SUBJECT CODE:- 70
FACULTY OF ENGINEERING AND TECHNOLOGY
F.E (All) Examination Nov/Dec 2015
Elements of Mechanical Engineering
(Revised)

[Time: Two Hours]   **[Max Marks : 40]**

"Please check whether you have got the right question paper."
N.B i) Q.No.1 is compulsory.
     ii) Attempt any two questions from the remaining.
     iii) Assume suitable data wherever necessary.
     iv) Figures to the right indicate full marks.
     v) Use of non-programmable calculator is allowed.

SECTION-A

Q.1   Solve <u>any five</u> of the following.   10
      a) Define thermodynamics system with examples.
      b) What is mean by path function?
      c) State the statements of first law of thermodynamics.
      d) Explain in brief Avogadro's law.
      e) What is mean by external combustion engines and internal combustion engines?
      f) Define refrigeration and air conditioning.
      g) What is meant by two stroke and four stroke engines?
      h) State disadvantages of nuclear power plants.

Q.2 A Explain the polytropic processes with neat sketch?   07
    B Explain the first law of thermodynamics using Joule's experiment?   08

Q.3 A Explain the working f four stroke compression ignition engine (diesel engine) with the help of neat sketch.   08
    B Explain the working of bourdon pressure gauge with neat sketch.   07

Q.4 A Explain with neat sketch the construction and working of nuclear power plant.   10
    B Differentiate between petrol engines and diesel engines.   05

Q.5 A Write short note on conventional and nonconventional energy sources.   05
    B Explain in brief window air conditioner.   05
    C Explain internal energy of a substance.   05

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