**INDUSTRIAL ENGINEERING DEPARTMENT**

Subject: Engineering Mechanics Time Allowed: 2 hours

Year: 2015 Maximum Marks: 40

**Question 1:** The press shown is used to emboss a small seal at *E*. Knowing that P = 250 N, determine (*a*) the vertical component of the force exerted on the seal, (*b*) the reaction at *A*.

**Question 2:** Determine the force in members *CD* and *DF* of the truss shown.

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| Question 1 | Question 2 |

**Question 3:** The rigid L-shaped member *ABC* is supported by a ball-and-socket joint at *A* and by three cables. If a 8-kN load is applied at *F*, determine the tension in each cable.

**Question 4:** The frame shown supports part of the roof of a small building. Knowing that the tension in the cable is 150 kN, determine the reaction at the fixed end *E*.

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| Question 3 | Question 4 |