R18 Regulation *Subject code:2P5CB*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech V Semester Supplementary Examinations, May 2025

THERMAL ENGINEERING-I

(ME)

Maximum Marks: 70 Date: 19.06.2025 Duration: 3 hours

Note: **1.This question paper contains two parts A and B.**
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks (10X2M=20 Marks)		Marks	CO	BTL
1	Stoichiometric air-fuel ratio means?	2M	1	L1
2	List the advantages of valve timing diagram.	2M	1	L1
3	What is called flame front and flame velocity?	2M	2	L1
4	What are the various losses of IC Engine?	2M	2	L1
5	Define Indicated Power.	2M	3	L1
6	Define Friction Power.	2M	3	L1
7	What is the condition for maximum efficiency?	2M	4	L1
8	Define Isothermal efficiency of a compressor.	2M	4	L1
9	What is Workdone Factor?	2M	5	L1
10	Define Pressure coefficient.	2M	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	Explain cooling system for IC engines.	10M	1	L2
	OR			
12	State and explain different combustion stages in SI engine.	10M	1	L2
13	What are the types of fuel injection systems? Explain anyone with a neat sketch?	10M	2	L2
	OR			
14	Differentiate between SI and CI engines.	10M	2	L2
15	Explain heat balance sheet in detail.	10M	3	L2
	OR			
16	Derive the expression for the work done by a single stage compressor.	10M	3	L2
17	Compare Centrifugal and Axial flow Compressors.	10M	4	L2
	OR			
18	a) List Various types of Compressors. b) Explain with neat sketch, working of Roots Blower.	5M 5M	4	L2

19	Explain Air Conditioning Cycle with neat Sketch.	10M	5	L2
	OR			
20	Explain the working of Central System in Air Conditioning with neat sketch.	10M	5	L2