

Câu 1 (1,0)

Nội dung	Điểm
Bậc siêu tĩnh: $n = 3V - K = 5$	0.50
Bậc siêu động: $n = n_1 + n_2 = 3$	0.50

Câu 2 (3,0)

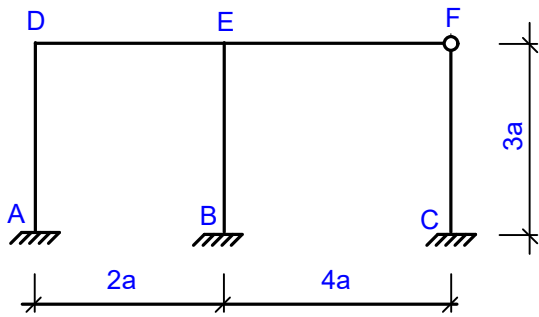
Nội dung	Điểm
Vẽ biểu đồ mô-men - Vẽ đoạn CD - Vẽ đoạn ABC	0.50 1.50
Vẽ biểu đồ lực dọc - Vẽ đoạn CD - Vẽ đoạn ABC	0.50 0.50

Câu 3 (2,0)

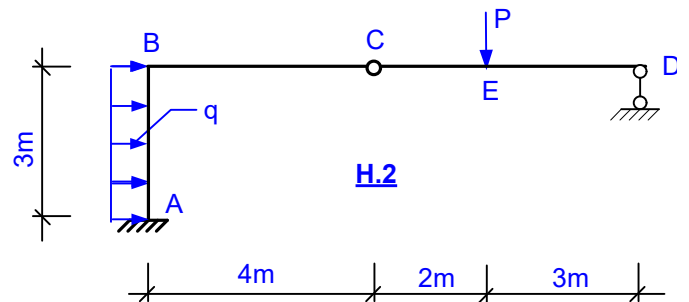
Nội dung	Điểm
a. Vẽ đường ảnh hưởng M_C	1.00
b. Tính $M_C = P_1 \cdot y_1 + q \cdot \Omega - P_2 \cdot y_2 = 57\text{kNm}$	1.00

Câu 4 (4,0). Dùng phương pháp chuyển vị.

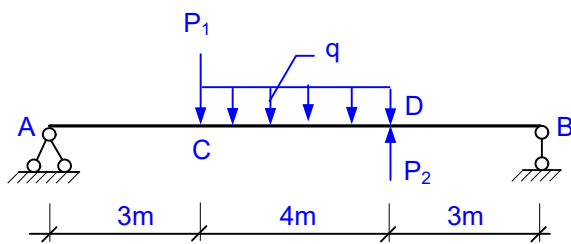
Nội dung	Điểm
Bậc siêu động, hệ cơ bản, phương trình chính tắc	0.25
Vẽ $\bar{M}_1$, và (M_p^0)	2×0.5
$r_{11} = \frac{3EI}{a}; R_{1p} = -\frac{qa^2}{8}$	2×0.5
$Z_1 = qa^3 / 24EI$	0.25
Vẽ M	0.50
Vẽ Q	1.00



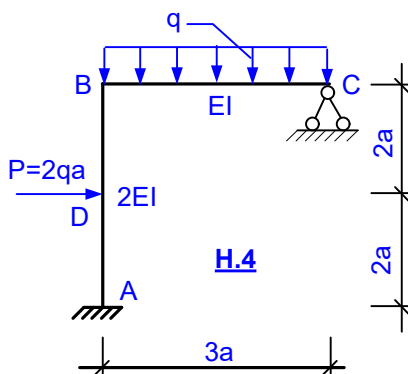
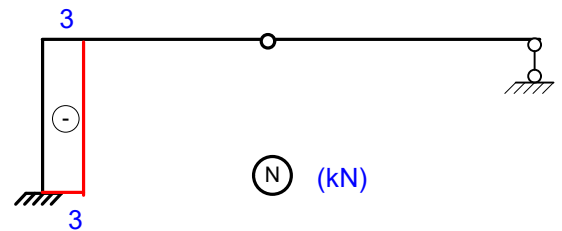
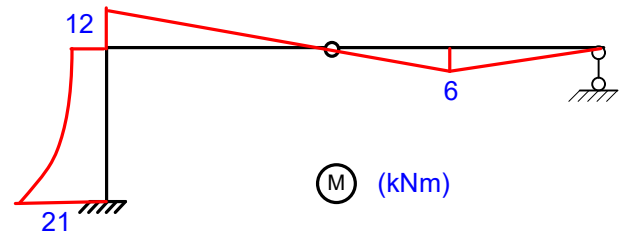
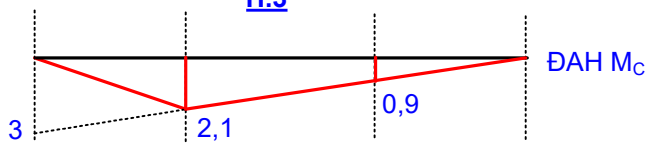
H.1



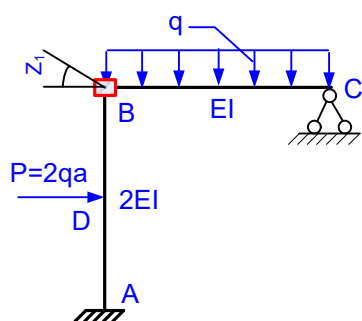
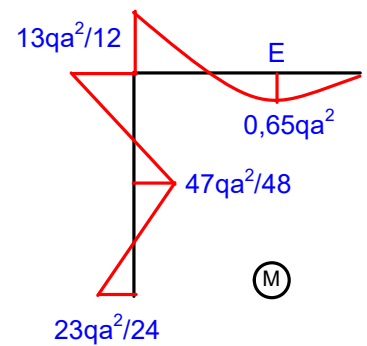
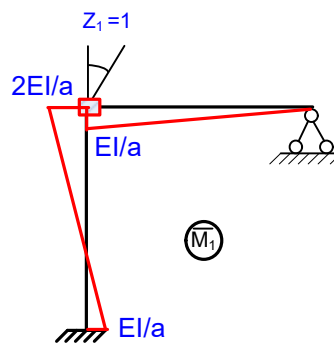
H.2



H.3



H.4



HCB

