

**GUJARAT TECHNOLOGICAL UNIVERSITY****Diploma Engineering Sem. - IV - Examination – June- 2011****Subject code: 345504****Subject Name: Welding Technology - II****Date: 08/06/2011****Time: 02:30 pm – 05:00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. English version is Authentic

- Q.1** (a) State factors affecting selection of TIG welding process and explain principle with neat sketch. **07**  
 (b) State effect of process parameters on weld quality in GTAW process. **07**
- Q.2** (a) Differentiate between TIG and MIG welding process **07**  
 (b) Explain with neat sketch pulsed TIG welding and give advantages of automated TIG welding. **07**
- OR**
- (b) Explain principle of plasma arc welding with neat sketch and list the process parameters. **07**
- Q.3** (a) Differentiate between M.A.G. and M.I.G. in detail. **07**  
 (b) Explain principle of FCAW and state advantages, limitations and application. **07**
- OR**
- Q.3** (a) Draw neat sketch and label its elements **07**  
       1. Laser Beam Welding  
       2. Electron beam welding  
 (b) Describe ultrasonic welding along with neat sketch. **07**
- Q.4** (a) State causes and remedies of following three major defects along with neat sketch. **07**  
       1. Crack                      2. Porosity                      3. Lack of fusion  
 (b) Prepare WPS as per ASME Sec IX with the help of following data **07**  
       1. welding process : SMAW  
       2. welding Position : 1 G  
       3. Plate material : SA 515 gr 60  
       4. Electrode : E-6013  
       5. Plate thickness : 20 mm
- OR**
- Q. 4** (a) Define 1. Essential variable 2. Non Essential variable **07**  
       3. Supplementary essential variable 4. WPS 5. WPQ 6. PQR  
       7. P - number  
 (b) Explain safety norms as per OHSAS/EHS. **07**
- Q.5** (a) Explain under water welding and give advantages, disadvantages and application. **07**  
 (b) State welding applications. Explain any THREE **07**
- OR**
- Q.5** (a) State advantages of mechanized arc welding and explain any two standard devices **07**  
 (b) Describe three types of metal transfer **07**

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