

Code No: R05322401

R05**Set No. 2**

III B.Tech II Semester Examinations, December 2010
MACHINE TOOLS AND METROLOGY
Automobile Engineering

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

Answer any FIVE Questions
All Questions carry equal marks

1. Describe principal features of the International standard system of limits and fits for plain work. [16]
2. (a) Suggest and explain a method for testing the straightness?
 (b) Differentiate between primary texture and secondary texture? [8+8]
3. (a) Explain with neat sketch quick return mechanisms in shaper.
 (b) How to classify shaper? and explain salient features of each one? [8+8]
4. (a) Explain with neat sketch how to obtain gear cutting operation in milling.
 (b) Explain briefly with neat sketch how to produce square block from milling machine. [8+8]
5. (a) Explain how effective diameter of an external thread can be measured using one wire method?
 (b) Why damping is essential in mechanical comparators? How it is achieved in sigma comparator? [8+8]
6. (a) What is chip reduction coefficient?
 (b) Discuss the effects of cutting variable on the chip reduction coefficient
 (c) During turning a MS component with a $0^\circ, 10^\circ, 7^\circ, 7^\circ, 8^\circ, 9^\circ$ -1.5mm shaped orthogonal cutting, a depth of cut 2mm is used. If feed is 0.18mm/rev and chip thickness of 0.36mm is obtained. Calculate chip thickness ratio and shear angle. [4+6+6]
7. (a) Discuss the advantages, limitations and applications of broaching machine.
 (b) What are the functions of broaching fixture? [8+8]
8. (a) What are screw gauges ? How are they used to control the complex dimensions of threads?
 (b) Explain the constructional features of a depth micrometer. [8+8]

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R05**Set No. 4**

III B.Tech II Semester Examinations, December 2010
MACHINE TOOLS AND METROLOGY
Automobile Engineering

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

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Suggest and explain a method for testing the straightness?
 (b) Differentiate between primary texture and secondary texture? [8+8]
2. (a) Explain with neat sketch quick return mechanisms in shaper.
 (b) How to classify shaper? and explain salient features of each one? [8+8]
3. (a) What is chip reduction coefficient?
 (b) Discuss the effects of cutting variable on the chip reduction coefficient
 (c) During turning a MS component with a $0^\circ, 10^\circ, 7^\circ, 7^\circ, 8^\circ, 9^\circ$ -1.5mm shaped orthogonal cutting, a depth of cut 2mm is used. If feed is 0.18mm/rev and chip thickness of 0.36mm is obtained. Calculate chip thickness ratio and shear angle. [4+6+6]
4. (a) Explain with neat sketch how to obtain gear cutting operation in milling.
 (b) Explain briefly with neat sketch how to produce square block from milling machine. [8+8]
5. Describe principal features of the International standard system of limits and fits for plain work. [16]
6. (a) Discuss the advantages, limitations and applications of broaching machine.
 (b) What are the functions of broaching fixture? [8+8]
7. (a) What are screw gauges ? How are they used to control the complex dimensions of threads?
 (b) Explain the constructional features of a depth micrometer. [8+8]
8. (a) Explain how effective diameter of an external thread can be measured using one wire method?
 (b) Why damping is essential in mechanical comparators? How it is achieved in sigma comparator? [8+8]

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R05**Set No. 1**

III B.Tech II Semester Examinations, December 2010
MACHINE TOOLS AND METROLOGY
Automobile Engineering

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

Answer any FIVE Questions
All Questions carry equal marks

1. (a) What are screw gauges ? How are they used to control the complex dimensions of threads?
(b) Explain the constructional features of a depth micrometer. [8+8]
2. (a) What is chip reduction coefficient?
(b) Discuss the effects of cutting variable on the chip reduction coefficient
(c) During turning a MS component with a $0^{\circ}, 10^{\circ}, 7^{\circ}, 7^{\circ}, 8^{\circ}, 9^{\circ}$ shaped orthogonal cutting, a depth of cut 2mm is used. If feed is 0.18mm/rev and chip thickness of 0.36mm is obtained. Calculate chip thickness ratio and shear angle. [4+6+6]
3. (a) Explain how effective diameter of an external thread can be measured using one wire method?
(b) Why damping is essential in mechanical comparators? How it is achieved in sigma comparator? [8+8]
4. (a) Explain with neat sketch how to obtain gear cutting operation in milling.
(b) Explain briefly with neat sketch how to produce square block from milling machine. [8+8]
5. (a) Explain with neat sketch quick return mechanisms in shaper.
(b) How to classify shaper? and explain salient features of each one? [8+8]
6. (a) Suggest and explain a method for testing the straightness?
(b) Differentiate between primary texture and secondary texture? [8+8]
7. (a) Discuss the advantages, limitations and applications of broaching machine.
(b) What are the functions of broaching fixture? [8+8]
8. Describe principal features of the International standard system of limits and fits for plain work. [16]

Code No: R05322401

R05**Set No. 3**

III B.Tech II Semester Examinations, December 2010
MACHINE TOOLS AND METROLOGY
Automobile Engineering

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

Answer any FIVE Questions
All Questions carry equal marks

1. (a) What are screw gauges ? How are they used to control the complex dimensions of threads?
 (b) Explain the constructional features of a depth micrometer. [8+8]
2. (a) Explain with neat sketch how to obtain gear cutting operation in milling.
 (b) Explain briefly with neat sketch how to produce square block from milling machine. [8+8]
3. (a) Discuss the advantages, limitations and applications of broaching machine.
 (b) What are the functions of broaching fixture? [8+8]
4. (a) Explain with neat sketch quick return mechanisms in shaper.
 (b) How to classify shaper? and explain salient features of each one? [8+8]
5. Describe principal features of the International standard system of limits and fits for plain work. [16]
6. (a) Explain how effective diameter of an external thread can be measured using one wire method?
 (b) Why damping is essential in mechanical comparators? How it is achieved in sigma comparator? [8+8]
7. (a) Suggest and explain a method for testing the straightness?
 (b) Differentiate between primary texture and secondary texture? [8+8]
8. (a) What is chip reduction coefficient?
 (b) Discuss the effects of cutting variable on the chip reduction coefficient
 (c) During turning a MS component with a $0^\circ, 10^\circ, 7^\circ, 8^\circ, 9^\circ$ -1.5mm shaped orthogonal cutting, a depth of cut 2mm is used. If feed is 0.18mm/rev and chip thickness of 0.36mm is obtained. Calculate chip thickness ratio and shear angle. [4+6+6]
