Code: D-03   **Subject: ENGINEERING DRAWING**
Time: 3 Hours   **Max. Marks: 100**

NOTE:
    (a) **This question paper contains SEVEN questions. These are arranged in three Sections A, B and C.**
    (b) **Sections A and B are compulsory and contain one question each. Answer any THREE questions from Section C.**
    (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 write answers 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 :**   **(2 $\times$ 8=16)**

        a.   In the third angle projection, the view projected on V.P. is called

         (A) top view.   **(B)** side view.
         (C) plan.   **(D)** front view.

b. A cone is cut by a vertical section plane passing through its axis. The sectioned area will be

(A) Triangular
(B) Elliptical.
(C) Parabolic.
(D) Hyperbolic.

c. The curve generated by a point moving around the surface of a right circular cylinder in such a way that its axial advance i.e. its movement in the direction of length of the cylinder is uniform with its movement around the surface of the cylinder is called

(A) Involute.
(B) Cycloid.
(C) Spiral.
(D) Helix.

d. A hole in the cap of a Plummer block on the top helps

(A) in cooling by circulation of air.
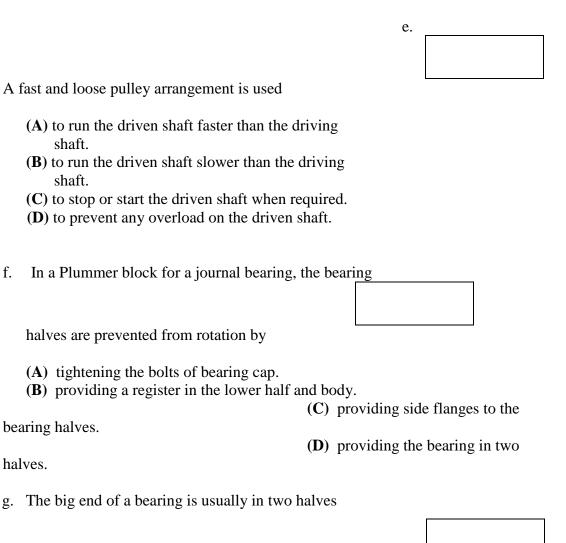   (B) in providing lubricant.
(C) the excess lubricant to escape.

(D) in locating the two halves of bearing.

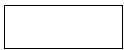e.

A fast and loose pulley arrangement is used

    (A) to run the driven shaft faster than the driving
       shaft.
    (B) to run the driven shaft slower than the driving
       shaft.
    (C) to stop or start the driven shaft when required.
    (D) to prevent any overload on the driven shaft.

f.   In a Plummer block for a journal bearing, the bearing

halves are prevented from rotation by

    (A) tightening the bolts of bearing cap.
    (B) providing a register in the lower half and body.
                       (C) providing side flanges to the
bearing halves.
                       (D) providing the bearing in two
halves.

g. The big end of a bearing is usually in two halves

    (A) for easy assembly with the crank shaft.
    (B) for easy machining of the two parts.
    (C) for reducing cost.
    (D) for ease of forging

h. The projection of a circular lamina on V.P., which is parallel to H.P.
    and perpendicular to V.P. is

    (A) a point.
    (B) a straight line.
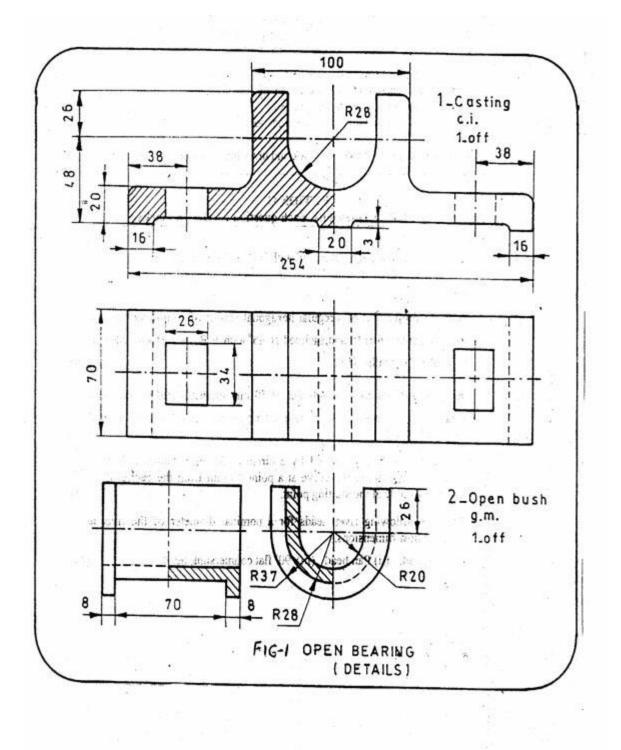
(C) a circle.
(D) an ellipse.

SECTION B

Q.2 Fig.1 (on Page 4) shows the details of an open bearing. Draw the following views of the assembly by taking a scale of 1:2.
(i) Front view with left half in section.
(ii) Left Side view with right half in section.
(iii) Plan.
Show dimensions. Print title block and draw the projection symbol.
(20+10+5+5+1+1 = 42)

SECTION C
Answer any THREE Questions. Each question carries 14 marks.

Q.3 A line AB 65 mm long makes $30°$ with H.P. and $45°$ with V.P. End A is in H.P. and end B is in V.P. Draw the projection of the line and show its traces. **(14)**

Q.4 Draw the projections of a regular hexagonal lamina of 30 mm side having one of its sides in H.P. and inclined at $45°$ with V.P. Its surface makes an angle of $60°$ with the H.P. **(14)**

Q.5 Draw the projections of a cylinder of 50 mm diameter and 60 mm long lying on H.P. on one of its generators, with its axis inclined at $30°$ to V.P. and parallel to H.P. **(14)**

Q.6 Construct a cycloid generated by a circle of 35 mm diameter. Draw a tangent and normal to the curve at a point 40 mm from the centre of the generating circle at the starting point. **(14)**

Q.7 Draw the following rivet heads for a nominal diameter of the rivet as 24 mm. Show dimensions.

(i) Snap head. (ii) Pan head (iii) $90°$ flat countersunk head.
(14)

FIG-1 OPEN BEARING (DETAILS)