Total No. of Questions :8] *[Total No. of Printed Pages :2*

Roll No .....

AU/ME-227

B.E. IV Semester

Examination, June 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.

1. a) Explain valve timing diagram for four stroke cycle spark ignition engine.
   b) Describe the 'Morse test' for obtaining indicated power of multi cylinder engine.

2. The following observations were recorded during a test on a single cylinder oil engine:
   Bore = 300mm, stroke=450mm, speed 300rpm
   Imep = 6 bar; Net brake load = 1.5kN
   Brake drum diameter = 1.8 meters, brake rope diameter = 2cm
   Calculate:
   a) Indicated power
   b) Brake power
   c) Mechanical efficiency.

3. a) Describe the stages of combustion in S.I. Engine with the help of pressure crank angle diagram.
   b) What do you understand by pre-ignition in S.I. engine? What are its causes and remedy?

4. What is delay period in C.I. engine? Explain the effect of the following factors on delay period.
   a) Fuel properties
   b) Intake pressure
   c) Compression ratio
   d) Engine speed
   e) Injection advance

5. a) Explain the phenomenon of diesel knock. Compare it with the phenomenon of detonation in S.I. engine.
   b) Show with sketches how compression swirl is created? What are the advantages and disadvantages of compression swirl?

6. a) Explain the working of a magneto ignition system with the help of neat sketch. Discuss its relative merits and demerits over battery ignition system.
   b) Describe the operation of splash lubrication system with the help of neat sketch.

7. a) Discuss the different methods of supercharging used in practice. List out merits and demerits of each method.
   b) Explain the thermodynamic cycle of a supercharged IC engine.

8. Write short notes on :
   a) Micro processor controlled supercharging.
   b) Turbo charging
   c) Power balance for multi-cylinder engines.

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