

INSTRUCTIONS TO PAPER SETTERS:

MAXIMUM MARKS: 75

1. Question No. 1 should be compulsory and cover the entire syllabus. This question should have objective or short answer type questions. It should be of 25 marks.
2. Every unit should have two questions. However, student may be asked to attempt only 1 question from each unit. Each question should be of 12.5 marks.

Unit-I

Casting Processes:

Principles of metal casting: Pattern materials, types and allowance; Study of moulding, sand moulding, tools, moulding materials, classification of moulds, core, elements of gating system, casting defects, description and operation of cupola: special casting processes e.g. die-casting, permanent mould casting, centrifugal casting, investment casting. **[No. of Hrs. 6]**

Unit-II

Smithy and Forging:

Basic operation e.g. upsetting, fullering, flattening, drawing, swaging: tools and appliances: drop forging, press forging.

Bench Work and Fitting

Fitting, sawing, chipping, thread cutting (die), tapping; Study of hand tools, Marking and marking tools. **[No. of Hrs. 6]**

Unit-III

Metal joining:

Welding principles, classification of welding techniques; Oxyacetylene Gas welding, equipment and field of application, Arc-welding, metal arc, Carbon arc, submerged arc and atomic hydrogen welding, Electric resistance welding: spot, seam, butt, and percussion welding; Flux: composition, properties and function; Electrodes, Types of joints and edge preparation, Brazing and soldering. **[No. of Hrs. 6]**

Unit-IV

Sheet Metal Work:

Common processes, tools and equipments; metals used for sheets, standard specification for sheets, spinning, bending, embossing and coining. **[No. of Hrs. 5]**

Text Books:

1. Manufacturing Process by Raghuvanshi.
2. Manufacturing Technology by P.N.Rao (TMH publications)

Reference Books:

1. Workshop Technology by Hazra-Chowdhary
2. Production Engineering by R.K.Jain
3. Workshop Technology by Chapman