



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

(An Autonomous Institution affiliated to VTU, Belagavi)

Fifth Semester, B.E. - Automobile Engineering

Semester End Examination; February / March - 2022

Auxiliary System of Automobile Engines

Time: 3 hrs

Max. Marks: 100

Course Outcomes

The Students will be able to:

CO1: Identify the different methods of fuel supply systems in SI engine, construction, working and their advantages, disadvantages.

CO2: Identify and elaborate different ways of fuel supply systems in CI engines and their working.

CO3: Design different cooling systems used in IC engines and their working principles.

CO4: Identify appropriate lubrication system for IC engines and ignition systems for SI engines and explain their working principles.

CO5: Understand the basic principles of supercharging and turbo charging and design modifications of an engine for supercharging and turbo charging.

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

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

Q. No.	Questions	Marks	BLs	COs	POs
I : PART - A		10			
I a.	Indicate the need for choke in carburettor.	2		CO1	PO1,2,6
b.	Discuss the necessity of radiators in cooling systems.	2		CO3	PO1,2,6
c.	List the purposes of lubrication system.	2		CO4	PO1,2,6
d.	What are the purposes of supercharging?	2		CO5	PO1,2,6
e.	List types of nozzles used for diesel injection systems.	2		CO2	PO1,2,6
II : PART - B		90			
UNIT - I		18			
1 a.	Sketch and explain the working of simple carburettor.	9	L2	CO1	PO1,2,6,12
b.	Illustrate the merits and demerits of petrol injection systems.	9	L3	CO1	PO1,2,6,12
c.	Explain the working of K.Jetronic injection system with a sketch.	9	L2	CO1	PO1,2,6,12
UNIT - II		18			
2 a.	Sketch and explain the working of CRDI system.	9	L2	CO2	PO1,2,6
b.	Mention the types of injectors and explain anyone with a sketch.	9	L2	CO2	PO1,2,6
c.	Discuss the factors influencing the spray atomization, penetration, and dispersion.	9	L2	CO2	PO1,2,6
UNIT - III		18			
3 a.	Illustrate the advantages and disadvantages of liquid cooling system.	9	L3	CO3	PO1,2,6
b.	Sketch and explain the construction and working of liquid cooling system.	9	L2	CO3	PO1,2,6
c.	Illustrate the significance of thermostat with a sketch.	9	L3	CO3	PO1,2,6

UNIT - IV**18**

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|--|---|----|-----|---------|
| 4 a. Justify the need for crankcase ventilation system and explain the working of positive crankcase ventilation system. | 9 | L4 | CO4 | PO1,2,6 |
| b. List the classification of lubricating oils and illustrate the suitable properties. | 9 | L3 | CO4 | PO1,2,6 |
| c. List and explain the types of governors. | 9 | L2 | CO5 | PO1,2,6 |

UNIT - V**18**

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|--|---|----|-----|---------|
| 5 a. Illustrate the limits of supercharging in petrol engine. | 9 | L3 | CO5 | PO1,2,6 |
| b. Identify and explain the modifications of an engine for supercharging. | 9 | L2 | CO5 | PO1,2,6 |
| c. List the methods of turbo charging. Illustrate two stage of turbo charging. | 9 | L3 | CO5 | PO1,2,6 |

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