QPC: RJ20MTECH069 AR 19 Reg. No | | | | | | | | | | |

GIET UNIVERSITY, GUNUPUR – 765022

M. Tech (First Semester – Regular) Examinations, June – 2021

MPETE1044 – INTERNAL COMBUSTION ENGINES

(Heat Power and Thermal Engineering)

Time: 2 hrs Maximum: 50 Marks

The figures in the right hand margin indicate marks.

PART – A **(2 x 10 = 20 Marks)**

Q1. Answer **ALL** questions

a. What are the assumptions used in fuel-air cycle analysis.

b. What is meant by abnormal combustion?

c. Why rich mixture is required for maximum power?

d. What are homogeneous and heterogeneous mixtures?

e. What are the merits of the indirect-injection combustion chambers?

f. Write two limitations of liquid cooling system.

g. Differentiate the terms pre ignition and knocking.

h. What is volumetric efficiency?

i. Define the term BHP and IHP.

j. Write two advantages of Stratified Charge Engines?

PART – B **(6 x 5 = 30 Marks)**

Answer ***ANY FIVE*** questions **Marks**

2. Draw a neat sketch and explain the working of Wankel rotary combustion engine. **6**

3. Briefly explain the various methods of supercharging an engine. **6**

4. Why Morse test is not suitable for single cylinder engine? Describe themethod of finding friction power using Morse test **6**

5. Briefly discuss the engine parameters that are affecting the ignition timings of an IC engine. **6**

6. Write the effect of variable compression ratio on power output,specific fuel consumption, thermal load and engine noise? **6**

7. What is a multi-fuel engine? Explain briefly the major expectations from a multi-fuel engine. What are the essential design features that are indicated to full fill the multi-fuel operation? **6**

8. Write short notes (any two) **6**

   (i) Combustion Chart
   (ii) Fault diagnosis of SI engine
   (iii) Fuel rating

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