Subject: ENGINEERING DRAWING
Time: 3 Hours   **Max. Marks: 100**

NOTE:
   (a) **This question paper contains SEVEN questions. These are arranged in three Section A, B and C.**
   (b) **Section A and B are compulsory and contain one question each.**
   (c) **Section A carries 16 marks and Section B carries 42 marks. All other questions carry 14 marks each.**
   (d) **Detach this sheet from the question paper and answer question on this sheet only on Pages 1 & 2. Attach it to the main drawing sheet. Remaining questions are to be answered on the main drawing sheet.**
   (e) **All dimensions given are in mm. Use suitable values of any missing and mismatching dimensions.**
   (f) **Use BIS Code: SP: 46-1988 for all drawings and do not rub off construction lines.**

ROLL NO………………….

SECTION A (Compulsory)

Note :1. Attach this sheet to the main drawing sheet.
       2. Write Answers To Question No. 1 In This Sheet Only.

Q.1   **Write the correct or best alternative in the following :**   **(8 × 2=16)**

   a.   Convention used for representing invisible edges is

       (A) thick dotted line.   **(B)** thin continuous line.
       (C) thick continuous line.   **(D)** chain line.

   b.   In isometric drawing, the scale used is

(A) full scale.

(B) isometric scale.

(C) half scale.

(D) $\frac{2}{3}$ scale.

line is parallel to both H.P. and V.P., its both elevation and plan will be
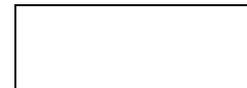
(A) parallel to xy.

(B) perpendicular to xy.

(C) one parallel & other perpendicular to xy.

(D) inclined to xy.

drawn inclined to horizontal at an angle of
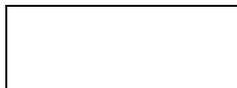
(A) $30°$. **(B)** $45°$.

(C) $50°$. **(D)** $60°$.

e. A cone is obtained by revolving a _____ about an axis

(A) straight line.
(B) right angled triangle.
(C) square.
(D) rectangle.

f.   A knuckle joint is used to connect two rods subjected to

(A) axial and rotating forces.
(B) rotating forces.

(C) axial forces.
(D) axial and normal forces.

g.   Collars or flanges provided at the ends of a bearing bush for a Plummer block helps to prevent

(A) rotation of bearing bush.
(B) axial movement of bearing bush.
(C) rotation and axial movement.
(D) wear.

h.   A small vertical cylinder centrally penetrates a large vertical cone; the shape of the intersection curve in the plan is

(A) elliptical curve.   (B) two parabolic curve.
(C) straight line.   (D) circle.

SECTION B

Q.2   Fig.1 (on Page 4) shows the details of a Gib and cotter joint for square rods. Draw the following views of the assembly to a scale full size:
(i) Front view with top half in section.
(ii) Top view with front half in section.
(iii) Right side view.
 Show overall dimensions. Print the title block and draw the projection symbol.   **(20+10+5+5+1+1   = 42)**

SECTION C

Q.3   A plate having the shape of an isosceles triangle has its base 50 mm long and altitude 60 mm long. It is so placed that in front view, it appears as an equilateral triangle of 50 mm sides and its smaller side inclined at 60° to X-Y line. Draw its top view and determine its inclination with V.P.   **(14)**

Q.4   The top view of a straight line AB 120 mm long measures 90 mm. The end A is in H.P. and 20 mm infront of V.P. The top view is inclined at an angle of 30° to X-Y line. Draw the projections of the straight line and show its traces.   **(14)**

Q.5   A square pyramid of base side 30 mm and height 60 mm is resting with one of its base sides on V.P., such that the axis is inclined at 30° to V.P. The side on which it rests on V.P. is inclined at 40° to H.P. Draw the projections of the solid.   **(14)**

Q.6   The distance between two places is 300 m and is shown on a map with an equivalent length of 12 cm. Construct a diagonal scale to show metres and long enough to measure upto 400m. Show distances of 378 m, 264 m and 123 m on the scale.   **(14)**

Q.7   Draw two views of a hexagonal head with a hexagonal nut and washer. The nominal diameter of the bolt is 24mm and shank length = 100 mm.   **(14)**

GIB AND COTTER JOINT FOR
SQUARE RODS (PICTORIAL DETAILS)
FIG-1