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**Question Paper Code : X 20826**

B.E./B.Tech. DEGREE EXAMINATIONS, NOV./DEC. 2020

Eighth Semester

Mechanical Engineering

ME 6016 – ADVANCED I.C. ENGINES

(Regulations – 2013)

(Common to PTME 6016 – Advanced I.C. Engines for B.E. (Part-Time)

Seventh Semester – Mechanical Engineering – Regulations – 2014)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions.

PART – A

(10×2=20 Marks)

1. What is meant by lean mixture ?
2. Illustrate the effect of Knocking.
3. What is turbocharging ?
4. Classify the types of combustion chambers in I.C. engines.
5. List down the major pollutants in I.C. engine.
6. Illustrate the importance of Catalytic converter.
7. What is the need of Alternate fuels in India ?
8. Classify the methods of storing hydrogen.
9. What is the use of Air assisted combustion in an I.C. engine ?
10. Classify the types of hybrid vehicles.

PART – B

(5×13=65 Marks)

11. a) Explain the Monopoint, Multipoint and Direct Injection system of an I.C. engine with a neat sketch.

(OR)

- b) Explain the factors that affect knocking in an I.C. engine.



12. a) Illustrate the working of a diesel injection system with neat sketch.

(OR)

b) Illustrate the stages of combustion in CI engine with crank angle diagram.

13. a) What is the use of Catalytic converter in an I.C. engines ? Explain with neat sketch.

(OR)

b) What is the role of Emission norms in Controlling Emissions ? Explain.

14. a) Classify any two methods by which hydrogen can be used in CI engine.

(OR)

b) Compare LPG and petrol as fuel for SI engines. What are the advantages and disadvantages of using LPG in SI engine ?

15. a) Explain the working of Common Rail Direct Injection (CRDI) system.

(OR)

b) What is meant by HCCI engine ? Explain with neat sketch with advantages.

PART – C

**(1×15=15 Marks)**

16. a) Design a suitable Hybrid vehicle that uses Electric and petrol as the source.

(OR)

b) Discuss the control measures that can be taken to avoid emissions.