Instructions: (1) All questions are compulsory.
(2) Illustrate your answers with neat sketches wherever necessary.
(3) Figures to the right indicate full marks.
(4) Assume suitable data, if necessary.

1. Attempt any nine of the following:
   a) Name four ores of iron.
   b) Give composition and properties of wrought iron.
   c) State any two applications of heat resisting steel Nichrome.
   d) What is the effect of Cr and Co on properties of steel?
   e) What is corrosion? Give its types.
   f) State and explain factors affecting on atmospheric corrosion.
   g) How the protection of metal done by the modification of environment?
   h) Why the galvanized containers are not used for storing food stuff?
   i) Write any four characteristics of good/ideal fuel.
   j) What are significance of proximate analysis?
   k) Write composition, properties of Biogas.
   l) Define lubricant. Name any two examples of liquid lubricants.

   Marks: 18

2. Attempt any four of the following:
   a) Write the chemical reactions taking place in zone of heat absorption.
   b) Write composition, properties and applications of 18-8 stainless steel, 18-4-1 high speed steel.
   c) Distinguish between cast iron, pig iron and steel.
   d) Define fuels. Give its detail classification.
   e) State and explain fractional distillation of crude petroleum. Write composition and uses of petrol and kerosine oil.
   f) What is LPG? Give its composition, properties and uses.

   Marks: 16

P.T.O.
3. Attempt any four of the following:
   a) Write the factors affecting the immersed corrosion.
   b) Describe the mech. of immersed corrosion by absorption of oxygen gas.
   c) Differentiate between Galvanising and Sherardizing. Write the similarity between galvanising and sherardizing.
   d) Define the following properties of lubricant
      i) Viscosity
      ii) Oiliness
      iii) Flash point
      iv) Pour point.
   e) Define lubrication. Explain the boundary lubrication.
   f) Write four functions of lubricant used in gears.