Code: AE02   **Subject: ENGINEERING GRAPHICS**

AMIETE – ET (OLD SCHEME)

Time: 4 Hours   **OCTOBER 2012**   **Max. Marks: 100**

PLEASE WRITE YOUR ROLL NO. AT THE SPACE PROVIDED ON EACH PAGE IMMEDIATELY AFTER RECEIVING THE QUESTION PAPER.

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.

SECTION A (Compulsory) – Marks – 20

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

Q1.   Choose the correct or best alternative in the following: (2 x 10 = 20)
               QUESTIONS   **ANSWER HERE**

   a. R. F in case of reducing scale would be

   (A) Equal to 1   **(B)** less than 1
   (C) greater than 1   **(D)** none

                       _____

  b   The curve traced out by a point on a straight line which rolls without slipping, along a circle or a polygon is called :

   (A) Involute   **(B)** Epicycloid
   (C) cycloid   **(D)** Epitrochoid

                       _____

CENTRE STAMP

Signature of Suptd/invigilator

c. The plane comes between the object and the observer in projection method:

    (A) First Angle   **(B)** Third Angle
    (C) Second Angle   **(D)** None of the above   _____

d. When a square plane is perpendicular to a reference plane, its projection on that plane is a

    (A) Square   **(B)** Rectangle
    (C) Straight line   **(D)** None of the above   _____

e. Top view of a hexagonal prism whose axis is parallel to both the planes, is

    (A) A triangle   **(B)** A rectangle
    (C) A pentagon   **(D)** A hexagon   _____

f   If the development of a square prism is a square of 300 mm side, then the length of the base side will be

    (A) 25 mm   **(B)** 50 mm
    (C) 75 mm   **(D)** 100 mm   _____

g   The double ordinate through the focus of a conic is called

    (A) Vertex   **(B)** Directrix
    (C) Latus Rectum   **(D)** Tangent   _____

h   A circle is drawn as ellipse in _____ projection.

    (A) Isometric   **(B)** Orthographic
    (C) Oblique   **(D)** Perspective   _____

i. _____ coupling is used to couple two shafts whose axes intersect

    (A) Oldham's   **(B)** Flanged
    (C) Muff   **(D)** Universal   _____

j   When a section plane is inclined to the axis of a cone and is parallel to any one of the generators, the shape of the section is

    (A) Parabola   **(B)** Ellipse
    (C) Circle   **(D)** Hyperbola   _____

SECTION B (Compulsory)

Q.2   The pictorial view of an object is shown in Fig.1. Draw the following views of this object
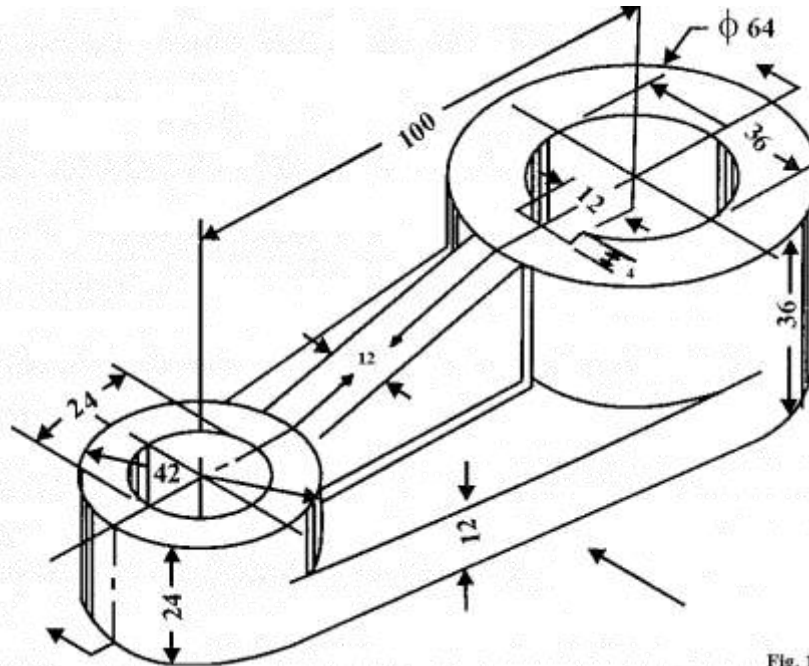

Fig. 1

(i)   Sectional front view
(ii)   Side view from the left and
(iii) Top view
Use third angle projection method.   **(12+10+10 = 32)**

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

Q.3   A straight line AB 60 mm. long has its end A in both H.P. and V.P. The straight line is inclined at 30^0 to V.P. and 45^0 to H. P. Draw its projections when the line lies in first quadrant.   **(16)**

Q.4   Draw an epicycloid, given the radii of rolling and directing circle as r = 30mm and R = 120 mm, respectively. Also draw a normal and a tangent at any point on the curve.   **(16)**

Q.5 a. Construct a diagonal scale of representative fraction 1/500. It should be long enough to measure 100 metres. Show a distance of 64.4 metres on the scale.   **(8)**

    b. Draw the top and front view of a double riveted, double straps butt joint. Take t = 10 mm and d = 20 mm.   **(8)**

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Q.6   Draw isometric view of a frustum of cone of base diameter 40 mm, top diameter 20 mm and height 60 mm, resting centrally on top of a square block of 60 mm side and 20 mm thick.   **(16)**

Q.7 a. Draw one view of a hexagonal bolt and nut, with shank dia 24 mm and length 100 mm.   **(8)**

b. Draw two views of an open bushed bearing.   **(8)**