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

II B.Tech. II Semester Regular Examinations, April/May -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?
   (b) Discus Taylors relationship for cutting speed tool life?
2. (a) Explain briefly about thread cutting methods?
   (b) Why back gear is used in lathe? Describe in detail the method of using them?
3. (a) What are primary and secondary motions of turret and capstan lathes? Explain
   (b) Describe with help of neat sketch, the working of collet chuck. And types of collet chucks?
4. (a) Write about feed mechanism used in planer.
   (b) Discuss briefly about reversible motor mechanism used for table in planer
5. (a) Explain with neat sketches the constructional features of a twist drill and label the important features
   (b) What is the function of a drill Jig?What provisions it must include?
6. Explain with the help of a line diagram the construction and working principle of a vertical milling machine. State the advantages and disadvantages along with application.
7. Write a short note on the following
   (a) Brazed carbide tools
   (b) Grade of grinding wheel
   (c) Geometry of a single point turning tool
   (d) Surface grinding machines
8. Compare the broaching operation with that of any other metal machining operation for the purpose of generating constant inside contours. Show sketches of some example jobs made using broaching.

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

II B.Tech. II Semester Regular Examinations, April/May -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 is tool signature?
   (b) Explain ASA and ORS system of tool nomenenclature.
   (c) Differentiate ORS and ASA system.
2. (a) Explain the working of split nut. Why it is used?
   (b) Distinguish between the steady and follower rests.
3. (a) Write briefly about cam design in automatic lathes.
   (b) Differentiate between semi automatic and automatic lathes.
4. (a) Draw a block diagram of standard double housing planer, showing its main parts and briefly describe these parts.
   (b) How is planer specified?
5. (a) Explain the different types of holes and the processes used for manufacturing them
   (b) Show with sketches the principal features of any three hole making operations you are familiar with, along with the tools used
6. (a) What is an indexing?-Explain
   (b) Distinguish Peripheral milling and Face milling. Derive an expression for power generated in Peripheral milling
7. (a) What are the advantages and limitations of using centreless grinding?
   (b) Describe the dressing and balancing requirements in grinding
8. (a) Explain clearly the various broaching parameters
   (b) Explain clearly how the length and machining time of a broach is calculated

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

II B.Tech. II Semester Regular Examinations, April/May -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) Explain different types of chips.
   (b) What are the adverse effects of built up edge? How can we avoid them?
2. (a) Explain briefly about thread cutting methods?
   (b) Why back gear is used in lathe? Describe in detail the method of using them?
3. (a) What is meant by tool layout? Expalin briefly
   (b) Describe in brief the types of head stocks used on semi automatic and automatic machines
4. (a) How do you classify the different types of shapers?
   (b) Explain with the help of a neat sketch, the working principle of a shaper.
5. (a) Explain clearly what is meant by Jig boring.
   (b) Explain clearly about the hole location procedure in drilling and boring operations
6. Show with sketches and explain the following milling cutter angles
   (a) Radial rake angle
   (b) Axial rake angle
   (c) Approach angle
   (d) Side clearance angle
7. Write a brief note on the following
   (a) Super finishing
   (b) Cylindrical super finishing
   (c) Flat and Spherical super finishing
   (d) Polishing
8. (a) Explain clearly a Honing tool with neat sketches
   (b) State the differences between Honing and Lapping.

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

II B.Tech. II Semester Regular Examinations, April/May -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
   (b) Explain importance and functions of different tool angles and other parameters associated with a single point cutting tool.
2. (a) Explain, with the help of neat sketch, the working principle of Lathe machine
   (b) How is size of lathe specified?
3. (a) What are meant by tool layout of a turret lathe? Discuss
   (b) Enumerate various rules, which must be followed while laying out sequence of operations for a turret lathe.
4. (a) What is planer? Illustrate and describe its working principle.
   (b) Give detailed classification of planer machines.
5. (a) Enumerate the uses and limitations of the following drilling machine
      i. Sensitive drilling machine
      ii. Pillar drilling machine
      iii. Radial drilling machine
   (b) Explain what is meant by spot facing?.
6. (a) Explain the characteristics that distinguish a milling process from other machining processes.
   (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
7. (a) Grinding wheel characteristics or the performance of a grinding wheel depends on type of abrasive grain size, structure and bonding material. Discuss the effect of each
   (b) Describe a grinding wheel structure with the help of a neat sketch and state different abrasive materials used in it.
8. (a) How a broaching machine is specified?
   (b) Why robust fixtures are required to support jobs to be broached?
   (c) How much stock is removed by tooth on a broach?
   (d) How the length of a broach is determined?

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