

B.Tech. 5th Semester (AUE) F. Scheme Examination,

December-2017

AUTOMOTIVE DIESEL ENGINES

Paper-AUE-303-F

Time allowed : 3 hours *[Maximum marks : 100]*

Note : Question No. 1 is compulsory. Attempt any five questions in total by selecting at least one question from each section.

1. (a) What do you mean by Ignition quality ?
(b) Concept of pressure waves.
(c) Pneumatic governor.
(d) Factors affecting delay period.
(e) Knock phenomenon.
(f) What is supercharging ?
(g) Name variables affecting engine performance.
(h) Write about "period of rapid combustion".

$2\frac{1}{2} \times 8 = 20$

Section-A

2. Sketch the diesel cycle on P-V and T-S diagrams. Derive the formula for efficiency of diesel cycle. 20
3. (a) Write a short note on cetane number. 10
(b) Describe four stroke diesel engine. 10

Section-B

4. With a neat sketch explain the jerk pump type injection system. 20

5. What are the functions of a nozzle ? With sketches explain various types of nozzles. 20

Section-C

6. Explain the phenomenon of knock in CI engines. Also compare knock in CI and SI engines. 20
7. (a) Write short note on Direct and Indirect injection. 10
(b) Describe Air Cell combustion chamber. 10

Section-D

8. (a) Write short note on Turbocharging. 10
(b) Discuss about different types of engine efficiencies. 10
9. (a) What are various methods to improve engine performance ? 10
(b) Briefly explain various methods of supercharging an engine. 10