



## 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; July / Aug. - 2022**

**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
<b>I : PART - A</b>		<b>10</b>			
I a.	What is meant by TDC and BDC?	2	L1	CO1	PO1
b.	Define carburation.	2	L1	CO2	PO1
c.	What is homogeneous and heterogeneous mixture?	2	L1	CO2	PO1
d.	What is Square Engine?	2	L1	CO1	PO1
e.	What is dwell angle?	2	L1	CO3	PO1
<b>II : PART - B</b>		<b>90</b>			
<b>UNIT - I</b>		<b>18</b>			
1 a.	With sketch classify engine by cylinder arrangements.	9	L2	CO1	PO1
b.	With P-θ diagram explain stages of combustion in SI Engine.	9	L3	CO1	PO1
c.	With P-θ diagram explain stages of combustion in CI engine.	9	L3	CO1	PO1
<b>UNIT - II</b>		<b>18</b>			
2 a.	Explain with sketch simple carburetor.	9	L2	CO2	PO1
b.	Explain L-MPFI with diagram.	9	L2	CO2	PO1
c.	Explain with sketch CRDI.	9	L2	CO2	PO1
<b>UNIT - III</b>		<b>18</b>			
3 a.	Compare Battery with Magneto Ignition.	9	L2	CO3	PO1
b.	Explain with schematic diagram CDI system.	9	L2	CO3	PO1
c.	Compare turbo charging with Super charging.	9	L2	CO3	PO1
<b>UNIT - IV</b>		<b>18</b>			
4 a.	Explain the principle of forced circulation cooling system.	9	L2	CO4	PO1
b.	Explain with sketch pressure feed lubrication system.	9	L2	CO4	PO1
c.	Compare between wet sump and Dry sump system.	9	L2	CO4	PO1

**UNIT - V**

**18**

5 a. Explain the sources of pollutants from IC Engines.	9	L2	CO5	PO1
b. Explain with sketch Prony-Brake Dynamometer.	9	L2	CO5	PO1
c. Explain with sketch Chemiluminescent Analysis.	9	L3	CO5	PO1

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