Subject: ENGINEERING DRAWING
Time: 3 Hours **June 2006**
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 × 2=20)

a. A cylinder is obtained by revolving

(A) line. **(B)** triangle.
(C) rectangle. **(D)** semicircle.

b. The true shape of a section of a sphere which is cut by a section plane inclined to its axis at some distance from the axis is

(A) circle. **(B)** ellipse.
(C) parabola. **(D)** hyperbola.

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c.

the 'sectional top view' and true shape of the section of a solid will be identical

(A) when the cutting plane is parallel to HP and perpendicular to V.P.
(B) when the cutting plane is perpendicular to HP and parallel to V.P.
(C) when the cutting plane is parallel to both HP and V.P.
(D) when the cutting plane is perpendicular to both HP and V.P.

d. The curve generated by a point on the circumference of a circle which rolls without slipping on a plane surface along a straight line is

(A) involute. **(B)** cycloid.

(C) epicycloid. **(D)** hypocycloid.

e. How many faces a tetrahedon has

(A) 3. **(B)** 4.
(C) 6. **(D)** 8.

f. Which type of threads are used for fasteners?

(A) square threads. **(B)** acme threads.
(C) buttress threads. **(D)** V-threads.

g.

For representing a threaded hole in a nut, the axial view consists of

(A) two thick concentric circles.
(B) two thin concentric circles.
(C) One thick circle and one dashed circle.
(D) Internal thick circle and external light broken circle.

h. Muff coupling is a

(A) Disengaging coupling.
(B) Coupling of shaft out of alignment.
(C) Rigid coupling.
(D) Flexible coupling.

i. Which joint is used to fasten two rods, subjected to tensile and compressive loads?

(A)

key joint. **(B)** screwed joint.
(C) riveted joint. **(D)** cotter joint.

j. Crowning of cast iron pulleys

(A)

helps to slip the belt over the pulley.

(B) helps for easy manufacture of pulleys.

(C) helps to prevent damage of belts.

(D) helps to keep the belt in the centre of pulleys.

SECTION B (Compulsory)

Q.2 Fig. 1 on page 4 shows the details of a knuckle joint. Draw the following views of the assembly to half the scale, giving important dimensions:
(i) Front view top half in section.
(ii) Left side view.
Print the title block and draw the projection symbol. **(20+8+2+1+1)**

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

Q.3 Construct a parabola such that the distance between focus and directrix is 15 mm. Draw a tangent and normal at a point 27 mm from the focus. **(16)**

Q.4 A cone of base diameter 50 mm and height 60 mm is resting on H.P. on one of its generators with its axis parallel to V.P. Draw its projections. **(16)**

Q.5 A hexagonal prism of base side 30 mm and axis length 60 mm is resting on H.P. on its base with two of its vertical faces perpendicular to V.P. It is cut by a plane inclined at 50° to H.P. and perpendicular to V.P. and passing through a point on the axis, 12 mm from the top surface. Draw its front view, sectional top view and true shape of the section. **(16)**

Q.6 Draw the section and thread profile of the following taking an enlarged pitch of 40 mm.
(i) B.S.W. thread (ii) B.A. thread
(iii) Metric thread (iv) Acme thread **(4x4=16)**

Q.7 Sketch an sectional elevation of an Internal Combustion Engine piston having a diameter of 65 mm. **(16)**

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FIG -1