

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)

B.Tech. III Year I Semester Regular Examinations December-2025

AUTOMOBILE ENGINEERING

(Mechanical Engineering)

Time: 3 Hours

Max. Marks: 70

PART-A

(Answer all the Questions 10 x 2 = 20 Marks)

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|---|---|---|-----|----|----|
| 1 | a | Why air fuel ratios of diesel engines are more than petrol engines? | CO1 | L1 | 2M |
| | b | Write the firing order of 4 cylinder and 6 cylinder engine. | CO1 | L2 | 2M |
| | c | What is the need of an Ignition system in an Automobile? | CO2 | L1 | 2M |
| | d | What is the primary function of the fuel supply system? | CO2 | L1 | 2M |
| | e | What is Toe-in and Toe-out? | CO3 | L1 | 2M |
| | f | List out various functions of steering system. | CO3 | L2 | 2M |
| | g | In the tyre specification, what does the ply rating refers? | CO4 | L1 | 2M |
| | h | How radial tyre is different from normal tyre? | CO4 | L1 | 2M |
| | i | What are the different components of a hydraulic brake system? Explain. | CO4 | L2 | 2M |
| | j | Elucidate the working of a pneumatic braking system with a neat Sketch. | CO4 | L2 | 2M |

PART-B

(Answer all Five Units 5 x 10 = 50 Marks)

UNIT-I

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| 2 | a | Write a note on the construction of a frame for an automobile chassis. | CO1 | L2 | 5M |
| | b | What are the functions of an Oil Pump? | CO1 | L1 | 5M |

OR

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|---|---|---|-----|----|----|
| 3 | a | Differentiate between S I engines and CI engines. | CO1 | L2 | 5M |
| | b | Explicate front and rear wheel drive layout in detail with relevant Sketch. | CO1 | L2 | 5M |

UNIT-II

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|---|---|--|-----|----|----|
| 4 | a | Explain the fuel supply system in diesel engine with line diagram. | CO2 | L2 | 5M |
| | b | List out various components of Carburettor and also mention its functions. | CO2 | L1 | 5M |

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| 5 | | Describe the working of Carburettor with a neat sketch. | CO2 | L2 | 10M |
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UNIT-III

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| 6 | | Discuss in detail with a neat sketch the working of an Ackermann steering mechanism. | CO3 | L2 | 10M |
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| 7 | | With a neat diagram explain the construction and working of a shock Absorber. | CO4 | L2 | 10M |
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UNIT-IV

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| 8 | | What are the different components of a hydraulic brake system? Explain. | CO4 | L2 | 10M |
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| 9 | | Illustrate the working of a vacuum braking system with a neat sketch. | CO4 | L2 | 10M |
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UNIT-V

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| 10 | | Write a brief note on Electronic Brake force Distribution (EBD) and Traction control system (TCS). | CO6 | L1 | 10M |
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|----|--|---|-----|----|-----|
| 11 | | Describe the working of Fuel Cell with a neat diagram and also mention its characteristics. | CO1 | L2 | 10M |
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