c) Discuss various types of flames produced in gas welding. 2

c) What is principle of resistance welding. What do you understand by heat balance in resistance welding. 3

d) What is the principle of Arc welding? Differentiate between AC arc welding and DC arc welding. 7

OR

What is the importance of coating in any welding electrode? Write down the difference between TIG and MIG welding process. 7

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Roll No .....

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AU/IP/ME/PR - 302

B.E. III Semester

Examination, June 2014

Production Process

Time : Three Hours

Maximum Marks : 70

Note: i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.

ii) All parts of each question are to be attempted at one place.

iii) All questions carry equal marks, out of which part A and B (Max. 50 words) carry 2 marks, part C (Max. 100 words) carry 3 marks, part D (Max. 400 words) carry 7 marks.

iv) Except numericals, Derivation, Design and Drawing etc.

Unit - I

1. a) In what ways, the measuring instruments can be classified? 2

b) List down various linear and angular measurement instruments. 2

c) Briefly explain the principle of rolling process with a neat sketch. 3

d) Explain the working of a sin bar. 7

OR

Briefly explain the terms like limits, fits and tolerances. 7

Unit - II

2. a) Show a labeled diagram of metal machining in lathe. 2

b) Discuss crater wear and flank wear in a cutting tool. 2

c) Briefly explain essential properties of cutting tool materials. 3

d) Derive an expression to show the relationship among shear angle, rake angle and chip thickness ratio. 7

OR

The taylorian tool life equation for machining C40 steel with a 18:4:1 HSS cutting tool at a feed of 0.2 mm/min and a depth of cut of 2mm is given by $VT^n = C$, where n and C are constants. The following V and T observations have been noted:

V, me/min	25	35
T, min	90	20

Calculate (i) n and c (ii) Hence recommend the cutting speed for a desired tool life of 60 minutes. 7

Unit - III

3. a) What is pattern? Write down pattern allowances. 2

b) List down types of pattern materials. Write down advantages, limitations and applications of metal pattern material. 2

c) Discuss the properties of moulding materials. 3

d) Explain Die-casting. 7

OR

Explain the shell moulding. 7

Unit - IV

4. a) Discuss forging operations. 2

b) Discuss the blocking impression in forging. 2

c) Differentiate between a coining and embossing. 3

d) Determine the die and punch sizes for blanking a circular disc of 20mm diameter from C20 steel sheet whose thickness is 1.5 mm. Shear strength of annealed C20 steel is 294 MPa. 7

OR

Explain following terms with the help of neat diagram.

i) Blanking

ii) Piercing

iii) Notching 7

Unit - V

ple of gas welding? Write down
of gas and correspondingly flame temperature in °C. 2