

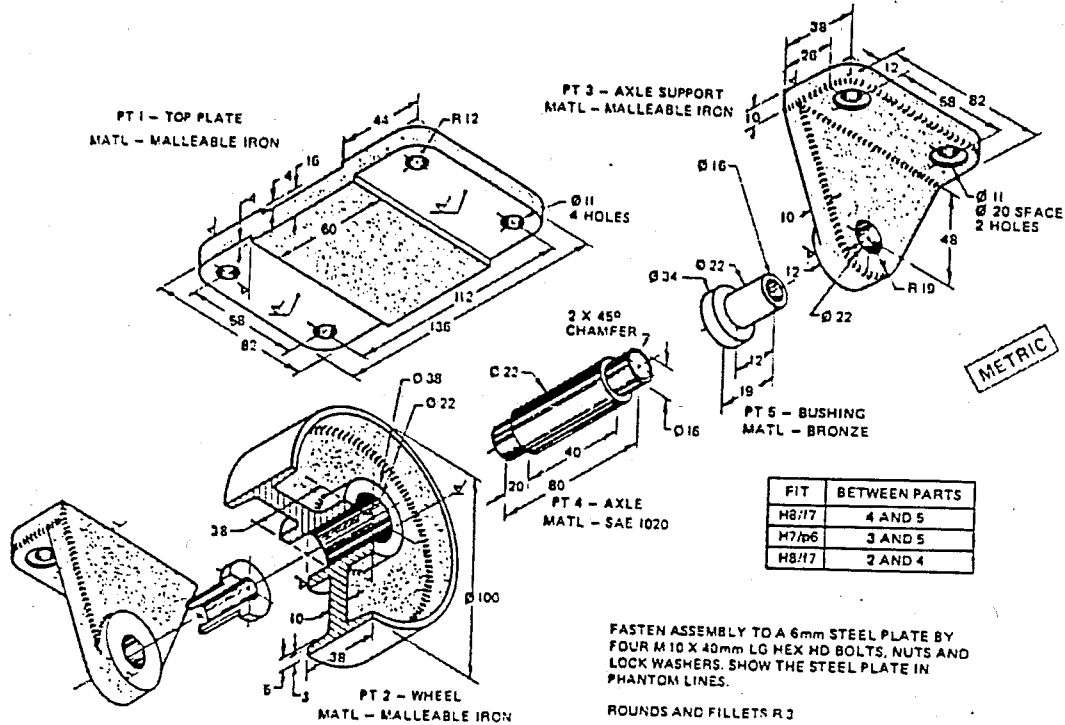
Course	Number	Section	
Machine Drawing and Design	MECH 313	T,X	
Examination	Date	Time	No. of pages
Midterm	February 26, 2001	15:45-17:35	5
Instructor(s)	Dr.C. Rajalingham Dr.V.N.Latinovic		
Materials allowed:	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes	Open book exam Drafting instruments
Calculators allowed:	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes	Any calculator
Special instructions	Attempt all problems (3). All problems have equal value.		

STUDENT NAME: \_\_\_\_\_

STUDENT I.D.: \_\_\_\_\_

1. In sheet DWG NO.1 determine from the Tolerance tables in the Appendix upper and lower limits of the internal and external features (holes and shafts) and the limits of the clearance and interference for the four assemblies shown on the same page. Write the values into the table provided on the page.

2. Make a detail working drawing of part 2 – WHEEL shown below in the exploded isometric view as a component of the caster. Give all dimensions including the limit dimensions of the hole  $\Phi 22$  according to the required fit shown in the table. Indicate surface texture symbol on surfaces that should be machined by turning, boring and facing. Use prepared standard sheet with centerlines shown - DWG NO. 2 and draw to the full size.



CASTER

3. In sheet DR.NO.3 a one-view section assembly drawing of a Flanged connection is drawn incomplete. It has to be completed by drawing M12x1.75x45 LG hexagon head bolts with lockwashers on centerlines indicated and 60 mm long square keys connecting the shafts and the flange hubs. All parts should be labeled by part number and the Bill of material completed.

**CONCORDIA UNIVERSITY  
FACULTY OF ENGINEERING AND  
COMPUTER SCIENCE  
DEPARTMENT OF MECHANICAL AND  
INDUSTRIAL ENGINEERING**

**MECH 313/4 - Machine Drawing and Design**

Date: March 5, 2003

Section: X

Instructors: Dr. J. Dargahi

Be as explicit as possible.

Materials allowed: Textbook, drawing equipment, Calculator

Time: 70 minutes

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Family Name: [REDACTED]

First Name: [REDACTED]

ID: [REDACTED]

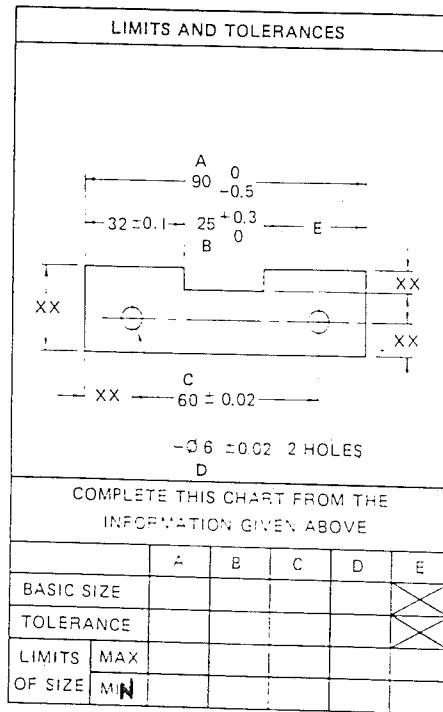
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Question # 1.....

Question # 2.....

Question # 1

Calculate the sizes and tolerances for the drawings shown in Figure 1.



S-7-6

Figure 1: 8-5-B

Question # 2

Make a working drawing of the column bracket shown in Figure 2. Scale 1:1. The following information is to be added to the drawing:

- The bottom of the base is to have a maximum roughness value of 125  $\mu$ in. and a machining allowance of .06 in.
- The tops of the bosses are to have a maximum roughness value of 250 min. and a machining allowance of .04 in.
- The end surfaces of the hubs supporting the shafts are to have maximum and minimum roughness values of 63 and 32  $\mu$ in. and a machining allowance of .04 in.
- The large hole is to be dimensioned for an RC4 fit. The small hole is to be dimensioned for an LN3 fit for plain bearings.

**Note:** Clearly dimension the views. Precise measurement is not required.