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B. VOC.
(SEM III) THEORY EXAMINATION 2021-22
AUTOMOBILE ENGINES

Time: 3 Hours**Total Marks: 30****Note: 1.** Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt all questions in brief. 1 x 6 = 6

Qno.	Question	Marks
a.	Define First Law of Thermodynamics.	1
b.	Write the relation of Air Standard Efficiency of Otto Cycle.	1
c.	Valve Timing Diagram is applicable for 2-stroke Engine. Is it true or false.	1
d.	Mention the major use of Flywheel.	1
e.	Write the relation of Brayton Cycle Efficiency.	1
f.	Define Supercharging.	1

SECTION B

2. Attempt any three of the following: 3 x 3 = 9

a.	Compute the air standard efficiency of Otto Cycle having compression ratio of 8. Take $(C_p/C_v) = 1.2$	3
b.	Differentiate between 2-stroke SI and 4-stroke SI Engines.	3
c.	Explain the construction detail (with diagram) and working of Muffler.	3
d.	Discuss the cooling of Rotary Engines	3
e.	Explain the Detonation. How can it be reduced?	3

SECTION C

3. Attempt any one part of the following: 1 x 3 = 3

a.	Draw the p-V diagram of Air Standard Diesel Cycle. Explain its various processes.	3
b.	Differentiate between Actual and Ideal Cycles.	3

4. Attempt any one part of the following: 1 x 3 = 3

a.	Explain the port timing diagram.	3
b.	Explain the working of 4-stroke Diesel Engine.	3

5. Attempt any one part of the following: 1 x 3 = 3

a.	Explain the construction detail (with diagram), types and usages of Piston Rings.	3
b.	Explain the construction detail (with diagram) and usages of Connecting Rod.	3

6. Attempt any one part of the following: 1 x 3 = 3

a.	Explain the working principle of Internal Combustion Turbine.	3
b.	Draw the p-V diagram of Brayton Cycle and explain its various processes.	3

7. Attempt any one part of the following: 1 x 3 = 3

a.	Explain the necessity of Supercharging. Mention its various types.	3
b.	Discuss the Engine specifications of four wheelers.	3