

رقم الكود:

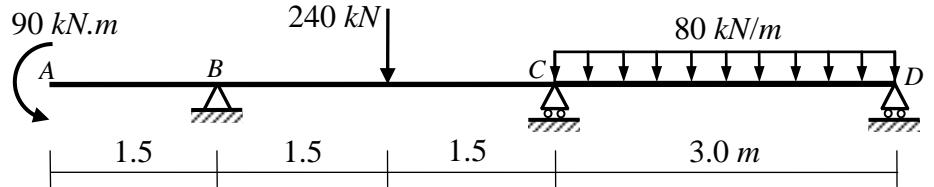
الاسم:

امتحان منتصف الترم

- The Exam consists of **2** questions in **2** pages.

**Question (1): (10 Marks)**

Using the three-moments equation, draw the shear force and bending moment diagrams for the shown beam

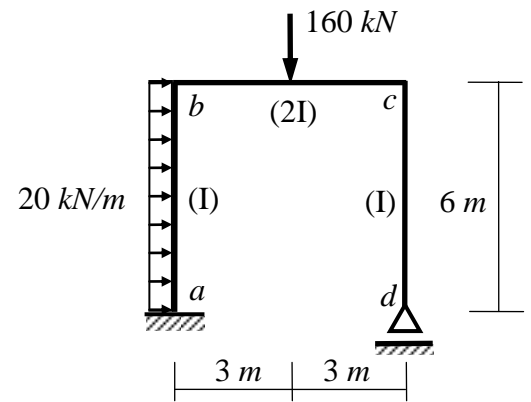


**Solution of Question (1)**

**Question (2): (10 Marks)**

For the shown frame with variable moment of inertia, using the **Consistent Deformations (Virtual Work)** method, draw the bending moment diagram due to the given loads.

$E$  is constant. The relative moments of inertia are given between brackets.



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**Solution of Question (2)**

*With my best wishes*

**Dr. M. Abdel-Kader**