

QUESTION ONE (1)

- 5 (a) Briefly describe three types of fits commonly used in engineering.
- 5 (b) In a chronological order mention four important types of drawings and briefly describe its importance during machine design from concept to product stage.
- (c) Figure Q1(c) below is isometric projection of a machine element drawn to scale 1:1 draw full dimensioned top and front views while using standard representation and orthographic first angle projection

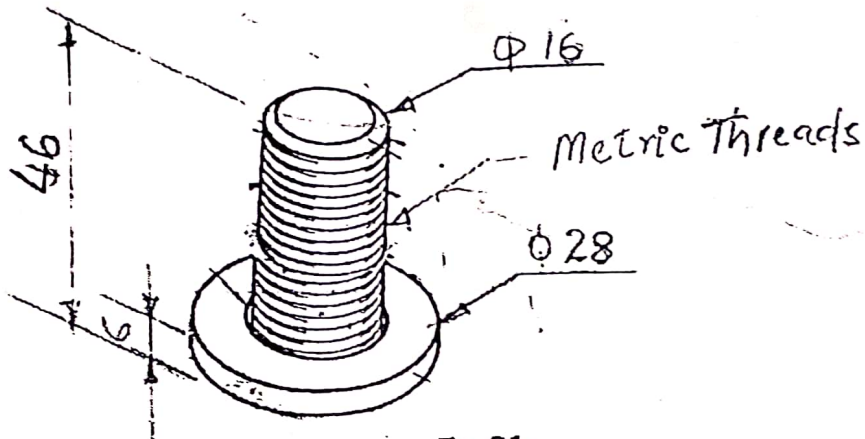


Fig Q1c

- 4 (d) With the aid of tables provided draw full dimensioned cross section area for a standard key ways for (i) shaft (ii) bore, with basic dimension 56mm.
- (e) While stating circumstance mention any five items which are supposed to be hatched
- (f) Figure below is of gear assembly, If the design is to be improved by adding circlip to prevent the gear from coming off with the aid of tables provided draw a full dimensioned the improved shaft.

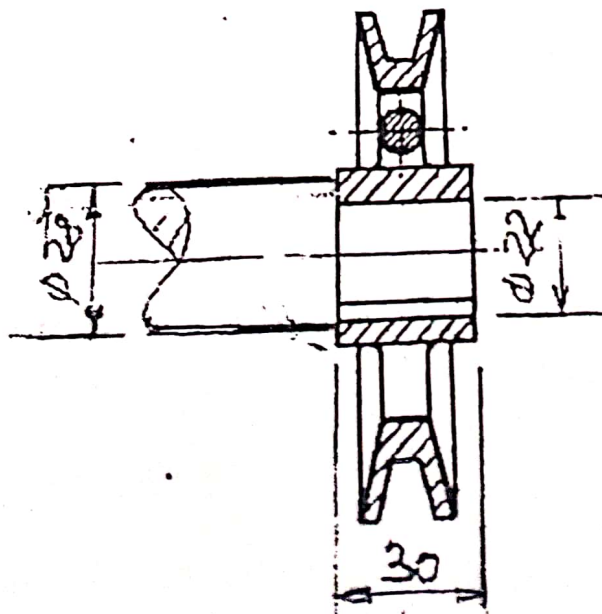


Fig Q1f

Fig Q2

QUESTION FOUR (4)

Figure Q4 below is of idler pulley spur gear assembly comprising flat belt pulley, and other items with drawn to scale 11 the aid of tables provided shaft has to be improved by including circlip so as to prevent the gear from coming off:

prepare detail drawing for the shaft while including that improvement (missing dimensions can be obtained by taking measurements)

On the drawing

