

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**DIPLOMA ENGINEERING – SEMESTER – III • EXAMINATION – SUMMER- 2017**

**Subject Code: 3332303****Date: 03-05 -2017****Subject Name: Mould Fabrication Technology-I****Time: 02:30 PM TO 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. Use of programmable & Communication aids are strictly prohibited.
5. Use of only simple calculator is permitted in Mathematics.
6. English version is authentic.

- Q.1** Answer any seven out of ten. **14**
1. List the name of engineering materials.
  2. Classify the engineering materials.
  3. Write the various types of steel.
  4. Explain the effect of phosphorus on properties of steel.
  5. List the non ferrous metals and alloys.
  6. Give the uses of non ferrous materials.
  7. Why heat treatment is carried out in metals?
  8. What is flame hardening process?
  9. List various applications of lathe machine.
  10. Give advantages and disadvantages of boring machine.
- Q.2** (a) Explain the effect of silicon on the properties of steel. **03**  
OR  
(a) List various properties of steel and explain any one in brief. **03**  
(b) Write about the properties of aluminum. **03**  
OR  
(b) Explain properties of copper. **03**  
(c) Give the different uses of cast iron. **04**  
OR  
(c) Explain briefly about properties of engineering materials. **04**  
(d) Explain the effect of alloying elements such as chromium and nickel on steel. **04**  
OR  
(d) Explain the effect of tungsten and molybdenum on the properties of steel. **04**
- Q.3** (a) Give applications of copper and its alloys. **03**  
OR  
(a) List various uses of aluminum and its alloys. **03**  
(b) Write about normalizing process as a heat treatment process. **03**  
OR  
(b) Explain the tempering process. **03**  
(c) Write short note on case hardening process. **04**  
OR  
(c) Explain the nitriding process as heat treatment of metal. **04**  
(d) Describe briefly, constructional features of milling machine. **04**  
OR

- (d) Explain working principle of lathe machine. **04**
- Q.4** (a) Draw a sketch of drilling machine and name all parts. **03**
- OR
- (a) Write advantages and disadvantages of drilling machine. **03**
- (b) List various operations carried out by milling machine and explain any one. **04**
- OR
- (b) Write short note on shaping machine. **04**
- (c) Draw a sketch of lathe machine and label all parts. **07**
- Q.5** (a) Describe annealing heat treatment process. **04**
- (b) Explain working principle of milling machine. **04**
- (c) Write the applications of engineering materials. **03**
- (d) Differentiate ferrous metals and non ferrous metals. **03**

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