

**Code.No: R05311404****R05****SET-1****III B.TECH – I SEM EXAMINATIONS, NOVEMBER – 2010****MACHINE TOOLS****MECHANICAL ENGINEERING  
(MECHATRONICS)****Time: 3hours****Max.Marks:80****Answer any FIVE questions  
All questions carry equal marks**

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1. Define Machinability and Tool life. Describe the main types of tool failures. [16]
2. Explain different methods of Taper Turning with neat sketches. [16]
3. Describe the operations of cutting T-slots on a shaper with neat diagrams. [16]
4. Write short note on following:
  - a) A tap drill.
  - b) Comparison between taper, plug and bottoming taps
  - c) Effect of drill speed on drill points. [16]
5. Classify the jig bushes used in drilling jigs. Why must the inner of renewable bushings are clamped? What is an indexing jig? [16]
- 6.a) What are the common work holding devices used on milling machines? Explain their salient features with neat sketches.
  - b) What factors must be considered in the design of special fixtures? [8+8]
7. By means of sketches, show how form-type cutters may be ground on a universal grinding machine. [16]
- 8.a) What are the advantages of hydraulic and pneumatic clamping devices over manual clamping?
  - b) How does a template jig differ from a plate jig? [8+8]

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**Code.No: R05311404****R05****SET-2****III B.TECH – I SEM EXAMINATIONS, NOVEMBER – 2010****MACHINE TOOLS****MECHANICAL ENGINEERING  
(MECHATRONICS)****Time: 3hours****Max.Marks:80****Answer any FIVE questions  
All questions carry equal marks**

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1. Describe the operations of cutting T-slots on a shaper with neat diagrams. [16]
2. Write short note on following:
  - a) A tap drill.
  - b) Comparison between taper, plug and bottoming taps
  - c) Effect of drill speed on drill points. [16]
3. Classify the jig bushes used in drilling jigs. Why must the inner of renewable bushings are clamped? What is an indexing jig? [16]
- 4.a) What are the common work holding devices used on milling machines? Explain their salient features with neat sketches.  
b) What factors must be considered in the design of special fixtures? [8+8]
5. By means of sketches, show how form-type cutters may be ground on a universal grinding machine. [16]
- 6.a) What are the advantages of hydraulic and pneumatic clamping devices over manual clamping?  
b) How does a template jig differ from a plate jig? [8+8]
7. Define Machinability and Tool life. Describe the main types of tool failures. [16]
8. Explain different methods of Taper Turning with neat sketches. [16]

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**Code.No: R05311404****R05****SET-3****III B.TECH – I SEM EXAMINATIONS, NOVEMBER – 2010****MACHINE TOOLS****MECHANICAL ENGINEERING  
(MECHATRONICS)****Time: 3hours****Max.Marks:80****Answer any FIVE questions  
All questions carry equal marks**

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1. Classify the jig bushes used in drilling jigs. Why must the inner of renewable bushings are clamped? What is an indexing jig? [16]
- 2.a) What are the common work holding devices used on milling machines? Explain their salient features with neat sketches.  
b) What factors must be considered in the design of special fixtures? [8+8]
3. By means of sketches, show how form-type cutters may be ground on a universal grinding machine. [16]
- 4.a) What are the advantages of hydraulic and pneumatic clamping devices over manual clamping?  
b) How does a template jig differ from a plate jig? [8+8]
5. Define Machinability and Tool life. Describe the main types of tool failures. [16]
6. Explain different methods of Taper Turning with neat sketches. [16]
7. Describe the operations of cutting T-slots on a shaper with neat diagrams. [16]
8. Write short note on following:  
a) A tap drill.  
b) Comparison between taper, plug and bottoming taps  
c) Effect of drill speed on drill points. [16]

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**Code.No: R05311404****R05****SET-4****III B.TECH – I SEM EXAMINATIONS, NOVEMBER – 2010****MACHINE TOOLS****MECHANICAL ENGINEERING  
(MECHATRONICS)****Time: 3hours****Max.Marks:80****Answer any FIVE questions  
All questions carry equal marks****- - -**

1. By means of sketches, show how form-type cutters may be ground on a universal grinding machine. [16]
- 2.a) What are the advantages of hydraulic and pneumatic clamping devices over manual clamping?  
b) How does a template jig differ from a plate jig? [8+8]
3. Define Machinability and Tool life. Describe the main types of tool failures. [16]
4. Explain different methods of Taper Turning with neat sketches. [16]
5. Describe the operations of cutting T-slots on a shaper with neat diagrams. [16]
6. Write short note on following:  
a) A tap drill.  
b) Comparison between taper, plug and bottoming taps  
c) Effect of drill speed on drill points. [16]
7. Classify the jig bushes used in drilling jigs. Why must the inner of renewable bushings are clamped? What is an indexing jig? [16]
- 8.a) What are the common work holding devices used on milling machines? Explain their salient features with neat sketches.  
b) What factors must be considered in the design of special fixtures? [8+8]

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