Form A: *Ref. No.* **Ex/Prod/T/116/2017(S)**

B.Prod.Engg. 1st Year Examination, Supplementary 2017
(1st Semester)
SUBJECT: PROJECTION AND SPATIAL GRAPHICS

Time : Three hours   Full Marks 100
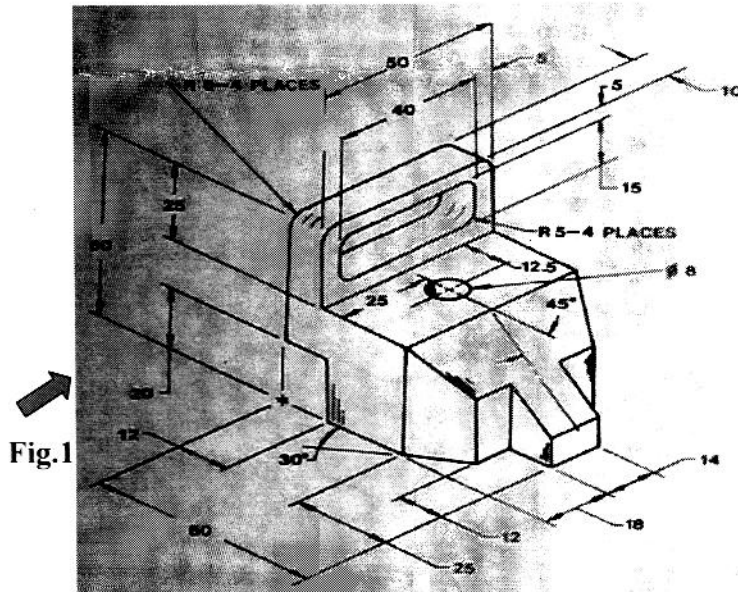
Answer any *Two* questions from **Group-A**,

and

any **Four** question from **Group-B**.

(Draw the Diagram Neatly and Dimension them Properly)

Group-A

1. Draw the three orthographic views in **Third Angle Projection** method of the object shown in **Fig.1** taking front view from the arrow side with proper dimension, scale and angle of projection.   20

Fig.1

2. Draw a **parallelogram ABCD**, which is lying on the plane BCP. The point P is lying on line AD, such that **AP=AB**. The co-ordinate of points B, C and P are given below: 20

    B(10, 50, 20), C(60, 5, 25) and P(20, 20, 40)

    Draw the projection of parallelogram ABCD, find out the **AREA** of ABCD and co-ordinate of A, D **graphically**.

3. A right **regular pentagonal pyramid**, edge of base 30mm and height 60mm, is resting on HP on one of its base edges such that the triangular face containing that edge is perpendicular to the HP and parallel to VP. Draw the front and top views of the pyramid in the given position.   20

P.T.O.

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Group-B

4. A **right circular cylinder**, diameter of base **50mm** and height **80mm**, is resting on   **15**
its base on HP. It is intersected by another **cylinder** of **36mm** diameter such that the
axes of the two cylinders are mutually perpendicular and are **5 mm infront** of the
axis of the vertical cylinder. The axis intersected cylinder is 45mm above of the HP.
Draw the projections of the solids showing curves of intersection. Assume any
suitable length of the penetrating cylinder.

5. Determine graphically the **true length**   **15**
and **true angle** of line **AB** with HP and
VP respectively. The co-ordinate of
point are:

A(-10, 20,-30) and B(40,-30,-40)
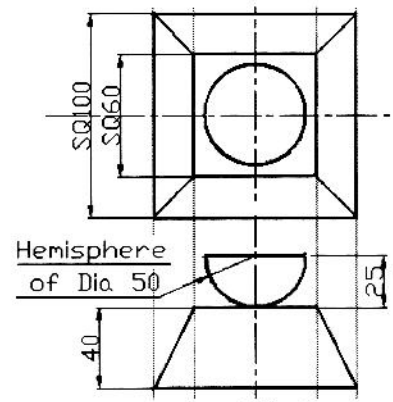
6. Draw the Isometric view with proper   **15**
dimension of the following object
shown in **Fig.2.**

Fig. 2.

7. A right **regular pentagonal prism**, side of base 25 mm and height 65 mm, rests on   **15**
an edge of its base on HP, such that the rectangular face containing the base edge is
inclined to the HP at 30°. A section plane perpendicular to the HP and inclined to the
VP at 45° cuts the prism such that the long edge farthest away from the VP is
bisected. Draw the top view, sectional front view and true shape of the section of the
cut prism.

8. An actual distance of 1000 km between two points on a map is shown by a line 20 cm   **15**
long. Construct the corresponding **forward vernier** scales of kilometers, and also
represent the distance of 776km on the scale.