

TED (15) 5053
(Revision 2015)

goffy

Reg.No.
Signature.

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/
COMMERCIAL PRACTICE - APRIL 2018.

FUELS AND COMBUSTION

[Maximum Marks : 100]

Time : 3 Hrs

PART-A
[Maximum marks: 10]

Marks

I Answer all questions in one or two sentences. Each question carries 2 marks.

1. Define the term fire point .
2. Write two benefits of high octane fuels
3. What is meant by ignition delay period ?
4. What is compression ratio ?
5. Name two types of hybrid systems.

(5x2=10)

PART-B

II Answer any five questions from the following. Each question carries 6 marks.

1. What are the different kinds of fuels used in an IC engine ?
2. Explain alcohols as an alternate fuels for IC engine, bringing out their merits and demerits.
3. Explain the various factors that influence flame speed
4. Explain the phenomenon of ' knocking' in SI engines.
5. Explain the process of combustion in CI engine.
6. Write short notes on fuel cell vehicles
7. Explain the methods of supercharging

(5x6=30)

PART-C

(Answer one full question from each unit. Each full question carries 15 marks.)

UNIT-I

- III (a) Discuss the important qualities of SI engine fuels 7
(b) What is natural gas? What are the advantages of using natural gas as an alternate fuel? 8

OR

- IV (a) Explain the methods of rating SI and CI engines fuels. 7
(b) What are the advantages and disadvantages of using hydrogen in SI engine? 8

UNIT-II

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| V | (a) | Briefly explain the stages of combustion in SI engine | 8 |
| | (b) | Discuss the effects of pre-ignition in SI engines | 7 |

OR

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| VI | (a) | Explain the effects of engine variables in ignition lag. | 8 |
| | (b) | Discuss the four main factors which affect the detonation tendency in an IC engine | 7 |

UNIT-III

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| VII | (a) | Does the flame front exist in a CI engine? Explain. | 8 |
| | (b) | Discuss the method of controlling diesel engine knock | 7 |

OR

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| VIII | (a) | Discuss air-fuel ratio used in CI engines | 8 |
| | (b) | What are the factors that affect the delay period in CI engines | 7 |

UNIT-IV

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| IX | (a) | State the objectives of Supercharging | 7 |
| | (b) | With a sketch describe the working of parallel hybrid system | 8 |

OR

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| X | (a) | Compare the supercharged engines with conventional engine. | 7 |
| | (b) | Explain the working of Turbocharger with a sketch. | 8 |