Government Polytechnic Mayurbhanj, Tikarpada

CHAPTER WISE QUESTION BANK

SUBJECT:-Strength of Material

CHAPTER-1 (single stress & strain)

2 Marks question

1. State types of load
2. Define the stress and strain.
3. State HOOK'S law.
4. Define YOUNG'S Module.
5. State Bulk module.
6. State Module of Rigidity.
7. State Poisson's ratio.

5 mark question

1. Explain the principle of Superposition Theorem.
2. Derive the formula for determine of stress in composite section.
3. Derive the formula for determination of temperature stress in composite bar(single core).

10 mark question
1. Derive the relation between three elastic constant.

CHAPTER-2.0

(THIN CYLINDER AND SPHERID SHELL UNDER INTERNAL PRESSURE.

2 mark question
1. Define hoop stress and longitude stress.
2. State hoop strain & longitudand strain.
3. State the volumetric strain.

5 mark question

1. Derive the formula for hoop stress.
2. Derive the formula for longitudant stress.
10 mark question
1. Derive the formula for hoop & longitudant stress & strain.

CHAPTER -3.0(TWO DIMENSION STRESS SYSTEM)

1. State the premei plane.
2. State the meaning Neutral axis.

5 mark question
1. Explain about the mohr's circle to determination of principle stress and maximum stress.

10 mark question

1. Derive the formula for determination of normal stress shear stress and resultant stress.
2. Identity the location of principle plane and competition of principle stress.

CHAPTER-4.0(BENDING MOMENT AND SHEAR FORCE)

2 Mark question
1. State the types of load and bear.
2. State the sign convolution of shear force and bending moment.
3. State about confilever force.
4. State shear force.
5. State bending moment.
6. State meaning point contraflexer.

5 mark question.
1. Explain the concept of determine the shear force and bending moment diagram in contilever beam with pointed load.
2. Explain the concept of determinant of shear force and bending moment diagram with IDL.

10 MARK QUESTION
1. Explain the illustration for shear force and bending moment diagram of sampling supported beam with pointed load.
2. Explain the illustration for shear force and bending moment diagram of sumply supported beam with udl.

CHAPTER-5(THEORY OF SIMPLE BENDING)
2 Mark question

1. State Bending equator.
2. State moment of resistance.
3. State section module.

5 mark question
1. State assumption in theory of binding.

10 mark question
1. Proof M/1=B/Y=E/R
2. Explain the section module.

CHAPTER-6(COMBINED DIRECT & BENDING STRESS)
2 Mark question
1. Define coloumn.
2. Write down Eular equation.

5 mark question
1. Write down the end condition using eulars formula

10 mark question
1. Explain the determination of direct stress and bending stress maximum and minimum stress.

CHAPTER-7(TORSION)

2 Mark question

1. Write down the torque equation.

5 mark question

1. State the assumption of puretorsion.
2. Compare between solid and hollow shift subrested pure torsion.

10 Mark question

1. Derive the torsism equation for solid circular shift.
2. Derive the torsism equation equation for hollow circular shift.