2122
B.E. (Mechanical Engineering)
Third Semester
MEC-304: Machine Drawing

Time allowed: 3 Hours

Max. Marks: 50

NOTE: *Attempt* **five** *questions in all, including Question No. 1 (Part-A) which is compulsory and selecting two questions each from Part B-C. Assume suitably the missing data, if any. All dimensions are in mm, if not mentioned otherwise. Supplement your answer with neat and labeled sketches wherever required. All software related questions must be answered with respect to AutoCAD software. All questions carry equal marks.*

x-x-x

Part-A

1 (i) How do you create Plus and Minus Tolerances with AutoCAD?
   (ii) Differentiate between Hole Basis Tolerances versus Shaft Basis Tolerance by giving an example.
   (iii) Explain the meaning of the following:

   | ⊥ | A | .002 |
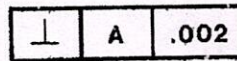
   (iv) Draw a 3 x 1.5 x 6 inch-long external acme thread.
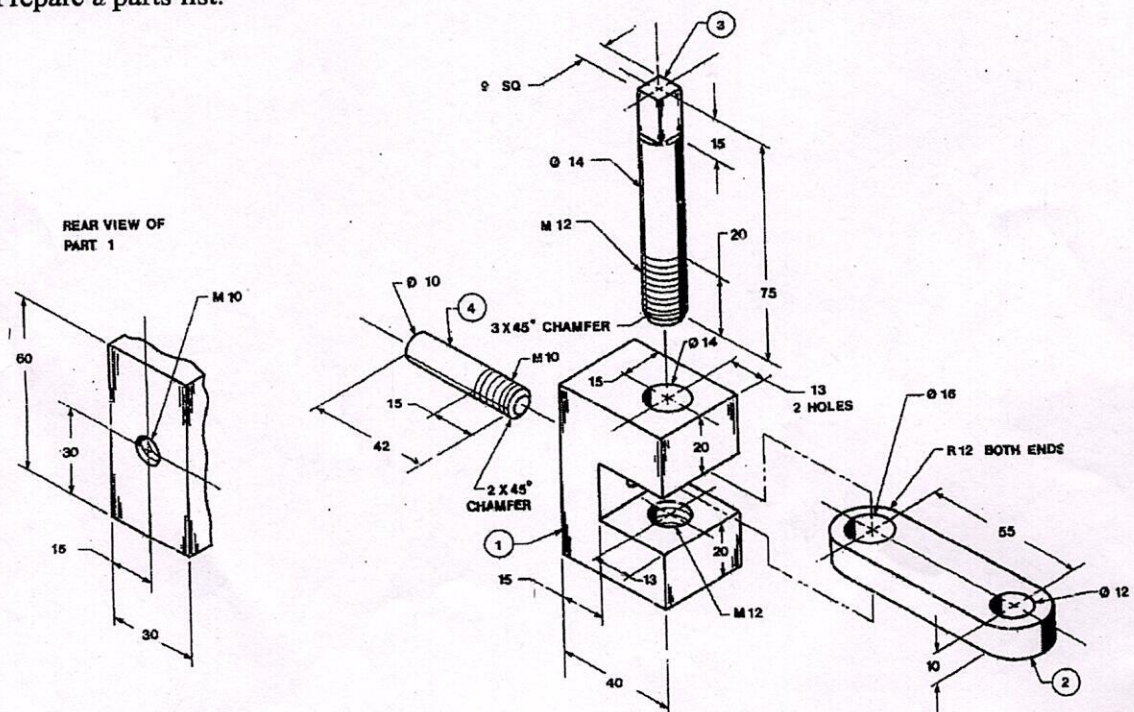   (v) What is meant by a blueprint?

Part-B

2 Explain the meaning of the geometrical tolerances indicated in microns, for the machine tool components shown in next figure.
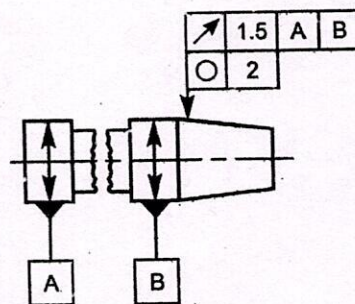
Grinding machine spindle

3 Draw an assembly drawing of the given objects. Draw detail drawings for all nonstandard parts. Prepare a parts list.

4   Differentiate between first angle versus third-angle projection by drawing an example.

Part-C

5   Sketch (*a*) sectional view from the front and (*b*) view from the side of a spur gear with a web.

6   Write the step-by-step commands / procedures to be followed for creating a 3D model of a Cam and Follower System in AutoCAD.

7   Sketch the necessary views of a foot-step bearing, for supporting a shaft of diameter 50 mm. Give all important proportionate dimensions.

x-x-x