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

B.Tech II Year II Semester Supplementary Examinations March-2021

MECHANICAL ENGINEERING

(Common to CE & AGE)

Time: 3 hours

Max. Marks: 60

PART-A

(Answer all the Questions 5 x 2 = 10 Marks)

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|---|---|--|----|
| 1 | a | What is the difference between Ideal Gas & Real Gas? | 2M |
| | b | What are the advantages of CRDI Engine? | 2M |
| | c | Define Refrigerant. | 2M |
| | d | What are the different types of Brakes? | 2M |
| | e | What is the difference between Brazing & Soldering? | 2M |

PART-B

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

UNIT-I

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|---|---|---|----|
| 2 | a | Explain the different types of process in Diesel Cycle. | 4M |
| | b | Illustrate the analysis of Otto Cycle Efficiency. | 6M |

OR

- | | | |
|---|---|-----|
| 3 | In an air standard diesel cycle, the compression ratio is 16 and the beginning of isentropic compression the temperature is 150 C and the pressure is 0.1 MPa. Heat is added until the temperature at the end of the constant process is 14800C. Calculate: | 10M |
| | i) The cut-off ratio | |
| | ii) The Heat supplied per Kg of air | |
| | iii) the Cycle efficiency | |
| | iv) The Mean effective pressure. | |

UNIT-II

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|---|---|--|----|
| 4 | a | Explain about different types of Steam Turbines. | 5M |
| | b | Explain the term Gas turbine and its Classification. | 5M |

OR

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|---|---|---|----|
| 5 | a | What is a Hybrid Engines? Explain its Types. | 4M |
| | b | Explain the working of Reciprocating Pump with a neat sketch. | 6M |

UNIT-III

- 6 a Define Heat Pump. 2M
b What is meant by Vapour compression Refrigeration System? Explain its working with neat diagram. 8M

OR

- 7 a Define Psychometry. 2M
b What are the different types of Psychrometric Processes? Explain them with neat diagram. 8M

UNIT-IV

- 8 a Define power Transmission Devices. 6M
b Discuss in detail about Single Plate clutch. 4M

OR

- 9 Explain in details about different types of Gear Trains with neat sketch. 10M

UNIT-V

- 10 a Explain about Casting. 5M
b Explain about Powder Metallurgy. 5M

OR

- 11 a Explain in detail about CNC Machines. 5M
b Discuss clearly about Metal Joining Process. 5M

END