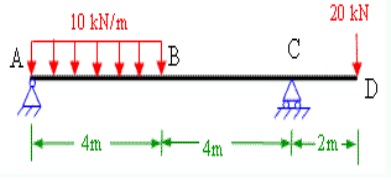
**MoS ESE – Dec 2022 - Solution**

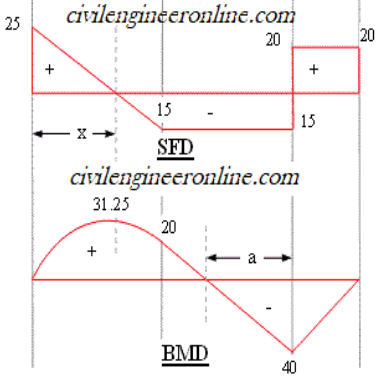
Q1. a Theory 6 marks

Q1. b μ = 0 .25 3 marks , K = 0.8 x 105 N/mm2 4 marks

Q1.C.

****

 3 marks

 4 marks

Q2. a thory 4 marks

Q2. b.

Solution:

Calculation of bending moment for the above condition

M = wL2/8

     = w (8)2/8

      = 8wX106 2 marks

Calculation of moment of inertia

I = bd3/12

  = (300) (2003) /12

  = 2X108mm4 2 marks

Calculation of Udl

M /I= σ / y

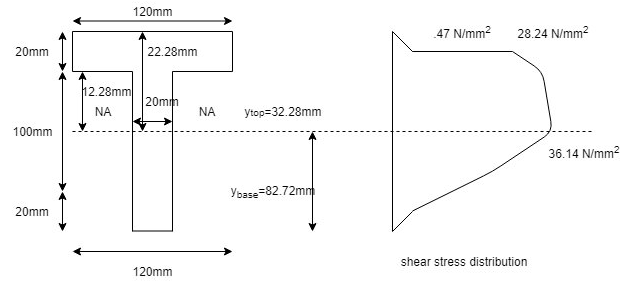
Substitute for above (where y = depth /2= 200/2 =100mm)

8wX106 /2X108= 120 / 100

w =3X104N/m or 30 N/mm2 2 marks

Q3. a Theory

Q3. b

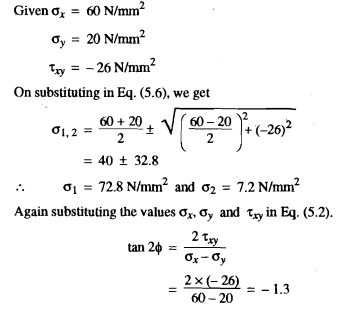


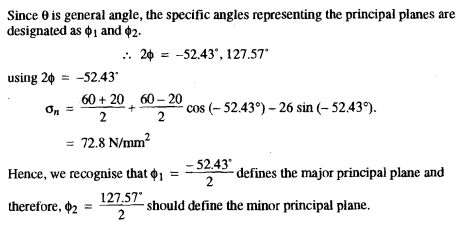
Q 4. a Theory 5 marks

Q. 4. B

Ϭn = 65 N/mm2, Ϭt = 60.62 N/mm2, Ϭr = 60.62 N/mm2 5 marks

Q. 4 C



 5 marks