

Fig-1

- (B) Analyse the beam show in fig.2 by moment distribution method and draw bending moment diagram. (7)

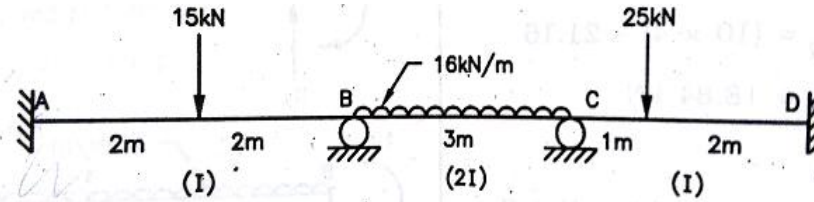


Fig-2

**Q-3 Attempt all questions (14)**

- (A) Analyse the continues beam show in fig.3 by slope deflection method. Support B sinks 5 mm and support C sinks by 2mm. Take  $E=2 \times 10^5$  N/mm<sup>2</sup> and  $I = 16 \times 10^6$  mm<sup>4</sup>. (7)

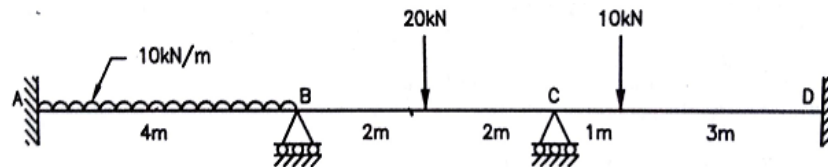


Fig-3

- (B) Write different equilibrium equation for various types of beam. (7)

**Q-4 Attempt all questions (14)**

- (A) Derive fundament equation for slope deflection method. (7)  
 (B) Analyse the beam show in fig.4 by slope – deflection method. (7)

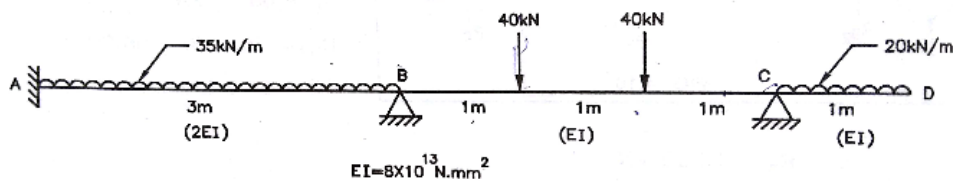


Fig-4

**Q-5 Attempt all questions (14)**

- (A) Explain linear arch in detail. (7)  
 (B) A three hinged parabolic arch has span 20m and central rise 3m. It carries a point load of 10kN at 7.5m from the left hinge. Calculate normal thrust, Shear and B.M at section 7.5m from right end hinge. (7)

**Q-6 Attempt all questions (14)**

- (A) Write difference between plane frame and grid.  
 (B) Determine reaction at prop for a proposed cantilever beam using



castigliano's second theorem as show in fig.5

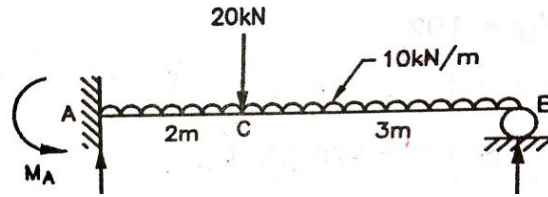


Fig-5

- Q-7**      **Attempt all questions**      **(14)**
- (A) Explain Muller- Breslau principle.
  - (B) Explain types of skeletal structures.
- Q-8**      **Attempt all questions**      **(14)**
- (A) Draw qualitative ILD for two span continuous beam.      **(4)**
  - (B) Draw qualitative ILD for three span continuous beam.      **(5)**
  - (C) Draw qualitative ILD for building frames.      **(5)**

