B.Tech. Degree III Semester Examination, November 2009

SE 306 MACHINE DRAWING

(Common for 1999& 2002 Schemes)

Time: 3 Hours Maximum Marks: 100

(Answer ***ALL*** questions)
(Assume missing dimensions, if any, suitably)

I. (a) Show by simple sketches
(i) Straightness (ii) Coaxiality (iii) Symmetry
(iv) Run-out (v) Flatness (8)

(b) A medium force fit H_7 P_6 is specified for an assembly of a pulley on a shaft of 50mm nominal diameter. Determine
(i) The dimensions of hole
(ii) The dimensions of shaft
(iii) Maximum and minimum interference
Use the following data

SHAFT				HOLE			
Nominal size		Limits of tolerance for P_6 shaft (mm)		Nominal size		Limits of tolerance for H_7 hole (mm)	
OVER	UPTO	es	ei	OVER	UPTO	Es	Ei
40	50	+42	+26	30	50	25	0
50	65	+51	+32	50	80	30	0

(12)

OR

II. (a) Determine allowances and tolerances for the following dimensions of mating parts according to the hole basis system. State type of fil.

	Shaft	Hole
(i)	ϕ 27.470 mm	ϕ 27.500 mm
	ϕ 27.445 mm	ϕ 27.523 mm
(ii)	ϕ 29.90 mm	ϕ 30.000 mm
	ϕ 29.85 mm	ϕ 30.025 mm

(10)

(b) A 50mm diameter shaft rotation in a bush bearing the tolerance for both shaft and the bearing is 0.050mm and allowance is 0.10mm. Find the dimensions of the shaft and the bearing on the hole basis system. (10)

III. (a) Draw a neat sketch of standard location of elements of welding symbol according to BIS. (5)
(b) Draw the cross sectional representation and the approximate symbol of the following forms of welds.
(i) Fillet
(ii) Single V butt
(iii) Double V
(iv) Square butt
(v) Double U butt (5 x 4 = 20)

OR

(Turn Over)

IV. Draw two views of a "flanged prope joint" for a prope of 100mm diameter and having four both securing the flanges together. Give all important proportional dimensions. (25)

V. (a) Draw the following thread sections, to a scale full size and give all the standard proportions:

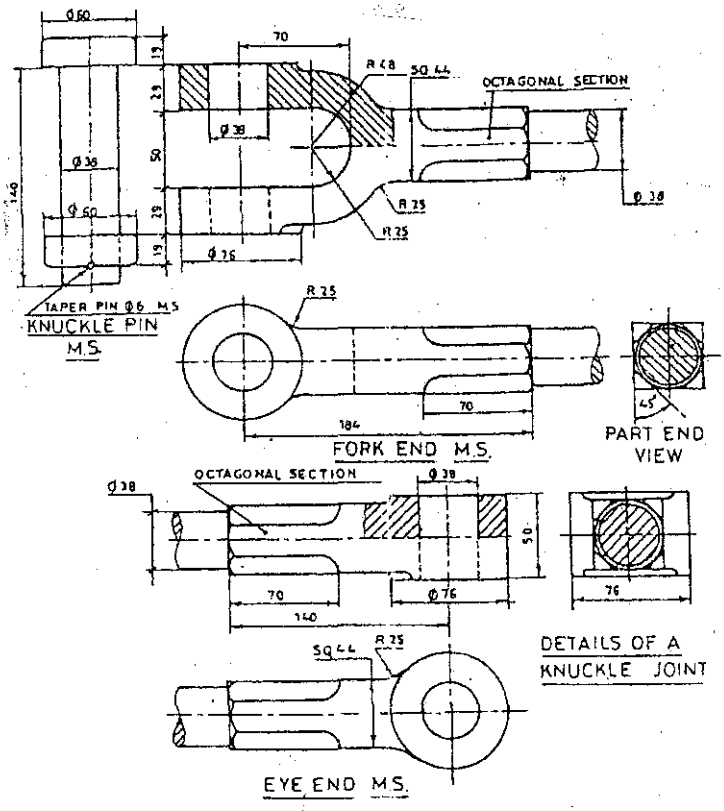
(i) BSW
(ii) Metric thread
(iii) Buttress thread
(iv) Knuckle thread (4 x 5 = 20)

(b) Draw, full size, two views in orthographic projection of a 25mm diameter hexagonal bolt, 100mm long, fitted with a hexagonal nut and lock nut. (20)

(c) Sketch the "LEWIS BOLT". Indicate all the important dimensions. (15)

OR

VI. Figure below shows the detail drawing of a knuckle joint; draw the following views of its assembly.



(i) Front view – lower half in section
(ii) Right side view
(iii) Top view.

Dimension the views completely. (55)

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