

Reg. No. :

--	--	--	--	--	--	--	--	--	--	--

Question Paper Code: 39720

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2019

Elective

Mechanical Engineering

01UME920 - ADVANCED IC ENGINES

(Regulation 2013)

Duration: Threehours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. List out some of the knock limited parameters.
2. What are the stages of combustion in a SI engines?
3. List the factors affecting the delay period.
4. Why specific fuel consumption is high in indirect injection type?
5. Which is the most effective after treatment for reducing engine emissions?
6. What is three way catalyst?
7. List the advantages and disadvantages of natural gas.
8. Name some alternates fuels used for internal combustion engines.
9. What is HCCI engine?
10. Write the advantages of Lean Burn Engine.

PART - B (5 x 16 = 80 Marks)

11. (a) Explain the various stages of combustion in a SI engine with a P- θ diagram. (16)

Or

- (b) What are important requirements of automobile carburetor and briefly explain any one carburetor with neat sketch. (16)

12. (a) Explain the process of combustion in CI engine. (16)

Or

- (b) What are the requirements of diesel fuel injection system? Explain air injection system with neat sketch. (16)

13. (a) What are the interpretations drawn from percentage of HC, CO, CO₂ and O₂ from engine exhaust. (16)

Or

- (b) What are the interpretations drawn from percentage of HC, CO, CO₂ and O₂ from engine exhaust. (16)

14. (a) What is LPG and How it will replace the conventional fuels and compare with petrol as fuel for SI engine. (16)

Or

- (b) Give a brief account of LPG being used as an alternate fuel in SI engine. (16)

15. (a) Explain the characteristics of a homogeneous charge compression ignition engine. (16)

Or

- (b) Discuss the operation of gasoline direct injection system with a block diagram showing clearly all the sensors. (16)
-