Question Bank for PG Course
অঙ্ক (Mathematics)
দশম (খ ২) পত্র (Paper - XB(ii))
Mechanics of Solids : PGMT-XB(ii)
(NEW SYLLABUS)

1. What is the Navier's equation of equilibrium in the case of plane strain?

2. What is the condition when the body is in the state of plane stress parallel to $x_1 x_2$ plane?

3. What are the strain components in the case of axial extension of a beam under the action of a uniform normal stress N acting on the bases along x_1 axis?

4. What is the torsional rigidity in terms of Prandtl stress function?

5. What is the condition for the lines of shear stress?

6. What is the differential form of the Euler's equation associated with variational problem?

7. What is the Euler equation when a stretched string of length l with ends fixed at (0,0) and (l,0) be deflected by a distributed transverse load f(x) per unit length and also suppose that the transverse deflection y(x) is small and that the change in the stretching force T produced by deflection be negligible?

8. What is the expression of velocities of P-wave and S-wave?

9. Which one of the following statement

   P: The Love wave is dispersive in nature.

   Q: Rayleigh wave is dispersive in nature.

   is true?

10. What is the bonding rigidity of a thin plate with thickness h?

11. What is the differential equation of the transverse vibration of a thin plate?

12. What is the conditions of the simply supported edge for transverse vibration of a thin plate?

13. What are the stress deviators $S_x, S_y, S_z, S_{xy}, S_{yz}, S_{zx},$ (where, $\sigma_j's$ are principal stresses and S is the mean of the stress)?

14. What is the behaviour of potential energy when the displacements which satisfy the given boundary conditions and the equilibrium equations?

15. What is the expression for Goursat formula for the biharmonic equation?