

17940

16117

4 Hours / 100 Marks

Seat No.

--	--	--	--	--	--	--	--

Instructions : (1) All Questions are *compulsory*.

(2) Illustrate your answers with neat sketches wherever necessary.

(3) Figures to the right indicate full marks.

(4) Assume suitable data, if necessary.

(5) Use of Non-programmable Electronic Pocket Calculator is permissible.

(6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. (A) Draw conventional representation for any SIX of the following :

12

- (a) Pulley in section
- (b) Check valve
- (c) Splined Shaft
- (d) Compression spring with circular section
- (e) Spur Gear.
- (f) Saddle key
- (g) Taper
- (h) External Screw Thread

(B) Attempt any TWO of the followings :

8

- (a) State the meaning of symbol shown in Fig. 1.

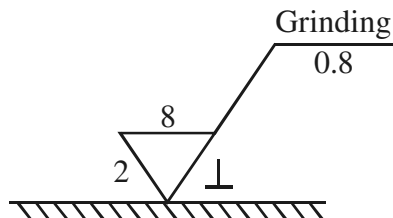


Fig. 1

[1 of 8]

P.T.O.

- (b) The Hole has a size of $50^{+0.05}_{+0.00}$ and the shaft has a size of $50^{-0.02}_{-0.04}$. Find the allowances to determine the type of fit between them.
- (c) Draw sketch to join two shafts of equal diameter along face to face prepare drawing along welding symbol. By means of square Butt weld.

2. (A) Fig. 2 shows the complete front view top view and partial Auxiliary view of bracket. Draw the given views and complete the front view. 12

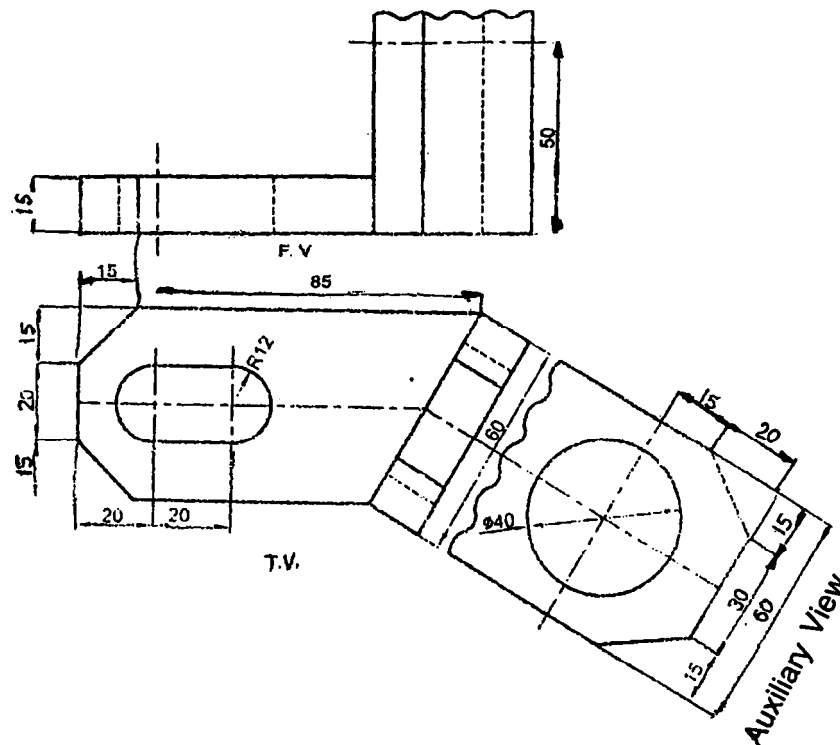


Fig. 2

- (B) Attempt any TWO of the following 8

- (a) Draw the Fig. 3 and state the meaning of each term.

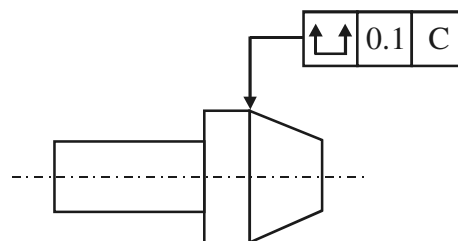


Fig. 3

- (b) Determine the tolerance for the basic size in the nominal steps of 50 mm to 80 mm for :
 - (i) Tolerance Grade 8
 - (ii) Tolerance Grade 12.
- (c) Draw symbol for following features :
 - (i) Flatness
 - (ii) Cylindricity
 - (iii) Position
 - (iv) Parallelism

3. Attempt any TWO of the followings :

20

- (a) A cylinder having a base side of 80 mm diameter and axis height of 100 mm is tested on H.P. with it's Base. It is penetrated by another cylinder of base 60 mm and height 90 mm such that axis of penetrating cylinder is parallel to both reference plane and 5 mm offset toward's observer and 50 mm above the base. Draw Interpenetration showing lines of intersection.
- (b) A Cone of Base diameter 70 mm and axis 65 mm is kept on H.P. on its base. It is penetrated by horizontal cylinder of 35 mm diameter with its axis parallel to V.P. and intersecting the axis of cone at dist of 20 mm. above the base of cone. Draw projection of solids showing curves of intersection.
- (c) A vertical square prism base 50 mm side and axis height 100 mm has a rear rectangular face inclined at 30° to V.P. It is completely penetrated by a horizontal square prism of 40 mm edge of base and 100 mm long. faces of which are equally inclined to H.P., Axis of two prisms are parallel to V.P. and Bisects each other at right angles. Draw projection of solid showing lines of intersection.

P.T.O.

4. Attempt any ONE :

20

- (a) Fig. 4 shows details of Oldham Coupling. Draw the following views of assembly sectional front view.

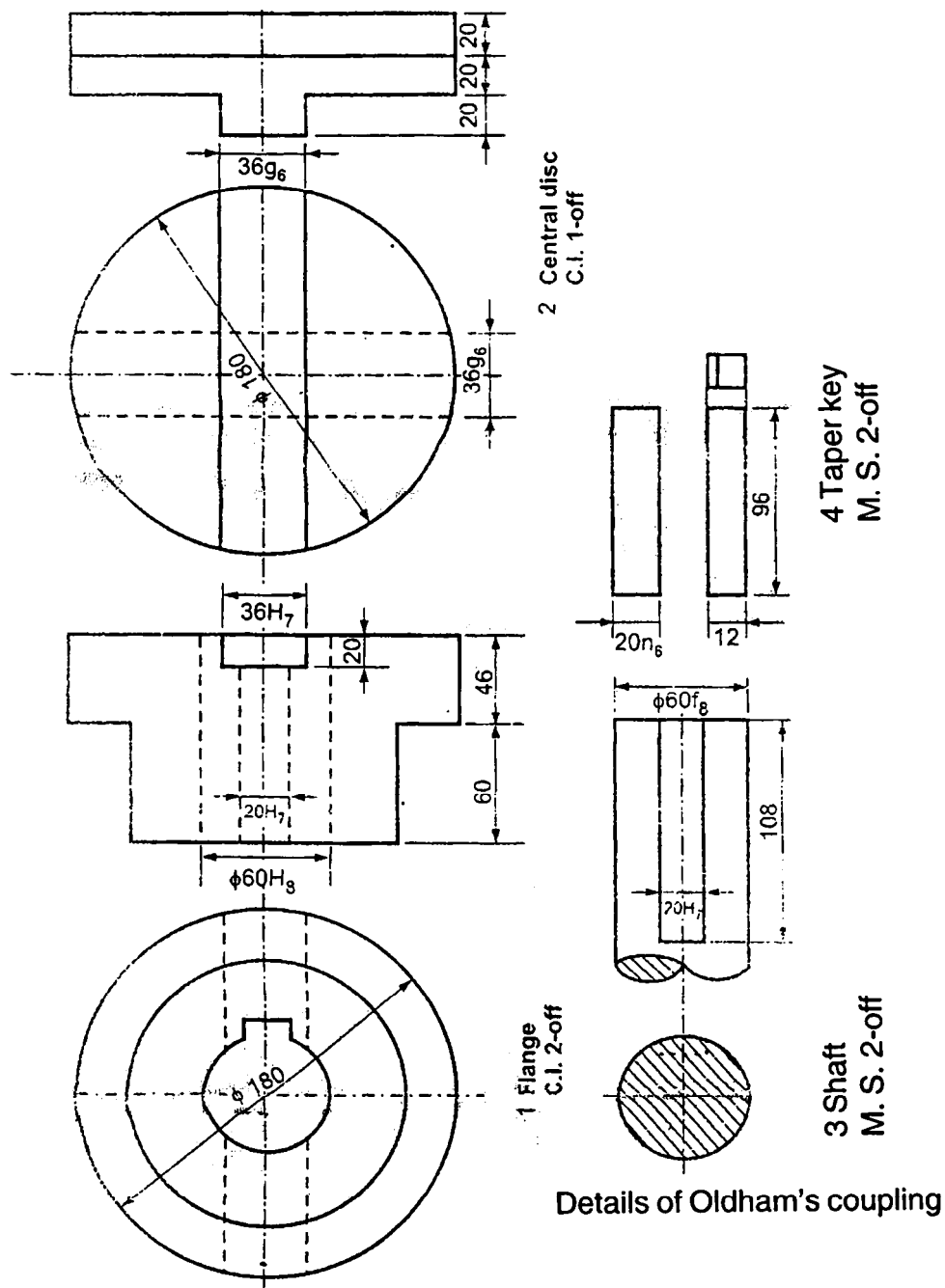
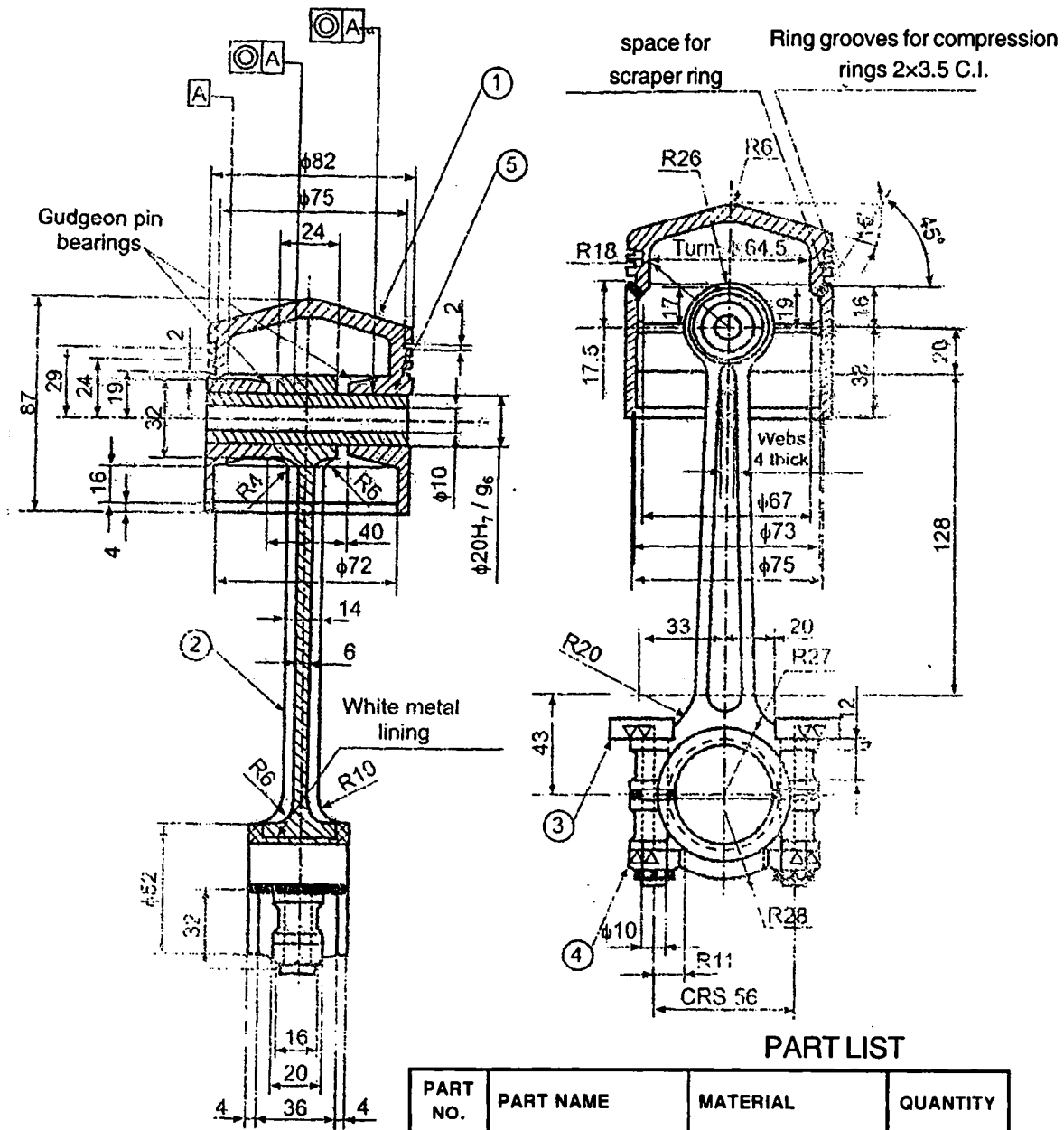


Fig. 4

5. Attempt any ONE :

20

- (a) Fig. 5(a) shows assembly of piston and connecting rod. Draw the details.



FIT CHART
 $20 H_7/g_6 =$
 clearance FIT

PART LIST			
PART NO.	PART NAME	MATERIAL	QUANTITY
1.	PISTON	ALL. ALLOY	1
2.	CONNECTING ROD	FORGED STEEL	1
3.	BIG-END BOLT	M.S.	2
4.	CASTLE NUT	M.S.	2
5.	GUDGEON PIN	HARDENED STEEL	1

Fig. 5 (a)

P.T.O.

