FACULTY OF ENGINEERING AND TECHNOLOGY
S.E (Mech/Prod) Examination - June – 2015
Machine Drawing
(Revised)

[Time: Four *Hours*]   [Max. Marks: 80]

"Please check whether you have got the right question paper."

N.B   i)   <u>All</u> the questions are compulsory.
              i)   Figures to the right indicate full marks.
              ii) Assume suitable data, if wherever necessary.

SECTION-A

Q.1   a)   The major axis of an ellipse is 150mm long and the minor axis is 100mm long. Find the foci and the ellipse   08
           by 'arcs of circles' method. Draw a tangent to the ellipse at a point on it 25mm above the major axis.

      b)   A circle of 50mm diameter rolls on the circumference of another circle of diameter 175mm and outside it.   08
           Trace the locus of a point on the circumference of the rolling circle for one complete revolution. Name the
           curve. Draw a tangent and a normal to the curve at a point 125mm from the centre of the directing circle.

Q.2   Fig No.1 shows front view, incomplete side view and partial auxiliary view of an object. Draw the following   12
           views:- i) Redraw Front view   ii) Complete right hand side view   iii) Top view.
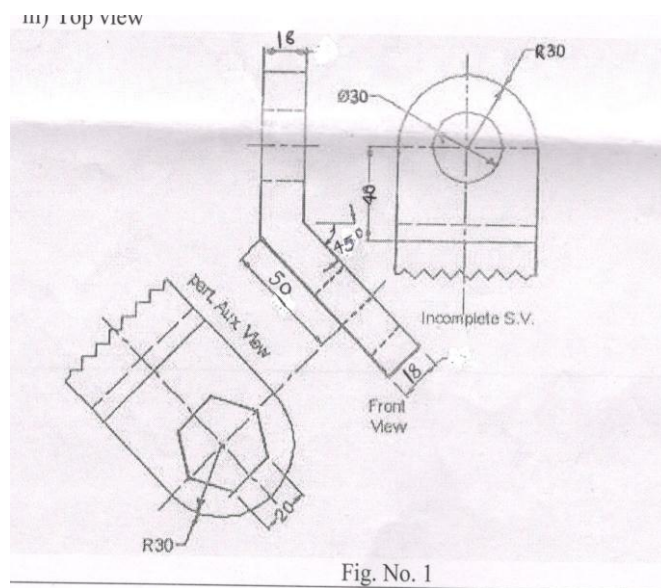
Fig. No. 1

OR

Q.2   Two views of an object are shown in the fig. No.2. draw its isometric view.   12

Fig. No.2
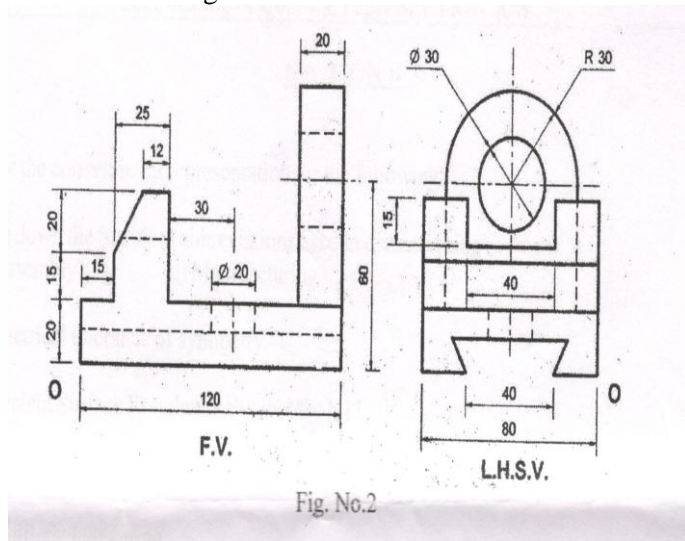
Q.3 A vertical square prism of base 50mm side and height 125mm stands on the ground with a side of base 12
inclined at 30^0 to V.P. it is penetrated by a cylinder, 50mm diameter and 125mm long, whose axis is parallel
to both H.P. and V.P. and bisects the axis of the prism. Draw the projections showing fully the curves of
intersection.

OR

Q.3 A vertical cone, base 80mm diameter and axis 110mm long is penetrated by a horizontal cylinder, 45mm in 12
diameter and 120mm long. The axis of the cylinder is 25mm above the base of the cone, is parallel to the V.P.
and is 10mm away from the axis of the cone. Draw the projections of the solids showing curves of
intersection.

SECTION -B

Q.4 Draw the conventional representation for the following. 15
i) Write down the standard abbreviations used in dimensing
   a) Assembly   b) Manufacturing
ii) Geometrical tolerance of symmetry.
iii) Equivalent Surface Roughness Symbol for N11.
iv) Equivalent Surface Roughness Symbol for N1.
v) Semi elliptic leaf spring.
vi) Geometrical tolerance of position.
vii) Surface texture obtained by any production method.
viii) Liquid
ix) Straight knurling.
x) Spot weld
xi) Conventional Signs of weld
xii) Seam weld
xiii) Transition fit.
xiv) Spur gear
xv) Oblique dimension of Aligned system.

Q.5 Fig N.3 below shows the details of the cross head. Assemble all the parts, tabulate the part list and draw   i) 25
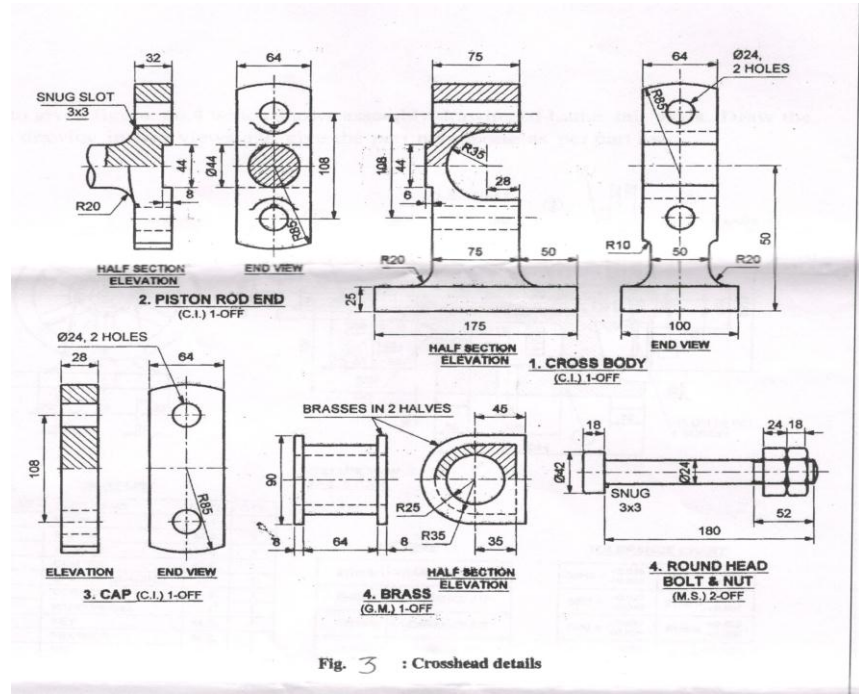Haft sectional front view and   ii) Side view

Fig. 3   : Crosshead details

OR

Q.5 Refer to given fig no.4 which shows assembly drawing of Lathe tail stock. Draw the details drawing in two 25
views and give the part numbering as per part list.

PART LIST

PART NO.	PART NAME	MATL.	QTY.
1	BODY	C.I.	1
2	BARREL	M.S.	1
3	SPINDLE	M.S.	1
4	CENTER	C.S.	1
5	SPINDLE BEARING	C.I.	1
6	SCREW	M.S.	1
7	HAND WHEEL	C.I.	1
8	KEY	M.S.	1
9	FEATHER	M.S.	1
10	NUT	M.S.	1

ASSEMBLY OF TAIL STOCK

FIT CHART

21H6/k5	TRANSITION FIT
5H6/e7	CLEARANCE FIT
38H6/f6	CLEARANCE FIT
6H6/e7	CLEARACE FIT

TOLERANCE CHART

38H6 = +0.016 / +0.000	21H6 = +0.013 / +0.000
38f6 = −0.025 / −0.040	21k5 = +0.011 / +0.002
6H6 = +0.080 / +0.000	5H6 = +0.008 / +0.000
6e7 = −0.020 / −0.032	5e7 = −0.020 / −0.032

Fig no. 4