Higher Secondary (Vocational)
CLASS XI
Semester - 2
Basic Civil Theory

Time Allowed: 1 hour 15 minutes **Full Marks: 30**

A. Answer any 5 (five) questions **(2 * 5 = 10)**

1. What do you mean by M30 concrete?
2. What do you understand by the term 'Workability' in concrete?
3. What is reducer in plumbing?
4. What is the use of PPE in construction?
5. What is the different classification of beams?
6. Define shear force.
7. State Hook's law.
8. Define modulus of elasticity.

B. Answer any 4 (four) questions **(4 * 5 = 20)**

1. What are the ingredients of PCC? What is the importance of Water-cement ratio in a concrete Mix? (2 + 3)
2. What is mechanical concrete mixture? What is the use of vibrator in construction? Explain curing of concrete. (1 + 1 + 3)
3. Write short notes on i. Gully Trap ii. Inspection chamber. (2 * 2.5)
4. Write down two properties of cast iron. Give two examples of uses of aluminium as building construction material or equipment. What is the full form of PVC? (2 + 3)
5. A beam of 8m span simply supported at its end carries loads of 2 kN and 5 kN at a distance of 3m and 6m from right support respectively. In addition, the beam carries a UDL of 4kN/m over its entire length. Draw the shear force and bending moment diagram. Also find the maximum bending moment. 5
6. A cantilever 6m long carries load of 30 kN, 70 kN, 40 kN and 60 kN at a distance of 0 m, 0.6 m, 1.5 m and 2m respectively from the free end. Draw the SF and BM diagram for the cantilever. 5
7. A Prismatic bar with rectangular cross section (20 mm × 40mm) and length of 2.8 m is subjected to an axial tensile force of 70 kN. The measured elongation of the bar is 1.2 mm. Calculate stress and strain. 5