

FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA
SCHOOL OF SCIENCE AND SCIENCE EDUCATION
DEPARTMENT OF INDUSTRIAL AND TECHNOLOGY EDUCATION
FIRST SEMESTER 2019/2020 SESSION EXAMINATION

Course: ITE 572 – Mechanical Engineering Drawing – 2units.

Time Allowed: 2 hours.

Instruction: Answer any two questions ^{from} each of Sections A and B. Answer ~~all~~ questions *must be answered* on drawing sheet(s) provided.

Section A

1. Show with the aid of sketches the conventional schematic representations of the following elements in engineering drawing:
 - a. timber;
 - b. tension spring;
 - c. concrete;
 - d. packing/insulation; and
 - e. liquid.

2. Define the following terms with respect to fits and tolerances:
 - a. lower limit;
 - b. upper limit;
 - c. interference fit;
 - d. transition fit; and
 - e. clearance fit;

3. It is often desirable to show sectional views of drawings. Justify this need with four reasons.

Section B

4. Figure 1 shows the front elevation and plan of a conical piece joined to a cylindrical piece off-centre. Draw full scale (i) the given elevations; (ii) determine the joint line; and develop the pattern for the conical piece.

5. Figure 2 shows a cone with an on-centre cylindrical branch. Plot the joint line on the two elevations and develop the pattern for the cone. Use full scale.

6. An off-centre cylindrical branch-off from a main duct is shown in Figure 3. Reproduce the given elevations, determine the joint line of front elevation and develop patterns for the two pipes. Use full scale.

/ejo/

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[Signature]
5/2/2020

Figure 1

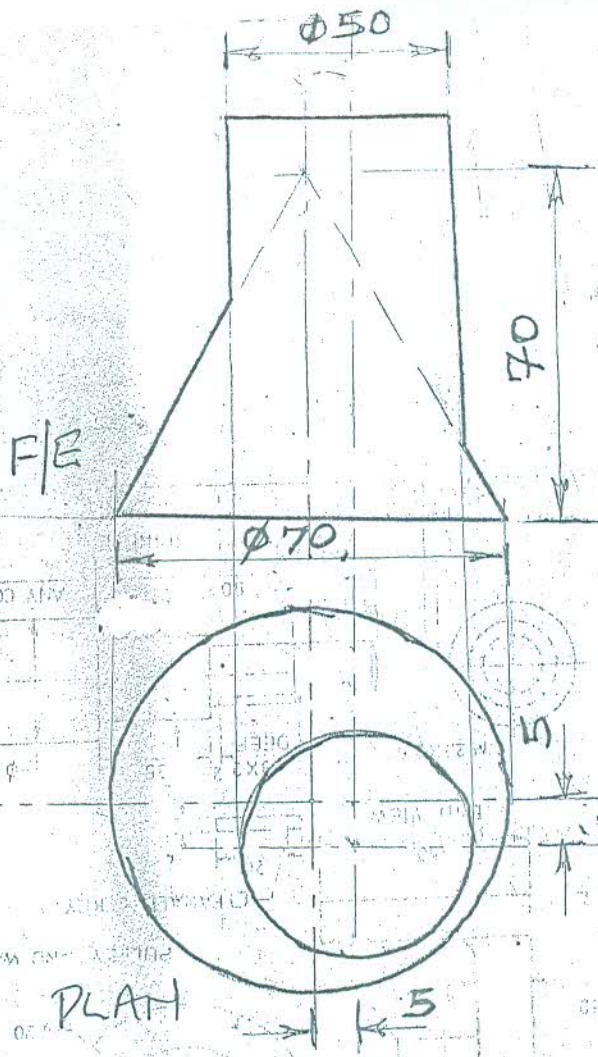


Figure 2

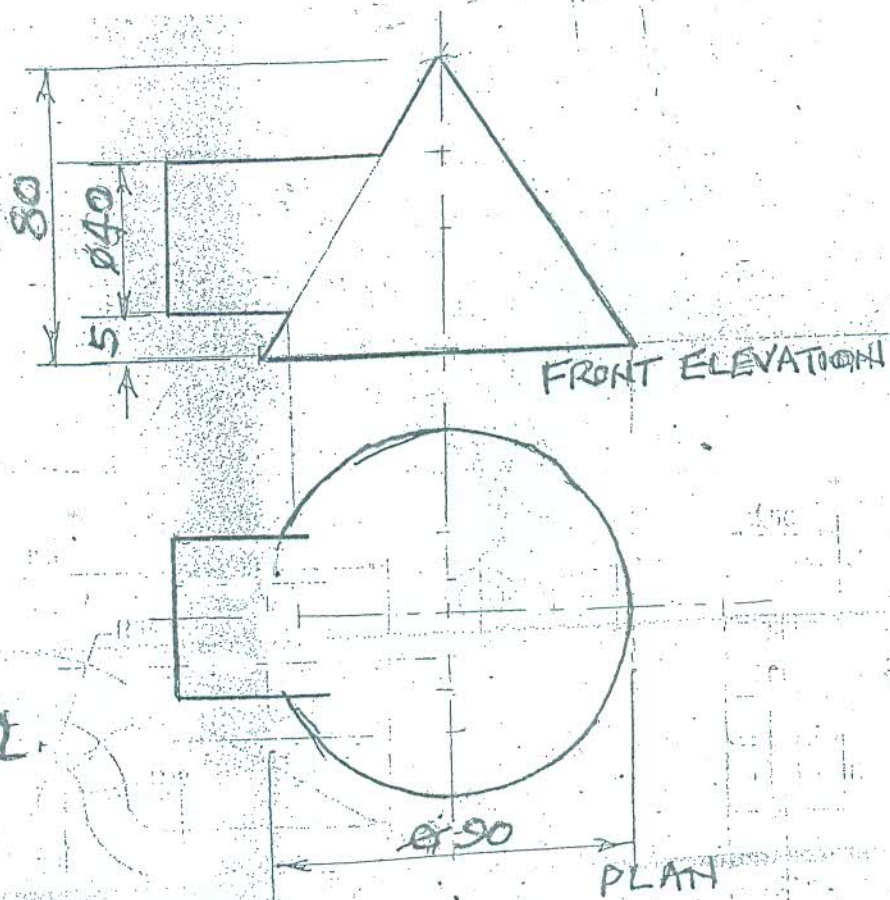


Figure 3.

