

**COLLEGE OF ENGINEERING, PUNE**  
(AN AUTONOMOUS INSTITUTE OF GOVT. OF MAHARASHTRA)

**End Semester Examination**  
**(PE214) Manufacturing Technology**

**Programme: S. Y. B. Tech. (Institute Elective.)**

**Year : 2011-12**  
**Duration : 3 hr**

**Semester : I**  
**Max. Marks : 50**

**Instructions:**

- 1. Question No. 1 is compulsory. Solve any FOUR from remaining questions.**
2. Electronic non-programmable calculator is permitted.
3. Figures to right indicate full marks.
4. Draw neat figures wherever required.

**Q.1 Attempt any FOUR:**

- a) State the different operations that can be carried out on Lathe and explain any four. 2½
- b) Draw the neat sketch of Knee and Column type milling machine and explain its working. 2½
- c) State and explain different sand testing methods and their objectives. 2½
- d) A 200 mm long 16 mm diameter stainless steel rod is to be reduced in diameter to 13 mm by turning on a lathe in one pass. The spindle rotates at 600 rpm, and the tool is traveling at an axial speed of 150 mm/min. Calculate the cutting speed and the time required for machining the steel rod. 2½
- e) State and explain different sand molding methods. 2½
- f) Explain with neat sketch centrifugal casting process. 2½

- Q.2**
- a) State the importance of grinding operations. Explain the surface grinding operation with neat sketch. 5
  - b) Explain the principle of Gas Welding. State different types of flames used in Gas Welding and state their applications. 5

- Q.3**
- a) Explain the thermit welding process with neat sketch. Also state its applications. 5
  - b) Write short note on following 5
    - i. Friction Welding
    - ii. Diffusion Bonding

- Q.4**
- a) State the basic components of Numerical Controlled (NC) machine and explain them briefly. 5
  - b) What is meant by process planning? Explain the various steps involved in manual process planning. 5

- Q.5**
- a) Explain the process of Metal Burnishing with neat sketch stating its applications and advantages. 5

- b) Differentiate between following 5
- i. Lapping and Buffing
  - ii. Super finishing and Honing

- Q.6 a) Write short note on following 5
- i. Electron Beam Machining
  - ii. Laser beam machining

- b) Write short note on following 5
- i. Pattern making allowances
  - ii. Adhesive welding (Bonding)
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