

May - June 2011

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S.E. (Mechanical/Mechanical S/W) EXAMINATION, 2011

**STRENGTH OF MACHINE ELEMENTS**

(2008 PATTERN)

**Time : Three Hours**

**Maximum Marks : 100**

**N.B. :-** (i) Attempt *three* questions from Section I and *three* questions from Section II.

(ii) Answers to the two Sections should be written in separate answer-books.

(iii) Neat diagrams must be drawn wherever necessary.

(iv) Figures to the right indicate full marks.

(v) Use of logarithmic tables, slide rule, Mollier charts, electronic pocket calculator and steam tables is allowed.

(vi) Assume suitable data, if necessary.

**SECTION I**

1. (a) Draw and explain typical stress strain diagram for ductile materials indicating all the salient points. [6]

(b) Define and explain the following terms : [6]

(i) Volumetric strain

(ii) Factor of safety

(iii) Thermal stress.

(c) A bar 30 mm × 30 mm × 250 mm long is subjected to a pull of 90 kN in the direction of its length. The extension of the bar was found to be 0.125 mm, while the decrease

P.T.O.





