**18MEI04**

**Hall Ticket Number:**

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| **IV/IV B.Tech (Regular) DEGREE EXAMINATION** | | | |
| **May, 2022** | **Common to all branches** | | |
| **Eighth Semester** | **Automobile Engineering** | | |
| **Time:** Three Hours | | **Maximum:** 50 Marks | |
| *Answer Question No.1 compulsorily.* | | | (1X10 = 10 Marks) |
| *Answer ONE question from each unit.* | | | (4X10=40 Marks) |
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| 1. | a) | List out the applications of automobiles | | CO1 | |  | |
|  | b) | Classify the IC engine with respect to type of ignition. | | CO1 | |  | |
|  | c) | What are different types of cooling systems used in Automobiles? | | CO1 | |  | |
|  | d) | List the various components to be lubricated in an engine | | CO2 | |  | |
|  | e) | What is the function of spark plug in ignition system | | CO2 | |  | |
|  | f) | How is reverse gear obtained in the normal type of gear box? | | CO2 | |  | |
|  | g) | List out the various functions of a propeller shaft. | | CO3 | |  | |
|  | h) | Write uses of suspension system. | | CO3 | |  | |
|  | i) | What is the condition for the perfect steering? | | CO4 | |  | |
|  | j) | Define Electric vehicle | | CO4 | |  | |
| **UNIT –I** | | | | | | | |
| 2. | a) | Explain the major systems of a four-wheeler automobile briefly. | CO1 | | L2 | | 5M |
|  | b) | Why an automobile needs a cooling system? Explain liquid cooling system | CO1 | | L2 | | 5M |
| **(OR)** | | | | | | | |
| 3. | a) | Explain about air cooling system with a neat sketch. | CO1 | | L2 | | 5M |
|  | b) | With neat sketches, explain the working of the SV Electrical pump. | CO1 | | L2 | | 5M |
| **UNIT –II** | | | | | | | |
| 4. | a) | Differentiate between the wet sump lubrication and dry sump lubrication. | CO2 | | L2 | | 5M |
|  | b) | Explain about splash lubrication systems. | CO2 | | L3 | | 5M |
| **(OR)** | | | | | | | |
| 5. | a) | What is the purpose of ignition system and What are the requirements of an ignition system for an I.C Engine? | CO2 | | L2 | | 5M |
|  | b) | Define ‘Chassis’. Write the requirements of a good chassis | CO2 | | L2 | | 5M |
| **UNIT –III** | | | | | | | |
| 6. |  | With a neat sketch explain constant mesh gear box. | CO3 | | L3 | | 10M |
| **(OR)** | | | | | | | |
| 7. | a) | Discuss in detail the construction and operation of the differential. | CO3 | | L2 | | 5M |
|  | b) | What is a suspension system in an automobile? Write the requirements of a good suspension system | CO3 | | L2 | | 5M |
| **UNIT –IV** | | | | | | | |
| 8. | a) | Draw a neat sketch of a steering system, mark all important parts on it  and explain how the systems works. | CO4 | | L2 | | 5M |
|  | b) | Explain the working of a hydraulic braking system with a suitable sketch | CO4 | | L2 | | 5M |
| **(OR)** | | | | | | | |
| 9. | a) | Explain different configurations of Electric vehicles | CO4 | | L2 | | 5M |
|  | b) | What is a fuel cell? Explain the working of a fuel cell | CO4 | | L3 | | 5M |

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