Seat No: _____ Enrollment No: _____

PARUL UNIVERSITY

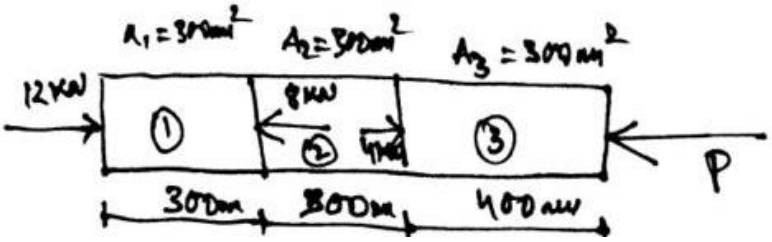
FACULTY OF ARCHITECTURE

B.Arch. Summer, 2018 Examination

Semester: 4 **Date: 10-05-2018**
Subject Code: 01101256 **Time: 2:00pm-4:00pm**
Subject Name: Structural Design & Analysis- II **Total Marks: 50**

Instructions:
1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions whenever required.
4. Draw suitable sketches whenever required.

Q.1 **(10)**



A member ABCD is subjected to point load as shown in fig.1 determine the total change in length of the member take E=200GPa.

Q.2 Attempt any five out of the following six. **(20)**

1) Explain the terms: 1.volumetric strain, 2.lateral strain, 3.elasticity of material,

2) Draw stress- strain curve for mild steel and explain the important point.

3) Explain advantages and disadvantages of determinate structure.

4) Explain ductile material, point of contracture.

5) 1. stress, 2. Strain, 3.hooke's law, 4. Bending moment,

6) 5. Volumetric strain, 6. Principle of supersession, 7. Poisson's ratio, 8. Modular ratio

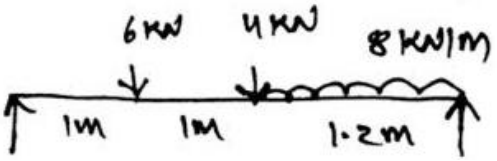
Q.3 Explain the following in brief. (Any five) **(10)**

1. young's modulus
2. bulk modulus.
3. longitudinal strain.
4. direct strain
5. super structure
6. substructure

Q.4 Answer any two out the following three. **(10)**

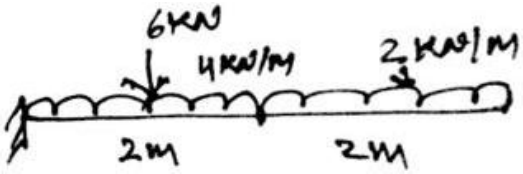
1) A reinforced concrete circular column of 400 mm diameter has 6 steel bars of 20 mm diameter embedded in it. If stress of steel is 120 Kn/m^2 and stress of concrete is 15 Kn/m^2.Find the maximum force acting on column

2)



Solve for shear force and draw the shear force diagram for fig 2

3)



Draw shear force diagram and bending moment for a cantilever beam. For fig 3