REGISTRATION NUMBER | | | | | | | | | | |

SRINIX COLLEGE OF ENGINEERING

1ST INTERNAL EXAMINATION-2017-18

Subject-PC Semester-8TH Branch-**CIVIL**

Full Mark-**30** Time-**1.30Hrs**

ANSWER ALLQUESTIONS (PART-A) **[2X5]**

1. What is the difference between pretensioning and post tensioning?
2. Explain advantages of prestressed concrete ?
3. What are the need of high steel and concrete ?
4. What is creep of concrete ?
5. Write down the different post tensioning systems?

ANSWER ANY TWO QUESTIONS (PART-B) **[10X2]**

1.A prestressed concretebeam 200mm wide and 300mm deep is prestressed with wires area 3200 mm2 located at a constant eccentricity 50 mm and carrying an initial stress of 1000 N/Sq mm. The span of the beam is 10m. Calculate the percentage loss of stress in wires if

(a) The beam is pretensioned (b) The beam is post tensioned

Modulus of elasticity of steel and concrete are 210,35 N/Sq mm , Creep coefficient is 1.6

Frictional coefficient for wave effect is. 0015 per meter , Modular ratio is 6

2. A prestressed concretebeam of section of 120mm wide by 300mm deep is used over an effective span of 6 meter to support a uniformly distributed load of 4KN /M which includes self weight of beam. The beam is prestressed by a straight cable carrying a force of 180KN and located at an eccentricity of 50mm. Determine the location of the thrust line in the beam and plot it's position at Central span section?

3. A rectangularprestressed beam is 150mm wide and 300mm deep is used over an effective span of 10m.The cable with zero eccentricity at the supports and linearly varying to 50mm at the center carries an effective prestressing force of 500KN.Find the magnitude of the concentrated load of Q located at the center of the span for the following conditions at the center of span section?

(a) If the load counteracts the Bending effect of the prestressing force

(b) Under the action of the external load, self weight and prestress