

**R09**

Code No: 55018

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**

**B. Tech III Year I Semester Examinations, November/December - 2016**

**MACHINE TOOLS**

**(Mechanical Engineering)**

**Time: 3 hours**

**Max. Marks: 75**

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

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- 1.a) What do you understand by the term 'Machinability'? What are the parameters, which influence the machinability of a material? State the criteria for determining the machinability of a material.
- b) Define 'cutting speed' and 'Feed'. What factors influence the cutting speed and feed of a cutting tool? [8+7]
- 2.a) Differentiate saddle-type and ram-type turret lathes.
- b) What are box tools? Describe with sketch a roller steady box turning tool for turning. [7+8]
- 3.a) Classify shaper and explain about ram and shaper head of shaper machine.
- b) Classify planer and explain about bed and table of planer machine. [8+7]
- 4.a) What is a twist drill? Explain the parts and function of a twist drill. What are the advantages of using it?
- b) What is a jig-boring machine? Describe its construction and working in detail with a neat sketch. [7+8]
- 5.a) How many types of milling cutters are there? Explain some of them with neat sketches.
- b) What is indexing? Explain some common methods of indexing in milling machines. [7+8]
- 6.a) Give the classification of grinding machines. Explain cylindrical and surface grinding machines with suitable sketches.
- b) What are the wheel materials of a grinding wheel? Discuss in detail. [8+7]
- 7.a) What is honing? Describe about honing and honing tools.
- b) Why robust fixtures are required to support jobs to be broached? [7+8]
8. Define Jig and fixture. Mention the difference between them. Discuss the essential features of Jig and fixtures. [15]

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