**14ME802**

**Hall Ticket Number:**

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| **IV/IV B.Tech (Regular/Supplementary) DEGREE EXAMINATION** | | | |
| **July, 2021** | **Mechanical Engineering** | | |
| **Eight Semester** | **Automobile Engineering** | | |
| **Time:** Three Hours | | **Maximum:** 60 Marks | |
| *Answer ALL Questions from PART-A.* | | | (12X1 = 12 Marks) |
| *Answer* ***ANY FOUR*** *questions from PART-B.* | | | (4X12=48 Marks) |
| **Part - A** | | | |

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| 1. | Answer all questions | | (12X1=12 Marks) | |
|  | a) | List some applications of gasoline engines | |  |
|  | b) | Classify the IC engine with respect to type of ignition. | |  |
|  | c) | What is the difference between supercharger and turbocharger? | |  |
|  | d) | Why overheating and overcooling of I.C engine is harmful? | |  |
|  | e) | List the various components to be lubricated in an engine | |  |
|  | f) | What is the function of spark plug in ignition system | |  |
|  | g) | How is reverse gear obtained in the normal type of gear box? | |  |
|  | h) | What is a counter gear? | |  |
|  | i) | List out the various functions of a propeller shaft. | |  |
|  | j) | Explain the term caster | |  |
|  | k) | What is the role of shock absorbers of an automobile? | |  |
|  | l) | What are the requirements of a brake fluid? | |  |
| **Part - B** | | | | |
| 2. | a) | Explain various components of four-wheeler automobile briefly. | | 6M |
|  | b) | What are the functions of piston rings? Explain different types of piston rings with neat sketches. | | 6M |
|  | | | | |
| 3. | a) | With a neat sketch, explain fuel supply system in SI Engine. | | 6M |
|  | b) | With neat sketches, explain the working of the mechanical fuel pump. | | 6M |
|  | | | | |
| 4. | a) | With a neat sketch explain Air cooling system and write the advantages and disadvantages of Air-cooling system | | 6M |
|  | b) | Differentiate between the wet sump lubrication and dry sump lubrication. | | 6M |
|  | | | | |
| 5. | a) | What is the purpose of starter? What is the amount of current that it consumes while starting? | | 6M |
|  | b) | What is the purpose of ignition system and What are the requirements of an ignition system for an I.C Engine? | | 6M |
|  | | | | |
| 6. | a) | With neat sketch explain the working of a single plate clutch | | 6M |
|  | b) | With a neat sketch explain Synchro mesh gear box. | | 6M |
|  | | | | |
| 7. | a) | Discuss in detail the construction and operation of the differential. | | 6M |
|  | b) | Draw and explain with a simple sketch, working of a constant mesh gear box. | | 6M |
|  | | | | |
| 8. | a) | Make a sketch showing the rear wheel suspension with leaf springs and shock absorbers | | 6M |
|  | b) | Draw a neat sketch of a steering system, mark all important parts on it and explain how the system works. | | 6M |
|  | | | | |
| 9. | a) | With a neat sketch, explain the function of a master cylinder in hydraulic brakes. | | 6M |
|  | b) | What are the different types of steering gears? Sketch a worm and wheel steering gear and explain its working. | | 6M |

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**Scheme of evaluation**

**1. Each question carries one mark**

**2.a)** Explanation any six-6 **Marks**

**2.b) Functions: 2 Marks**

Explanation -**2 Marks**

Sketch -2 **Marks**

**3.a) Explantion-**3 **Marks**

Sketch -3 **Marks**

**3.b)** **Explantion-**3 **Marks**

Sketch -3 **Marks**

**4.a) Explantion-**2 **Marks**

Sketch -2 **Marks**

**Advantages-1Marks**

**Disadvantages-1Marks**

**4.b) differences -6Marks**

**5.a)** Purpose -**3 Marks**

Explanation -**3 Marks**

**5.b)** Purpose-3 **Marks**

Requirements -**3 Marks**

**6.a)** Sketch -**3 Marks**

Explanation -**3 Marks**

**6.b)** Sketch -**3 Marks**

Explanation -**3 Marks**

**7.a)** Sketch -2 **Marks**

Explanation -4 **Marks**

**7.b)** Sketch -**3 Marks**

Explanation -**3 Marks**

**8.a) Diagram** -4 **Marks**

**Explantion-2 Marks**

**8.b)** **Diagram** -2 **Marks**

**Indicating parts** -2 **Marks**

**Explantion-2 Marks**

**9.a)** Sketch -**3 Marks**

Explanation -**3 Marks**

**9.b) list-**2 **Marks**

**Explantion-**2 **Marks**

Sketch -2 **Marks**