Subject: ENGINEERING DRAWING
Time: 3 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)

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 :   **(10 $\times$ 2=20)**

   a.   The distance between the centre of the rivet hole to the nearest edge of the plate is known as

   (A) pitch   **(B)** margin
   (C) diagonal pitch   **(D)** transverse pitch

b. The angle between the flanks of British Standard Whitworth thread is

(A) 29º   **(B)** 47.5º
(C) 55º   **(D)** 60º

only is

(A)

saddle key   **(B)** sunk key
(C) woodruff key   **(D)** tangent key

d. The algebraic difference between the actual size and the corresponding basic size is known as

(A) deviation   **(B)** tolerance
(C) allowance   **(D)** clearance

e. The hidden edges of an object is shown by

(A) chain thick line

(B) dashed thick line
(C) continuous thin line
(D) short zig-zag thin line

f. The standard size of A_0 drawing sheet according to ISI in mm is

(A) 850×1200 **(B)** 841×1189
(C) 1000×1200 **(D)** 1000×700

g. In a butt joint with two cover plates of equal width, the thickness of straps is generally taken as

(A)

0.625t   **(B)** 0.75t
(C) 1.125t   **(D)**
1.5t

h. Which is not the material for automobile pistons?

(A) aluminium alloy   **(B)** cast iron
(C) cast steel   **(D)** steel forgings

i. The shaft length is increased by connecting two or more pieces of suitable lengths by

(A)

cotter joint
(B) knuckle joint
(C) bolted joint
(D) key and coupling

j. Which of the following fastening devices has both ends threaded?

(A)

stud

(B) cap screw
(C) turn buckle
(D) tap bolt

SECTION B (Compulsory)

Q.2   Draw the following views of a knuckle joint shown in terms of the standard proportions of the diameter of the rods to be joined: Take d=40mm.
(i)   Front view in secion
(ii) Top view
(iii) Side view looking from left   **(16+8+8)**
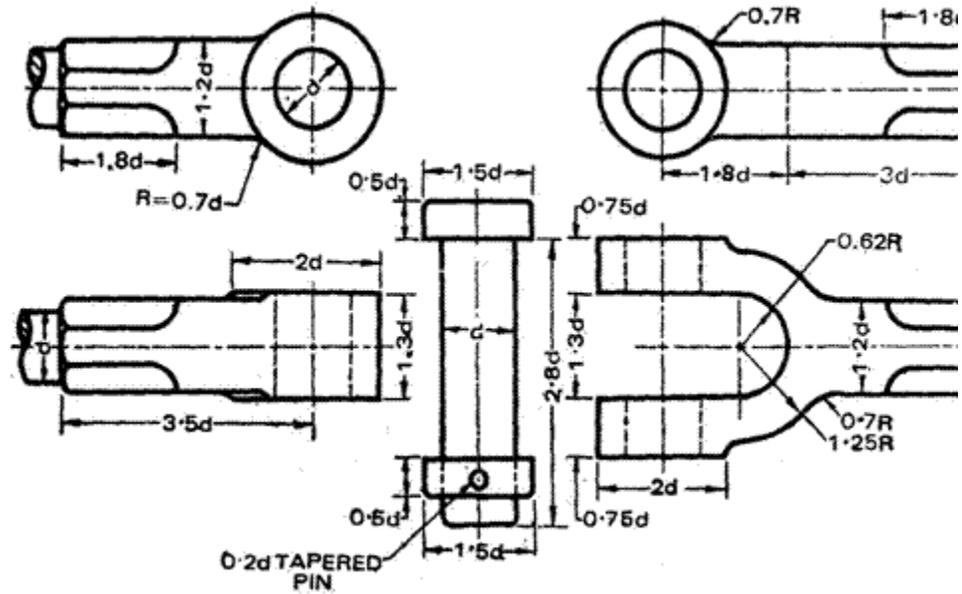
DETAIL DRAWING OF VARIOUS PARTS OF A KNUCKLE JOINT

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

Q.3 Draw a diagonal scale to represent 6 km by 1 cm and to show distance up to 60 km. Find the R.F. of the scale. Mark on this scale distance of 7.23Km and 4.46Km. **(16)**

Q.4 The right regular hexagonal prism is resting on the horizontal plane with axis perpendicular to the H.P. and parallel to the V.P. The side of the base is 30mm and axis 60mm long. One of the edges of the hexagonal prism is parallel to the V.P. and 40 mm in front of V.P. Draw the projections of the prism. Also draw side view of the prism. **(16)**

Q.5 A right circular cone of diameter 50mm and 60mm long, resting on its base on H.P. It is cut by a sectional plane inclined at 45° to H.P. and intersects the axis at a distance of 40mm from the base along the axis. Draw the sectional top view and development of the truncated cone. **(16)**

Q.6 Draw the top view and sectional front view of a double riveted double cover butt joint (zig-zag type) when the diameter of the rivet, d = 18mm. **(16)**

Q.7 Draw a cycloid, given the diameter of a generating circle as 40mm. Also draw a tangent and normal at any point on the curve. **(16)**