五、(a) Group technology (GT) is a philosophy of manufacturing. Briefly explain it please (5 %).

(b) What are the three basic steps for the implementation of GT (5 %).

六、The development of nontraditional material removal processes has been accelerated in recent years. EDM and LBM are two of them.

(a) State the basic theory of Electrical Discharge Machining (EDM) (5%).

(b)State the basic theory of Laser Beam Machining (LBM) (5 %).

(c)give and explain the advantages and disadvantages of EDM (5 %).

(d) give and explain the advantages and disadvantages of LBM (5 %).

七、Give four methods that may be used to minimize the angular distortion problems associated with welding (10 %).

八、A 10 mm dia., length 500 mm steel workpiece was obtained from the production line. Give three different non contact methods that may be used to measure the diameter of the workpiece (Sketch a diagram and explain the basic theory) (10 %).

1. (a)壓鑄法(die casting)可分為那兩種?(2%)
(b)試以簡圖說明此兩種之不同?(4%)
(c)試分別述其優缺点.(4%)
(d)試述其適用的合金材料.(2%)

2. (a)列出8種有縫與無縫鋼管的可能製造方法.(8%)
(b)(a)題不同方法的產品從表面精度、強度、價格的觀点有何特性(5%)

3. 解釋名詞 (20%)
(1) chill(冷塊)
(2) orthoganal cutting (正切削)
(3) oblique cutting (斜切削)
(4) core (砂心)
(5) spring back
(6) 軟 銲
(7) 硬 銲
(8) face milling (面銑)
(9) plane (slab) milling (平銑)
(10) BUE (Built-up Edge)

4. 試述銲條的功用.(5%)