4. a) Explain with neat sketch the principle working of Horizontal forging machine.
   b) Mentioning name of components, describe working of simple power press.

5. a) Explain the T.I.G. & M.I.G. system of arc-welding power source.
   b) For welding heavy rail section, thermit welding is often used. Explain how the heat necessary for the joining process is obtained.

6. a) Write short notes on laser beam welding detailing the application.
   b) Explain the various techniques of oxy-acetylene gas welding.

7. a) Explain various forging operations and draw sketches.
   b) How care is different from pattern?

8. a) State & explain the following with figure.
      i) Wear allowance.
      ii) Gauge tolerance.
   b) Explain various types of cutting fluids.

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AU/ME/IP/IEM - 302

B.E. III Semester

Examination, December 2012

Production Process

Time : Three Hours

Maximum Marks : 70/100

Note: *1. Attempt any five questions.*
2. All questions carry equal marks.
3. Draw neat sketch, if required.

1. a) What is the function of slip gauges? Explain with neat sketch its properties.
   b) What is rolling process? Discuss various types of Rolling mills.

2. a) Derive an expression for drip thickness ratio. Also define metal removal rate.
   b) Compare the tool life of two cutting tools (HSS and carbide) at a speed of 30m/min. The tool life is 130 min. The tool life equation for H.S.S. tool is given by $VT^{1/7} = C_1$ and carbide $VT^{1/5} = C_2$ at the cutting speed of 24 m/min.

3. a) What are the allowances provided on patent and why?
   b) How does hot chamber die casting machine differ from hot chamber machine?