DECEMBER 2007
Code: AE02 **Subject: ENGINEERING GRAPHICS**
Time: 4 Hours **Max. Marks: 100**

NOTE:

1. (a) There are SEVEN questions in all and these are arranged in three Sections A, B and C.
(b) Sections A and B are compulsory and carry 20 marks and 32 marks respectively.
(c) Out of remaining 5 questions (of 16 marks each) in Section C students are required to answer any 3 questions.
2. 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.
3. All dimensions given are in mm. Use suitable values of any missing and mismatching dimensions.
4. Use BIS Code: SP: 46-1988 for all drawings and do not rub off construction lines.

Roll No……..

SECTION A (Compulsory) – Marks – 20

Note : - Answer this on question paper itself and annex with the drawing sheet.

Q1. A. Choose the correct or best alternative in the following: (2 x 10 = 20)

QUESTIONS **ANSWER HERE**

a When the section plane is inclined to the axis of vertical cone and section plane being parallel to one of the end generator, the true shape of the section obtained will be

(A) an ellipse
(B) rectangular hyperbola
(C) hyperbola
(D) parabola

_____

b Plan and elevation of an object lie below X-Y line in an orthrographic projection. Then the object is in _____

(A) I quadrant
(B) II quadrant

(C) III quadrant
(D) IV quadrant

_____

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c For drawing the very small objects such as gear in a watch, _____ scales are used
(A) equal
(B) enlarged
(C) reduced
(D) none of these

_____

d The dimensional difference between the maximum and minimum limits of the size of a part is known as
(A) tolerance
(B) fundemantal deviation
(C) allowance
(D) upperdeviation

_____

e Acme thread is the modified form of
(A) B.S.W. thread **(B)** knuckle thread
(C) square thread **(D)** buttress thread

_____

f If 'd' is the diameter of a sphere, then in isometric projection, its value will be equal to

(A) $\sqrt{\frac{3}{2}}d$ **(B)** $\sqrt{\frac{2}{3}}$ d

(C) 0.88 d **(D)** d

_____

g The eccentricity of a hyperbola is
(A) greater than 1
(B) less than 1
(C) equal to 1
(D) none of these

_____

Q1. B. State whether True or False

h Ball bearings have line contact
(A) True
(B) False

i Front views of two lines are perpendicular. Hence the lines must be perpendicular to H.P.
(A) True
(B) False

j Keys are generally used in shear and compression
(A) True
(B) False

SECTION B (Compulsory)

Q.2 Fig. 1 on page 4 shows sectional isometric view of a footstep bearing. Draw to fullscale the following views:

(i) Half sectional front view with right half in section
(ii) Topview. **(20+12 = 32)**

SECTION C
Answer any THREE Questions. Each question carries 16 marks.

Q.3 A generating circle of 40 mm diameter rolls outside the directing circle of 150 mm diameter. Draw the path described by a point on the rolling circle and name the

curve described. Draw tangent and normal to the curve at 100 mm from the center of the directing circle. **(16)**

Q.4 A triangle prism of 30 mm side and height 70 mm is resting on lateral surface on H.P. The axis of the solid is 45° to V.P. Draw its projection. **(16)**

Q.5 The distance between the end projectors of a line is 70 mm and the projectors through the traces are 110 mm apart. One end of the line is 10 mm above H.P. If top view and front view makes 30° and 45° respectively with line of intersection of H.P. and V.P., draw the projections of the line. Also locate its traces and determine true length, true inclination with H.P. and V.P. **(16)**

Q.6 Draw sectional front view of a CI flanged pipe joint having inner dia. of pipe 50 mm, Outside dia. of pipe 70 mm, outside dia. of flange 170 mm, thickness of flange 18 mm, packing 3 mm thick, joining by 4-16φ square headed bolts in 17φ holes of 125 PCD. **(16)**

Q.7 Draw two views of double riveted lap joint for joining two plates of 9 mm thickness. Give important dimensions on the drawing. **(16)**

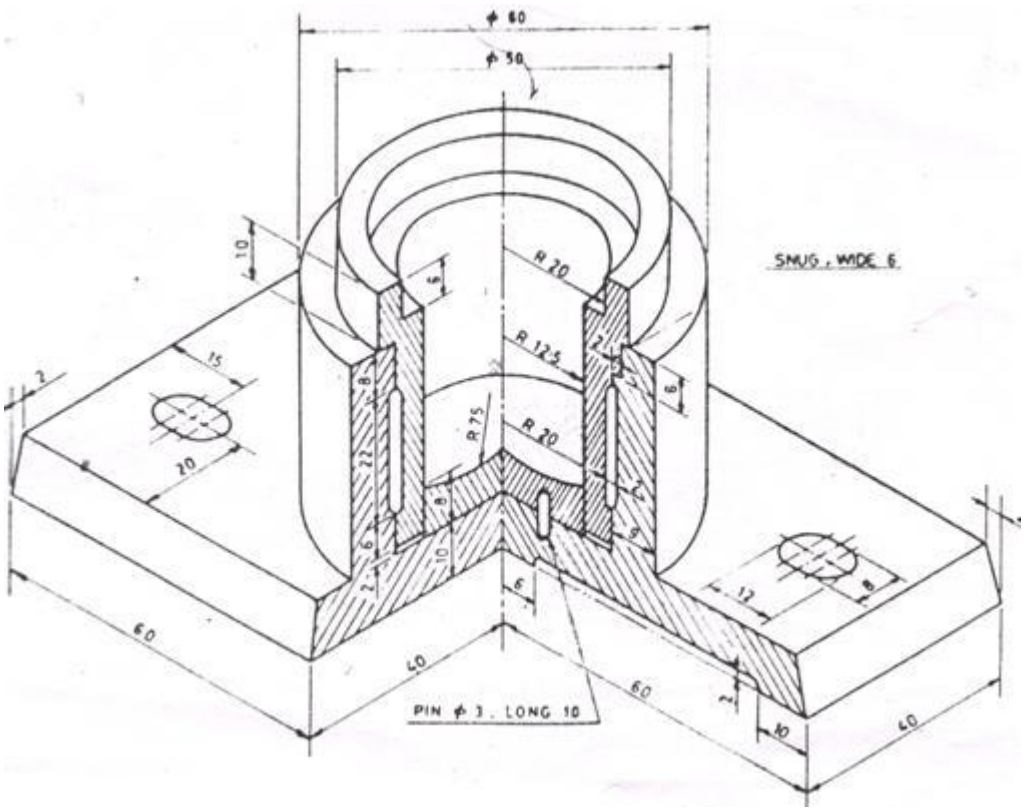

Fig. 1