system with neat sketch CO2 L2 | | | 7M |
| **(OR)** | | | | | | |
| 5. | a) | | Define ‘Chassis’. Write the requirements of a good chassis CO2 L2 | | | 7M |
|  | b) | | Explain the working of battery coil ignition system with neat sketch CO2 L3 | | | 7M |
| **UNIT III** | | | | | | |
| 6. | a) | | With a neat sketch explain constant mesh gear box. CO3 L2 | | | 7M |
|  | b) | | Explain differential gear box with neat sketch CO3 L3 | | | 7M |
| **(OR)** | | | | | | |
| 7. | a) | | Explain the requirements of suspension system CO3 L2 | | | 7M |
|  | b) | | Explain working of shock absorber with neat sketch CO3 L2 | | | 7M |
| **UNIT IV** | | | | | | |
| 8. | a) | | Explain the working principle of hydraulic braking system with neat sketch CO4 L2 | | | 7M |
|  | b) | | Explain about Ackerman steering gear system with neat sketch CO4 L3 | | | 7M |
| **(OR)** | | | | | | |
| 9. | a) | | Explain different configurations of Electric vehicles CO4 L2 | | | 7M |
|  | b) | | What is a fuel cell? Explain the working of a fuel cell CO4 L2 | | | 7M |

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