**Iqra National University Peshawar**

**Name usman ali**

**ID 16963**

**Programed B.Tech Civil ii Semester**

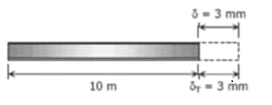
**Subject Mechanics of Material.**

**Submitted to Engr Marvan Raza**

**Exam Final Term**

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**Q no 1 Ans =**

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Temp = 25cº

3 = (11.7 x

3 = (117000 x

= = 25.641

= Tf = 50.641

**Q no 3 =**

****

**Ans No 3 =**

**Given data =** External Diameter = 600 mm

Internal Diameter = 300mm

Twisting Moment = 60 kn-m

Span = 5 m

G =0.8 x

Sol = Douter 600 x

Dinner = 300 x = 0.03

Formula T = Toque R = Radius G = Modula’s OF readies

I = Inertia

R =

60 x

T =

**T =** 15.2

Now putting the value

**Q no 5 = Find Shear force and bending moment diagram of given beam?**

**Ans =**

**Sol =**

=0

180 x 3 +RC (13) – 40 (15) = 0

-540 + 13RC – 600 = 0

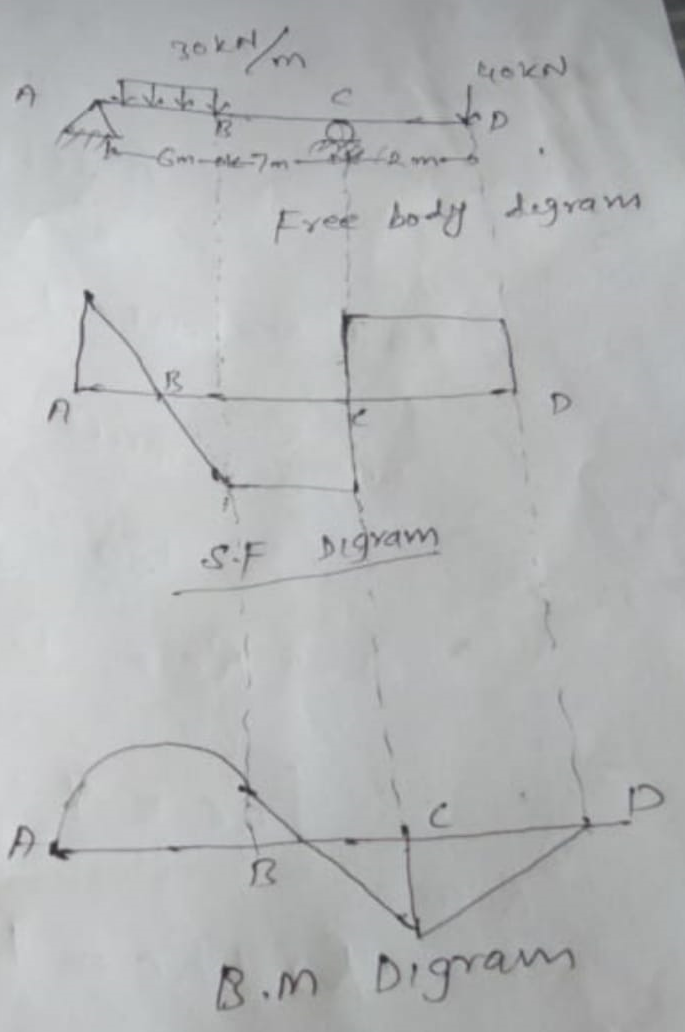
RC = 87.69 KN

EFY = 0

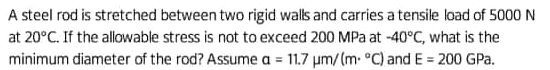
RA + RC = 180+40

RA =220 -87.69

**RA= 132.31 KN (diagram of question no 5 is given below)**

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**Q no 2 =**

****

**Ans Q no 2 =**

**Sol =**

**Stress is not exceed 200mpa**

**Dmin =?**

**E = 200 Gpa**

**P = 5000 N**

**Formula p = -**

**r =**

**= 2**

**D = 2**

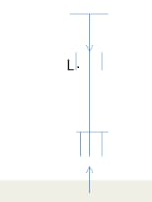
**D = 2**

D = 1.1134 x

**D = 11.134 x**

Q no 4 =

Q no Ans =



**Given Data** = Length = 30 fit

E = 31000 ksi

I = 1540

Area = 160

To find critical buckling load = per

Per =?

Slenderness Ratio =

Critical buckling load

**Formula** Per =

Per =

Per =

Now I find Slenderness Ratio =

Formula =

= = 9.67 Ans