Q. 5.

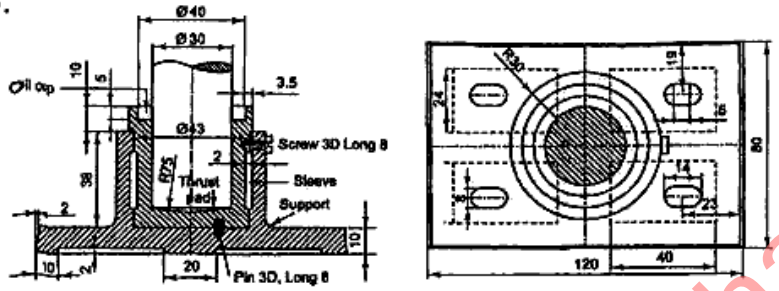

Fig. (C) *A Foot Step Bearing Support*

Q. 5.

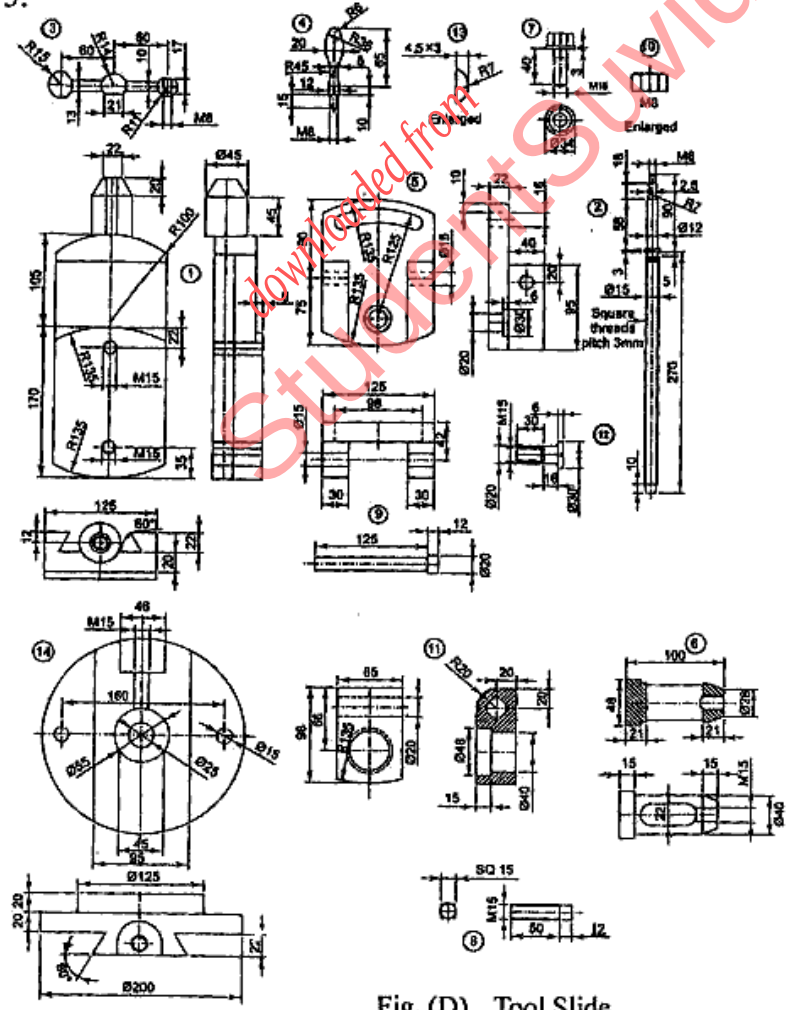

Fig. (D) Tool Slide

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Roll No .....

AU/IP/IEM/ME/PR-305

B.E. III Semester

Machine Drawing And Design

Time : Four Hours

Maximum Marks : 70

Note: i) Answer five questions. In each question except Q. No. 5 part A, B, C is compulsory and D part has internal choice.

ii) All parts of each question are to be attempted at one place.

iii) All questions carry equal marks, out of which part A and B (Max. 50 words) carry 2 marks, part C (Max. 100 words) carry 3 marks, part D (Max. 400 words) carry 7 marks.

iv) Except numericals, Derivation, Design and Drawing etc.

1. a) What are the various types of representations that can be made using drawings?
   b) What is the importance of the Drawing standards?
   c) Differentiate between an assembly, sub assembly and part drawing.
   d) How a square thread is drawn in schematic form?

   OR

   What is the purpose of Shaft? Draw and discuss various types of shafts?

2. a) What are the various types of assembly drawing?
   b) Write a note on bill of materials.
   c) How does a design assembly drawing differ from a detailed assembly drawing?
   d) Draw a sectional front view and side view of the connecting rod shown in fig. (A). Specify the geometric tolerances.

   OR

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Draw assembly drawing from the part drawing of a gear pump shown in fig. (B).

3. a) Describe the advantages of Computer Aided Drafting.
   b) What is the meaning of UCS and WCS?
   c) Differentiate between Pan, Move and Zoom. How do you pan a drawing?
   d) Describe the use of fillet command. How do you change the fillet radius? What is the effect of using this command with zero radius?

OR

Explain how the factor of safety is determined under steady and varying loading by different methods.

4. a) What is a Cotter joint?
   b) What is a Knuckle joint?
   c) Differentiate between a cotter and a pin joint.
   d) A double riveted lap joint with zig-zag riveting is to be designed for 13 mm thick plates. Assume
   $\delta_t = 80$ MPa; $\tau = 60$ MPa; and $\delta_c = 120$ MPa
   State how the joint will fail and find the efficiency of the joint?

OR

A plate 100 mm wide and 10 mm thick is to be welded with another plate by means of transverse welds at th ends. If the plates are subjected to a load of 70 kN. Find the size of weld for static as well as fatigue load. The permissible tensile stress should not exceed 70 MPa.

5. Draw half-sectional front view, half-sectional side view and top view of the foot step bearing shown in fig. (C).

OR

Fig (D) shows a tool slide with details of its parts. Draw front view, side view and top view of its assembly drawing.

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Q. 2. d)

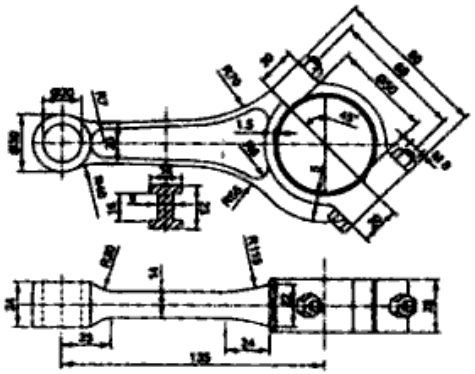

Fig. (A) *A Connecting Rod*

Q.2. e)

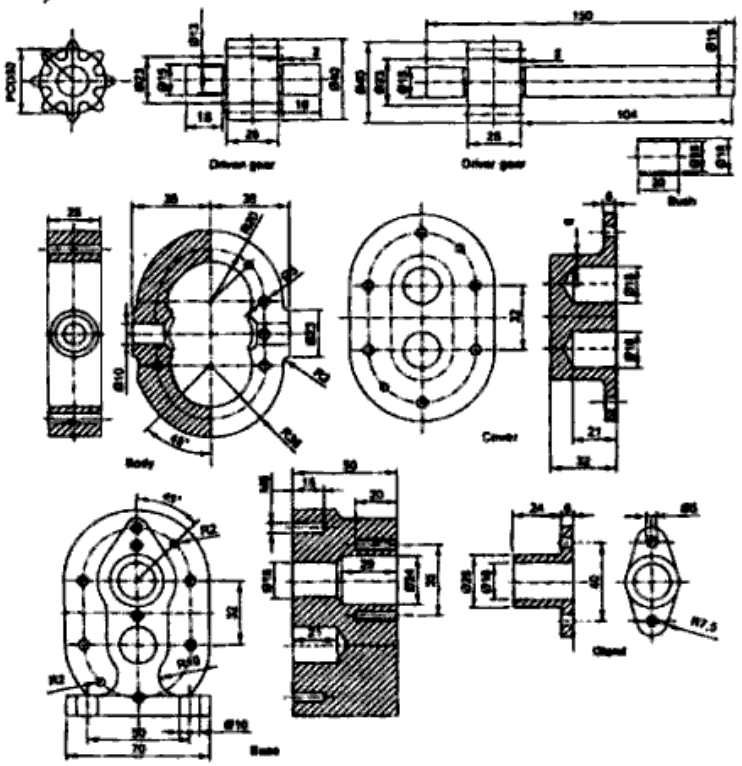

Fig. (B) *Part Drawing of a Gear Pump*

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