Gandhi Institute of Engineering and Technology University, Odisha, Gunupur
(GIET University)

B. Tech (Fifth Semester - Regular) Examinations, November – 2024

22BMEPC35004 - Internal Combustion Engines

(Mechanical Engineering)

Time: 3 hrs Maximum: 70 Marks

Answer ALL questions

(The figures in the right hand margin indicate marks)

PART – A **(2 x 5 = 10 Marks)**

	Q.1. Answer ***ALL*** questions	CO #	Blooms Level
a.	Draw the P-V diagram for 4 Stroke Compression Ignition engine.	CO1	K1
b.	Mention some alternative fuels for Internal Combustion Engines.	CO1	K2
c.	What are the different types of Air-Fuel mixtures used in I.C Engines.	CO2	K1
d.	Define Scavenging.	CO3	K1
e.	Explain Brake Specific Fuel Consumption.	C04	K1

PART – B **(15 x 4=60 Marks)**

	Answer ***ALL*** the questions	Marks	CO #	Blooms Level
2. a.	Explain the difference between Petrol engine(S.I Engine) and Diesel engine(C.I Engine).	8	CO1	K1
b.	Explain the working principle of 4-Stroke Petrol engine.	7	CO1	K1
	(OR)			
c.	Describe the valve timing diagram and its importance in Internal Combustion engines.	8	CO1	K1
d.	Discuss the Properties of LPG, CNG, Hydrogen and Biogas.	7	CO1	K1
3.a.	Explain the functions of a carburettor and the principle of a simple carburettor along with its drawbacks.	8	CO2	K2
b.	Discuss the stages of combustion in Spark Ignition engines and factors affecting the ignition lag and flame propagation.	7	CO2	K2
	(OR)			
c.	Compare the different types of fuel injection systems and discuss spray formation.	8	CO2	K2
d.	Discuss about diesel knock, its cause and the methods to control it in diesel engines .	7	CO2	K2
4.a.	Explain the thermodynamic cycle with supercharging and their impact on engine performance.	8	CO3	K3
b.	Discuss about the scavenging of two stroke engines.	7	CO3	K3
	(OR)			
c.	Explain about any two cooling systems used in Internal Combustion engines.	8	CO3	K3
d.	Describe the properties of lubricants and their role in Internal Combustion engine lubrication system.	7	CO3	K3
5.a.	4 stroke I C engine is economical and less pollutant than 2 stroke engine, Justify.	7	CO4	K2
b.	Describe the various methods used for Fuel, Air and Power measurement in	8	CO4	K2

Internal Combustion engines.

(OR)

c.	Explain the methods used to control emission in Gasoline and Diesel engines.	8	CO4	K2
d.	Discuss the harmful effects of engine emissions and the methods to measure pollutants.	7	CO4	K2

--- End of Paper ---