

**24169**

**B.Tech. 4th Semester (ME) F. Scheme**

**Examination, May-2014**

**MANUFACTURING TECHNOLOGY-I**

**Paper-ME-202-F**

*Time allowed : 3 hours]*

*[Maximum marks : 100*

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*Note : Question No. 1 is compulsory. Attempt any five questions selecting at least one question from each section.*

1. (a) Define Shear plane angle. 20
- (b) What are the reasons of using chemical coolants ?
- (c) What are Jig bushes ?
- (d) What is function of sine bar ?
- (e) List the operation performed on lathe machine.
- (f) Define fettling in casting.
- (g) What is function of flux in welding ?
- (h) What is extrusion ?

**Section-A**

2. Draw a neat labelled sketch of right single point cutting tool showing various tool angles. What are the effects of various tool angles on machining ? Explain what is built up edge ? 20

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3. (a) In Taylor's tool life exponent  $n=0.5$  and constant  $C=400$ , What will be the percentage increase in tool life be when cutting speed is reduced to half. 20
- (b) What is meant by machinability ? Explain the methods of representing the machinability.

### Section-B

4. List the main component of Jig and Fixtures. How are Jigs and Fixtures classified ? Briefly explain the principals of Jig and Fixtures design. 20
5. Write short notes on : 20
- (a) Mechanical comparator
- (b) Surface finish and its measurement
- (c) Screw gauge.

### Section-C

6. With the help of neat sketch explain the principal of turret lathe. 20
7. Explain the basic steps in casting process. Also explain the pattern allowances. 20

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**Section-D**

8. Explain the working principal of resistance welding.  
Also explain the different types of welding defects.

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9. Explain the principal of hot working and cold working.  
Explain the Shearing, blanking, and piercing operation.

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