

**Code No: 153BR****JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B.Tech II Year I Semester Examinations, March - 2021****PRODUCTION TECHNOLOGY****(Mechanical Engineering)****Time: 3 hours****Max. Marks: 75****Answer any five questions****All questions carry equal marks**

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- 1.a) What are composite moulds? Why are they used? Where are they used?  
b) What are the differences between natural sand and synthetic sand with regard to their properties? [7+8]
- 2.a) Describe the solidification of a pure metal with a neat sketch.  
b) What are the advantages and applications of die casting? [8+7]
- 3.a) Explain the effect of polarity on penetration in DC arc welding.  
b) Explain the process of thermit welding. Where would you recommend it? State and explain clearly the controlling parameters that influence the thermit welding. [7+8]
- 4.a) Why do properties vary widely in most welding heat affected zones?  
b) What is meant by weld quality? Discuss the factors that influence it. [8+7]
- 5.a) Explain the applications, advantages and limitations of explosive welding.  
b) Explain role of friction and strip tensions in rolling load and process. [8+7]
- 6.a) Explain the process of piercing. How does it differ from hot spinning? Explain.  
b) What are the advantages of mechanical press over hydraulic press? [8+7]
- 7.a) Identify the factors that influence the bending force  $F$  and explain why they do?  
b) Explain the effect of extrusion variables on extrusion pressure. [8+7]
- 8.a) Describe the rotary forging process with a sketch. What are its typical applications?  
b) Explain the principle of working of explosive forming. [8+7]

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