

**B.Tech. (AEROSPACE ENGINEERING)  
(BTAE)**

**Term-End Examination**

00168

**June, 2016**

**BAS-004 : WORKSHOP TECHNOLOGY**

*Time : 3 hours*

*Maximum Marks : 70*

---

*Note : Answer any seven questions. All questions carry equal marks.*

---

1. (a) Briefly explain the following : 6
- (i) Austenitic stainless steel
  - (ii) Martensitic stainless steel
  - (iii) Ferritic stainless steel
- (b) Define the following with suitable examples : 4
- (i) Plasticity
  - (ii) Ductility
2. (a) Name different types of drilling machines. 3
- (b) Sketch and describe in brief a radial drilling machine. 7

3. What do you understand by gas welding ? Describe in brief the equipment required for oxy-acetylene welding. How are neutral, oxidizing and reducing flames obtained in a welding torch ? 10
4. Draw a sketch of a shaping machine. Describe in short various parts like base, column, cross-rail, saddle, ram and tool head. 10
5. (a) Differentiate between plain and universal milling machines. 5  
(b) How does milling differ from turning in a lathe machine ? Explain. 5
6. What are the hand tools used in carpentry ? Describe in brief any five of them. 10
7. Explain the following processes with reference to a lathe machine : 10  
(a) Facing  
(b) Knurling  
(c) Filing  
(d) Polishing  
(e) Grooving
8. (a) List the various drilling machine operations. 4  
(b) Draw a sketch of a simple twist drill with tapered shank and show its various elements. 6

9. (a) Classify measuring instruments. 2
- (b) Briefly explain the following measuring instruments with the help of sketches :  $2 \times 4 = 8$
- (i) Vernier caliper
- (ii) Height gauge
10. What do you understand by CNC machines ?  
What are the advantages of CNC machines as compared with conventional machines ? 10
-