**18MED53**

**Hall Ticket Number:**

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| **IV/IV B.Tech (Regular/Supplementary) DEGREE EXAMINATION** | | | |
| **April,2023** | **Mechanical Engineering** | | |
| **Eight Semester** | **Automobile Engineering** | | |
| **Time:** Three Hours | | **Maximum: 5**0 Marks | |
| *Answer Question No. 1 Compulsorily.* | | | (10X1 = 10 Marks) |
| *Answer* ***ANY ONE*** *question from each Unit.* | | | (4X10=40 Marks) |

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| 1. | a) | Write the firing order of a six-cylinder engine. | CO1(BL3) | |  |
|  | b) | Mention the use of Muffler in an automobile. | CO1(BL2) | |  |
|  | c) | Why are T-slots provided in a piston? | CO2(BL1) | |  |
|  | d) | Why is generator required in the electrical system of an automobile? | CO2(BL1) | |  |
|  | e) | Why is condenser used in the primary circuit? | CO2(BL1) | |  |
|  | f) | Give the list of main lights in a modern vehicle. | CO1(BL1) | |  |
|  | g) | What is a constant velocity type universal joint? | CO3(BL1) | |  |
|  | h) | List out the functions of a propeller shaft. | CO3(BL1) | |  |
|  | i) | Define steering ratio. | CO4(BL1) | |  |
|  | j) | Classify the different types of steering mechanism for cars. | CO4(BL3) | |  |
| **Unit - I** | | | | | |
| 2. | a) | Classify the automobiles based on various considerations. | CO1(BL3) | **5M** | |
|  | b) | Name different types of piston rings. Explain an oil ring with the help of a sketch. | CO1(BL1) | **5M** | |
|  |  | **(OR)** |  |  | |
| 3. | a) | Sketch a S.U Electrical pump and describe its working. | CO1(BL2) | **5M** | |
|  | b) | State the applications, advantages and disadvantages of air-cooling system. | CO1(BL1) | **5M** | |
| **Unit - II** | | | | | |
| 4. | a) | Explain briefly splash lubrication system. What is petroil lubrication used in small two stroke engines? | CO2(BL2) | **5M** | |
|  | b) | Explain briefly a cut-out relay as used in the battery generator circuit. | CO2(BL2) | **5M** | |
|  |  | **(OR)** |  |  | |
| 5. | a) | Explain the pressure of lubrication system with the help of a sketch. | CO2(BL2) | **5M** | |
|  | b) | Briefly discuss the Electronic Ignition system with a neat sketch. | CO2(BL2) | **5M** | |

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| **Unit - III** | | | | |
| 6. | a) | Explain the various types of rear axles with neat diagrams. | CO3(BL2) | **5M** |
|  | b) | Describe the working of a synchromesh gear box with the help of neat sketches. | CO3(BL1) | **5M** |
|  |  | **(OR)** |  |  |
| 7. | a) | Briefly explain the construction and working of a differential with the help of neat sketch. | CO3(BL2) | **5M** |
|  | b) | With the help of neat sketch describe the working of Telescopic type shock absorber. | CO3(BL1) | **5M** |
| **Unit - IV** | | | | |
| 8. | a) | Explain the necessity of power steering in an automobile. Sketch any power steering system and explain its working. | CO4(BL2) | **5M** |
|  | b) | Make a comparison between a hybrid and an electric car. | CO4(BL1) | **5M** |
|  |  | **(OR)** |  |  |
| 9. | a) | Draw a layout diagram of an air brake system with all units. Explain its working. | CO4(BL2) | **5M** |
|  | b) | Explain the working of fuel cell with a neat sketch. Mention its advantages and dis advantages. | CO4(BL1) | **5M** |

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