SEAT No. :

P96

Oct-BE/Insem.-20
B.E. (Mechanical Engineering) (Semester - I)
MACHINE TOOL DESIGN
(2012 Pattern)

Time : 1 Hour]   *[Max. Marks : 30*

Instructions to the candidates:
1) *All questions are compulsory i.e. solve Q.1 or Q2, Q.3 or Q.4, Q.5 or Q.6.*
2) *Figures to the right indicate full marks.*
3) *Assume suitable data, if necessary.*
4) *Use of electronic pocket calculator is allowed.*

Q1) a) Explain geometric progression with suitable example. **[4]**

     b) Explain the design procedure of speed gear box for spindle drive. **[6]**

OR

Q2) a) How intermittent motion obtained in machine tool explain with figure.**[6]**

     b) Explain the importance of ray-diagram in gear box design. **[4]**

Q3) a) Explain static and dynamic stiffness in machine tool structures. **[6]**

     b) Explain basic requirements of machine tool structures. **[4]**

OR

Q4) a) Compare various sections of bed and discuss how rigidity of bed sections can be increased. **[6]**

     b) Explain with figure the application of column sections used in mahcine tools. **[4]**

Q5) a) Design the aerostatic slide ways for machine tool. **[6]**

     b) State requirement of guideways (any eight) **[4]**

OR

Q6) Explain with figure design of hydrodynamic slideways. **[10]**

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