

**R09**

Code No: 56062

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**

**B. Tech III Year II Semester Examinations, April - 2018**

**MECHANICAL WORKING OF METALS**

**(Metallurgical and Materials Engineering)**

**Time: 3 hours**

**Max. Marks: 75**

**Answer any five questions  
All questions carry equal marks**

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1. What is the importance of Mohr's circle? Explain the Mohr's circle of a stress in three dimensions. [15]
- 2.a) Briefly describe about the flow curve.  
b) Explain about Von-Mises' criterion. [7+8]
- 3.a) How do you classify forming processes? And write the applications of each.  
b) Differentiate between cold working and hot working. [7+8]
- 4.a) Describe various forging equipment and their importance.  
b) What are various forging defects? Describe their causes and remedies. [7+8]
- 5.a) How do you classify rolling process? Write their advantages and disadvantages.  
b) With the help of neat diagrams explain differences between cold rolling and hot rolling. [7+8]
6. Discuss about the Cook-McCrum's formula for force and torque in hot rolling. [15]
- 7.a) Explain with sketches the differences between direct and indirect extrusion.  
b) Discuss various extrusion defects with the help of neat sketches. [8+7]
8. Distinguish between wire drawing and tube drawing with neat sketches. [15]

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