Code No: RR320303 **RR** **Set No. 2**

**III B.Tech II Semester Examinations,December 2010**
**MACHINE TOOLS**
**Mechanical Engineering**

**Time: 3 hours** **Max Marks: 80**

**Answer any FIVE Questions**
**All Questions carry equal marks**

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1. (a) Explain what is meant by Reaming? [6]
   (b) Show with neat sketches the constructional features of a hand reamer and label the important features [10]
2. (a) What are the differences between a capstan lathe and turret lathe? [6]
   (b) Explain with help of suitable sketches, different tool holders used in turret lathe. [10]
3. (a) Explain terms speed, feed and depth of cut as applicable in metal cutting. [6]
   (b) What are various sources of heat generation in metal cutting? Explain. [10]
4. (a) What are steady and follower rests? Why are they used? [8]
   (b) Explain about apron mechanism used in lathe. [8]
5. (a) What are various operations performed on shaper? Explain in detail [8]
   (b) Describe constructional features of speed gearbox of slotter? [8]
6. (a) Explain how a grinding wheel is selected for thread grinding and tool sharpening. [8]
   (b) Explain clearly the various operating conditions for the grinding process. [8]
7. (a) What is meant by 3-2-1 principle of location. [8]
   (b) Explain the essential characteristics in the proper design of Jigs and Fixture. [8]
8. Explain with a neat sketch what do you understand by the words " helix angle"and "direction of cut" in the case of milling. What is their importance with respect to machining performance? Explain the basis on which these are selected. [16]

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Code No: RR320303 **RR** **Set No. 4**

**III B.Tech II Semester Examinations,December 2010**
**MACHINE TOOLS**
**Mechanical Engineering**

**Time: 3 hours** **Max Marks: 80**

**Answer any FIVE Questions**
**All Questions carry equal marks**

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1. (a) What is meant by 3-2-1 principle of location. [8]
   (b) Explain the essential characteristics in the proper design of Jigs and Fixture. [8]
2. (a) Explain what is meant by Reaming? [6]
   (b) Show with neat sketches the constructional features of a hand reamer and label the important features [10]
3. Explain with a neat sketch what do you understand by the words " helix angle" and "direction of cut" in the case of milling. What is their importance with respect to machining performance? Explain the basis on which these are selected. [16]
4. (a) What are various operations performed on shaper? Explain in detail [8]
   (b) Describe constructional features of speed gearbox of slotter? [8]
5. (a) Explain how a grinding wheel is selected for thread grinding and tool sharpening. [8]
   (b) Explain clearly the various operating conditions for the grinding process. [8]
6. (a) What are steady and follower rests? Why are they used? [8]
   (b) Explain about apron mechanism used in lathe. [8]
7. (a) Explain terms speed, feed and depth of cut as applicable in metal cutting. [6]
   (b) What are various sources of heat generation in metal cutting? Explain. [10]
8. (a) What are the differences between a capstan lathe and turret lathe? [6]
   (b) Explain with help of suitable sketches, different tool holders used in turret lathe. [10]

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Code No: RR320303 **RR** **Set No. 1**

**III B.Tech II Semester Examinations,December 2010**
**MACHINE TOOLS**
**Mechanical Engineering**

**Time: 3 hours** **Max Marks: 80**

**Answer any FIVE Questions**
**All Questions carry equal marks**

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1. (a) Explain terms speed, feed and depth of cut as applicable in metal cutting. [6]
   (b) What are various sources of heat generation in metal cutting? Explain. [10]
2. (a) What are the differences between a capstan lathe and turret lathe? [6]
   (b) Explain with help of suitable sketches, different tool holders used in turret lathe. [10]
3. (a) Explain what is meant by Reaming? [6]
   (b) Show with neat sketches the constructional features of a hand reamer and label the important features [10]
4. (a) What are various operations performed on shaper? Explain in detail [8]
   (b) Describe constructional features of speed gearbox of slotter? [8]
5. Explain with a neat sketch what do you understand by the words " helix angle"and "direction of cut" in the case of milling. What is their importance with respect to machining performance? Explain the basis on which these are selected. [16]
6. (a) Explain how a grinding wheel is selected for thread grinding and tool sharpening. [8]
   (b) Explain clearly the various operating conditions for the grinding process. [8]
7. (a) What are steady and follower rests? Why are they used? [8]
   (b) Explain about apron mechanism used in lathe. [8]
8. (a) What is meant by 3-2-1 principle of location. [8]
   (b) Explain the essential characteristics in the proper design of Jigs and Fixture. [8]

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Code No: RR320303 **RR** **Set No. 3**

**III B.Tech II Semester Examinations,December 2010**
**MACHINE TOOLS**
**Mechanical Engineering**

**Time: 3 hours** **Max Marks: 80**

**Answer any FIVE Questions**
**All Questions carry equal marks**

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1. (a) What are the differences between a capstan lathe and turret lathe? [6]
   (b) Explain with help of suitable sketches, different tool holders used in turret lathe. [10]
2. Explain with a neat sketch what do you understand by the words " helix angle" and "direction of cut" in the case of milling. What is their importance with respect to machining performance? Explain the basis on which these are selected. [16]
3. (a) Explain what is meant by Reaming? [6]
   (b) Show with neat sketches the constructional features of a hand reamer and label the important features [10]
4. (a) What are various operations performed on shaper? Explain in detail [8]
   (b) Describe constructional features of speed gearbox of slotter? [8]
5. (a) Explain how a grinding wheel is selected for thread grinding and tool sharpening. [8]
   (b) Explain clearly the various operating conditions for the grinding process. [8]
6. (a) What are steady and follower rests? Why are they used? [8]
   (b) Explain about apron mechanism used in lathe. [8]
7. (a) Explain terms speed, feed and depth of cut as applicable in metal cutting. [6]
   (b) What are various sources of heat generation in metal cutting? Explain. [10]
8. (a) What is meant by 3-2-1 principle of location. [8]
   (b) Explain the essential characteristics in the proper design of Jigs and Fixture. [8]

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