

**LPUNEST - Ph.D. Civil Engineering
(Sample Questions)**

- QUESTION 1** As per Indian standard code of practice for prestressed concrete (IS: 1343 -1980) the minimum grades of concrete to be used for post-tensioned and pre-tensioned structural elements are respectively
- Option A M20 for both
Option B M40 and M30
Option C M15 and M20
Option D M30 and M40
- QUESTION 2** The point within the cross sectional plane of a beam through which the resultant of the external loading on the beam has to pass through to ensure pure bending without twisting of the cross-section of the beam is called
- Option A Moment centre
Option B Centroid
Option C Shear centre
Option D Elastic center
- QUESTION 3** The number of independent elastic constants for a linear elastic isotropic and homogeneous material is
- Option A 4
Option B 3
Option C 2
Option D 1
- QUESTION 4** A simply supported beam is subjected to a uniformly distributed load of intensity w per unit length, on half of the span from one end. The length of the span and the flexural stiffness are denoted as l and EI respectively. The deflection at mid – span of the beam is
- Option A $5wl^4/6144 EI$
Option B $5wl^4/768EI$
Option C $5wl^4/384EI$
Option D $5wl^4/192EI$
- QUESTION 5** Water flows through a 100 mm diameter pipe with a velocity of 0.015m/sec. If kinematic viscosity of water is $1.13 \times 10^{-6} \text{ m}^2/\text{sec}$, then friction factor of the pipe material is

Option A	0.0015
Option B	0.032
Option C	0.037
Option D	0.048