MEL 235 – METROLOGY and QUALITY ASSURANCE
(II Semester 2006-07)
<u>Major</u>

Max.Marks:40
Time :2 Hrs.

Instructions:

1. The question paper contains two parts. Answer them separately in two different answer sheets.
2. Write your name, entry no. and group no. on the front page of both the answer sheets.
3. Be brief and specific in your answers. Draw suitable sketches wherever required.

Section A: Metrology

1. (a) Why great importance is attributed to a high degree of smoothness of the gauging surfaces of the gauge blocks? (2)
   (b) Explain   (1) Waviness
                    (2) Lay
                    (3) Cut off length (3)
2. (a) What are all the different elements of spur gear which require inspection? (2)
   (b) Describe gear tooth vernier caliper used for inspection of gears. Calculate the settings for a straight spur gear having 50 teeth of module 3 mm. (3)
3. (a) Give the set of thread gauges required for measuring internal threads (2)
   (b) What is the effective diameter or pitch diameter of a screw thread? Derive an expression for calculating the effective diameter of external threads using two wire method. (3)
4. (a) Distinguish between the positional and feature inspection. (2)
   (b) Describe the tests conducted to obtain the parallelism and squareness between all combinations of axes and surfaces. (3)

Section B: Quality Assurance

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