R18 Regulation *Subject code: 2P5CB*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech V Semester Supplementary Examinations, July 2024

Thermal Engineering-1
(ME)

Maximum Marks: 70 Date:22.07.2024 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 which carries 10M.
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)		CO	Bloom Tx
1	Stoichiometric air-fuel ratio means?	1	L1
2	List the advantages of valve timing diagram?	1	L1
3	Explain the difference between Pre-ignition, auto-ignition and detonation?	2	L1
4	What are the various losses of IC Engine?	2	L1
5	Define Brake Power	3	L1
6	Define Indicated Power	3	L1
7	What is the condition for maximum efficiency?	4	L1
8	Define Isothermal efficiency of a compressor	4	L1
9	Define ton of refrigeration system.	5	L1
10	What are the applications of refrigeration system?	5	L1
	Part-B		
Answer All the following questions. (5X10M=50Marks)			
11	Explain cooling system for IC engines. [10]	1	L2
	OR		
12	State and explain different combustion stages in SI engine? [10]	1	L2
13	Discuss the various methods for improving the anti-knock quality of an SI engine. [10]	2	L2
	OR		
14	What are the types of fuel injection systems? Explain anyone with a neat sketch? [10]	2	L2
15	a) What is Brake Power? How do you measure BP with Rope Brake Dynamometer ? [5] b) What is Motoring test? [5]	3	L2
	OR		
16	a) What is the significance of Morse test. Explain in detail. [5] b) Explain Willan's line method. [5]	3	L2

17	Compare Centrifugal and Axial flow Compressors. [10]	4	L2
	OR		
18	Differentiate between Reciprocating and Rotary Compressors. [10]	4	L2
19	Explain Air Conditioning Cycle with neat Sketch. [10]	5	L2
	OR		
20	Explain the working of Central System in Air Conditioning with neat sketch. [10]	5	L2