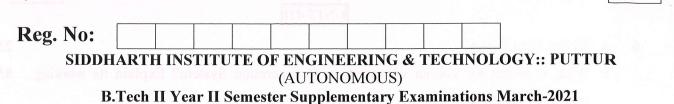
| Q.P. | Code: | 18ME0346 |
|------|-------|----------|
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**R18** 

Max. Marks: 60

# MECHANICAL ENGINEERING

(Common to CE & AGE)

Time: 3 hours

# $\underline{PART-A}$ (Answer all the Ouestions 5 x 2 = 10 Marks)

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

#### PART-B

(Answer all Five Units  $5 \times 10 = 50$  Marks)

## UNIT-I

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

#### OR

- 3 In an air standard diesel cycle, the compression ratio is 16 and the beginning of isentropic 10M 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:
  - i) The cut-off ratio
  - ii)The Heat supplied per Kg of air
  - iii) the Cycle efficiency
  - iv) The Mean effective pressure.

### UNIT-II

| 4 | a | Explain about different types of Steam Turbines.              | 5 <b>M</b> |
|---|---|---|------------|
|   | b | Explain the term Gas turbine and its Classification.          | 5 <b>M</b> |
|   |   | OR  |            |
| 5 | a | What is a Hybrid Engines? Explain its Types.                  | <b>4M</b>  |
|   | b | Explain the working of Reciprocating Pump with a neat sketch. | 6M         |

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|   |    | UNIT-III  | _         |
|---|----|---|-----------|
| 6 | a  | Define Heat Pump.   | 2M        |
|   | b  | What is meant by Vapour compression Refrigeration System? Explain its working   | <b>8M</b> |
|   |    | with neat diagram.  |           |
|   |    | OR  |           |
| 7 | a  | Define Psychometry.   | <b>2M</b> |
|   | b  | What are the different types of Psychrometric Processes? Explain them with neat | <b>8M</b> |
|   |    | diagram.  |           |
|   |    | UNIT-IV   |           |
| 8 | a  | Define power Transmission Devices.  | <b>6M</b> |
|   | b  | Discuss in detail about Single Plate clutch.                                    | <b>4M</b> |
|   |    | OR  |           |
| 9 | Ex | xplain in details about different types of Gear Trains with neat sketch.        | 10M       |
|   |    |   |           |
|   |    | UNIT-V  |           |

**R18** 

| 10 | a | Explain about Casting.           | 5 <b>M</b> |
|----|---|----------------------------------|------------|
|    | b | Explain about Powder Metallurgy. | 5M         |
|    |   | OR                               |            |

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

\*\*\*END\*\*\*