

End Semester Examination
(PE214) Manufacturing Technology

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

Year : 2010-11
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.

Attempt any FOUR:

- Q.1**
- a) State different work holding devices used on the lathe and explain any two. 2½
 - b) Determine the angle at which the compound rest would be swiveled for cutting a taper on a workpiece having a length of 200 mm and outside diameter 60 mm. The smallest and largest diameters on the tapered end of the rod should be 40 mm and 60 mm respectively and the required length of the tapered portion is 100 mm. 2½
 - c) State different types of milling cutters and explain any two with neat sketches. 2½
 - d) Draw the neat sketch of reaming tool and explain the importance of reaming operation. 2½
 - e) Explain the principle of Electron Beam welding with neat sketch and state its advantages. 2½
- Q.2**
- a) Explain the term pattern and state different types of patterns. 2
Also state and explain different types of pattern allowances. 3
 - b) Explain with neat sketches different stages in shell molding process. Also state its applications and advantages. 5
- Q.3**
- a) Explain the principle of arc welding. State different types of arc welding and explain any two types briefly. 5
 - b) Write short note on following 5
 - i. Butt welding
 - ii. Types of flames in gas welding
- Q.4**
- a)
 - i. What is meant by Numerical Control of the machine tools? State the advantages of NC machine tools over conventional machine tools. 3
 - ii. Differentiate between the open loop system and close loop system. 2
 - b) Write short note on following 5
 - i. Features of CNC
 - ii. Variant approach of process planning

- Q.5 a)** Explain with neat sketch principle of grinding operation. 2
Also explain the following terms with neat sketches 3
- i. Traverse grinding
 - ii. Plunge Grinding
 - iii. Profile Grinding
- b)** Write short note on following 5
- i. Lapping
 - ii. Polishing and buffing
- Q.6 a)** State the importance of Non-conventional machining processes in 5
manufacturing. Also explain with neat sketch principle and applications of
Electrical discharge machining.
- b)** Write short note on following 5
- i. Moulding Sand Testing
 - ii. Brazing and Soldering
