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Roll No No....

AU/ME-227 (CBCS)

B.E. IV Semester

Examination, December 2017

Choice Based Credit System (CBCS)

Energy Conversion

Time : Three Hours

Maximum Marks: 60

Note: i)   Attempt any five questions.
     ii) All questions carry equal marks.
     iii) Assume suitable data, if any.

1. a) Compare between four stroke and two stroke engines.
   b) Explain the factors responsible for causing deviations between theoretical and actual cycles of IC engines.

2. a) Explain flame development and propagations.
   b) Explain valve timing and firing order with neat sketch.

3. a) Explain the various factors affecting the delay periods.
   b) Explain various stages of combustion in CI engines.

4. a) Compare battery ignition system with magneto ignition system.
   b) What are the cause of diesel smoke? What are the ways of controlling diesel smoke?

5. a) Explain in brief various types of turbo charging.
   b) How supercharging of two stroke engine in done?

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6. a) How the retardation of spark timing in a SI engine reduce detonation? Discuss in brief.
   b) Describe how the indicated power of a multi-cylinder engine is measured?

7. A four stroke four cylinder diesel engine running at 2000rpm develops 60kw. Brake thermal efficiency is 30% and calorific value of fuel is 42MJ/kg engine has a bore of 120mm and stroke of 100mm. Take $\rho_a = 1.15kg/m^3$, air fuel ratio = 15:1 and $\eta_m = 0.8$. Calculate
   i)   Fuel consumption (kg/s)
   ii) Air consumption (m³/s)
   iii) Indicated thermal efficiency
   iv) Volumetric efficiency
   v)   Break mean effective pressure
   vi) Mean piston speed

8. a) What is D-I engine and what do you understand by knock inhibitors? http://www.rgpvonline.com
   b) What is necessity of cooling the engine?

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