



P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

Sixth Semester, B.E. - Automobile Engineering

Semester End Examination; August - 2023

Automotive Engines and Systems

Time: 3 hrs

Max. Marks: 100

Course Outcomes

The Students will be able to:

CO1: Understand the basic principles of working of SI and CI engines.

CO2: Identify the different methods of fuel supply systems in SI and CI engines.

CO3: Understand the basic principles of ignition system, supercharging and turbo charging.

CO4: Understand the necessity of cooling and lubrication in IC engines and different types.

CO5: Determine the IC engines power and efficiencies.

Note: I) PART - A is compulsory. Two marks for each question.

II) PART - B: Answer any Two sub questions (from a, b, c) for a Maximum of 18 marks from each unit.

Q. No.	Questions	Marks	BLs	COs	POs
I : PART - A		10			
1 a.	Explain the function of crank shaft.	2	L1	CO1	PO1
b.	Explain MPFI system.	2	L2	CO2	PO1
c.	What do you mean by super charging?	2	L2	CO3	PO1
d.	What is the function of lubrication?	2	L1	CO4	PO1
e.	List the pollutants from CI engine.	2	L1	CO5	PO1
II : PART - B		90			
UNIT - I		18			
2 a.	Explain with a neat sketch working of 4 stroke diesel engine.	9	L2	CO1	PO1,2
b.	Explain the various stages of combustion in SI engine.	9	L3	CO1	PO1,6
c.	Briefly differentiate between 2 and 4 stroke engine.	9	L2	CO1	PO2
UNIT - II		18			
3 a.	With a neat sketch, explain the working of simple carburetor and list its disadvantages.	9	L3	CO2	PO1,2
b.	Explain in line and distributor type fuel injection system.	9	L2	CO2	PO1,6
c.	With a neat sketch explain the working of CRDI engine.	9	L3	CO3	PO2
UNIT - III		18			
4 a.	Explain the construction and working of turbo charger system.	9	L3	CO3	PO1,2
b.	With neat sketch explain battery ignition system.	9	L3	CO3	PO6
c.	Explain with sketch, any one method of achieving spark advance mechanism.	9	L2	CO3	PO2

UNIT - IV**18**

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| 5 a. Explain the variation of temperature distribution take place for piston and cylinder component. | 9 | L1 CO4 PO1 |
| b. Explain the construction and working of liquid cooled engines. | 9 | L3 CO4 PO1,6 |
| c. Explain any 6 lubrication properties. | 9 | L1 CO4 PO12 |

UNIT - V**18**

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| 6 a. Explain the working of rope brake type dynamometer with help of sketch. | 9 | L1 CO5 PO1 |
| b. List that various pollutants from SI engine and explain the reason for that pollutants briefly. | 9 | L1 CO5 PO1,6 |
| c. Explain how smoke meter is used to measure various pollutants. | 9 | L2 CO5 PO1 |

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