Code No: RR222002 **Set No. 1**

**II B.Tech II Semester Supplementary Examinations,**
**November/December 2005**
**MACHINE TOOL ENGINEERING**
**(Production Engineering)**

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

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

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1. (a) What are functions of a cutting fluid? [8]
   (b) Discus Taylors relationship for cutting speed tool life? [8]
2. (a) What are steady and follower rests? Why are they used? [8]
   (b) Explain about apron mechanism used in lathe. [8]
3. (a) Discuss the different operations that can be performed on turret and capstan lathe operations? [8]
   (b) Write briefly about tooling layout of automatic lathes? [8]
4. (a) What is planer? Illustrate and describe its working principle. [8]
   (b) Give detailed classification of planer machines. [8]
5. (a) Explain clearly what is meant by Tapping. [6]
   (b) Write any three differences between drilling, boring and tapping operations [6]
   (c) How a Tap is specified? [4]
6. (a) Briefly explain some of the problems caused in milling. Give their causes and remedies [8]
   (b) What are the motions of the arbor mounted milling cutter has with respect to the work piece? Discuss [8]
7. (a) Show the neat sketches for different methods of grinding [10]
   (b) State and explain the grinding parameters in surface grinding [6]
8. (a) What considerations should be kept in mind when selecting a clamp for a job? [8]
   (b) Why a drill Jig should have four legs, no more and no less? [8]

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Code No: RR222002 **Set No. 2**

**II B.Tech II Semester Supplementary Examinations,**
**November/December 2005**
**MACHINE TOOL ENGINEERING**
**(Production Engineering)**

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

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

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1. (a) Define various tool angles used in single point cutting tool with neat sketch [8]
   (b) Explain importance and functions of different tool angles and other parameters associated with a single point cutting tool. [8]
2. (a) What are the different types of taper turning attachments attached to lathed? Discuss them briefly. [8]
   (b) Classify the Lathe machines and explain their important advantages. [8]
3. How do you classify turret lathes? Give a brief description of different types. [16]
4. (a) Write briefly about ram mechanisms used in slotter? [8]
   (b) Describe constructional features of feed gearbox of planer? [8]
5. (a) Explain the different types of holes and the processes used for manufacturing them [8]
   (b) Show with sketches the principal features of any three hole making operations you are familiar with, along with the tools used [8]
6. (a) Explain the various considerations for selecting a milling cutter [8]
   (b) What are the salient differences between a plain and universal milling machine? What is the thread miller? [8]
7. (a) What are the various abrasive machining operations you are familiar with? Explain their applications & limitations [8]
   (b) What for lapping is used? How much stock is left for lapping? How does it differ from grinding? What are its advantages and disadvantages? [8]
8. (a) What do you understand by fool-proofing in connection with locating principles for jigs and fixtures? [8]
   (b) What are the advantages of locating a piece against an inclined surface compared to particular plane? [8]

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Code No: RR222002 **Set No. 3**

**II B.Tech II Semester Supplementary Examinations,**
**November/December 2005**
**MACHINE TOOL ENGINEERING**
**(Production Engineering)**

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

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

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1. (a) Why tool wear is important in metal cutting? [6]
   (b) Discuss various types of tool wear [10]
2. (a) Explain briefly about thread cutting methods? [8]
   (b) Why back gear is used in lathe? Describe in detail the method of using them? [8]
3. Describe single spindle automatic in detail with help of neat sketch. [16]
4. (a) Describe working and construction of crank quick return mechanism of a 8m shaper? [10]
   (b) How will you adjust the length of stroke and ram position in shaper? [6]
5. (a) Enumerate the uses and limitations of the following drilling machine [9]
      i. Sensitive drilling machine
      ii. Pillar drilling machine
      iii. Radial drilling machine
   (b) Explain what is meant by spot facing?. [7]
6. (a) What are the differences between bed type and planar type milling machine. [8]
   (b) List the various precautions in use of milling cutters [8]
7. Write a short note on the following [4x4=16]
   (a) Brazed carbide tools
   (b) Grade of grinding wheel
   (c) Geometry of a single point turning tool
   (d) Surface grinding machines
8. (a) Explain clearly a Honing tool with neat sketches . [12]
   (b) State the differences between Honing and Lapping. [4]

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Code No: RR222002 **Set No. 4**

**II B.Tech II Semester Supplementary Examinations,**
**November/December 2005**
**MACHINE TOOL ENGINEERING**
**(Production Engineering)**

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

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

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1. (a) What do you understand by tool life? [6]
   (b) In the orthogonal cutting turning of 50mm dia mild steel bar on a lathe the 1 following data was obtained :
   rake angle =15deg, cutting speed 100m/min, feed 0.2mm/rev, cutting force = 180kg, feed force = 60kg. Caluculate shear plane angle, coefficient of friction, cutting power, the chip flow velocity and shear force. Chip thickness is 0.3 mm8m [10]

2. (a) Explain briefly about thread cutting methods? [8]
   (b) Why back gear is used in lathe? Describe in detail the method of using them? [8]

3. Write briefly about following holders used in capstan and turret lathes. [4x4=16]
   (a) Multiple cutter holder
   (b) Slide tool holder
   (c) Knee tool holder
   (d) Drill tool holder

4. (a) What is planer? Illustrate and describe its working principle. [8]
   (b) Give detailed classification of planer machines. [8]

5. (a) Explain clearly what is meant by Tapping. [6]
   (b) Write any three differences between drilling, boring and tapping operations [6]
   (c) How a Tap is specified? [4]

6. (a) Explain the characteristics that distinguish a milling process from other machining processes. [8]
   (b) Describe the differences between a lathe and milling machine in terms of the types of surfaces generated , the types of tools used and applicability for general and production applications [8]

7. (a) Explain the role of using cutting fluids during grinding [8]

(b) Explain the various precautions to be taken before mounting a grinding wheel [8]

8. (a) What do you understand by location of a piece and what are the important principles of location and the type of locations commonly used? [8]

(b) What do you understand by principle of least points and principle of least positions [8]

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