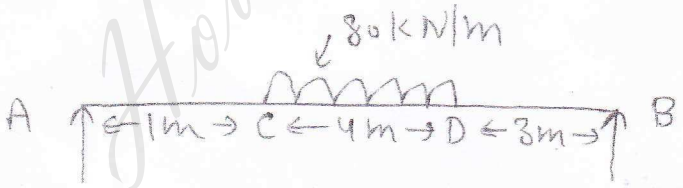
UNIVERSAL INSTITUTE OF TECHNOLOGY
SESSIONAL TEST – 3rd

BRANCH – MECHANICAL ENGG. (3rd SEM.)
SUBJECT – STRENGTH OF MATERIAL-1

MAX. MARKS- 20
TIME – 1.30 HOURS

Q.1 Compare the crippling loads given by Rankine and Euler's formula for a tubular strut **225cm** long having outer and inner diameter **37.5mm,32.5mm** respectively loaded pin joints at both ends. Take yield stress as **31.5KN\cm^2**, **a = 1/7500** and **E =2x10^{4}KN/cm^2**.If the elastic limit of material is taken as **20KN\cm^2** below what length of strut does the Euler's formula cease to apply. **(10)**

Q.2 A beam **AB** of span 8m is simply supported at ends A and B and is loaded as shown in figure. Taking **E= 2X10^{8}KN\m^2** and **I= 8.6X10^{8}mm^4**. Find the position and magnitude of maximum deflection.



(10)