**18MED53**

**Hall Ticket Number:**

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| **IV/IV B.Tech (Regular) DEGREE EXAMINATION** | | | |
| **May, 2022** | **Mechanical Engineering** | | |
| **Eighth Semester** | **Automobile Engineering** | | |
| **Time:** Three Hours | | **Maximum:** 50 Marks | |
| *Answer Question No.1 compulsorily.* | | | (10X1 = 10 Marks) |
| *Answer ONE question from each unit.* | | | (4X10=40 Marks) |
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| 1. | a) | List the functions of a Cooling system in an automobile |  |
|  | b) | Describe the classification of vehicles |  |
|  | c) | Mention the firing order of an 6 cylinder engine |  |
|  | d) | List out the Requirements of Chassis in an automobile |  |
|  | e) | What is the use of Spark plug in an automobile |  |
|  | f) | List out the function of propeller shaft in an automobile |  |
|  | g) | Explain the need for suspension systems |  |
|  | h) | What is meant by hybrid vehicles |  |
|  | i) | How the fuel cell vehicles operates |  |
|  | j) | What is the difference between the power steering and mechanical steering |  |
| **Unit -I** | | | |
| 2. | a) | Explain the working of Electrical type Diaphragm Pumps with a neat sketch | 5M |
|  | b) | Illustrate the Thermal syphon cooling systems with neat sketch | 5M |
|  |  | **(OR)** |  |
| 3. | a) | What are the different valve arrangements and explain any one arrangement with neat sketch | 5M |
|  | b) | What is the function of piston rings and explain any one piston ring with neat sketch | 5M |
|  |  | **Unit -II** |  |
| 4. | a) | What are the different lubrication systems an automobile explain any one with merits and demerits | 5M |
|  | b) | Explain the function of voltage regulator | 5M |
|  |  | **(OR)** |  |
| 5. | a) | Explain the construction features of chassis | 5M |
|  | b) | Discuss the function of current regulator | 5M |
| **Unit -III** | | | |
| 6. | a) | Explain the construction and working principle of Constant mesh type gear box |  |
|  | b) | What is the function of overdrive |  |
|  |  | **(OR)** |  |
| 7. | a) | Explain the construction and working principle of synchromesh type gear box | 5M |
|  | b) | What is the function of shock absorbers in an automobile | 5M |
|  |  | **Unit -IV** |  |
| 8. | a) | Find Explain Davis steering gear mechanism with a neat sketch | 5M |
|  | b) | Illustrate the function of Electronic control system in an automobile | 5M |
|  |  | **(OR)** |  |
| 9. | a) | Explain Ackermann steering mechanism with neat sketch | 5M |
|  | b) | Illustrate the difference between the electric and hybrid vehicles | 5M |

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