JUNE 2008

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

QUESTIONS **ANSWER HERE**

a In _____ the portion of the object between cutting plane and the observer is assumed to be removed

(A) plan
(B) elevation
(C) profile view
(D) sectional view

_____

b When the measurements are made in two units _____ scales are used

(A) diagonal
(B) plain
(C) vernier

(D) comparative

_____

CENTRE STAMP

Signature of Suptd/invigilator

c If both plan and elevation of an object lies below X-Y line, then the object is in _____ quadrant

(A) I

(B) II

(C) III

(D) IV

_____

d The traces of planes are _____

(A) points

(B) lines

(C) planes

(D) none

_____

e Parallel line method is used for developing _____

(A) cones **(B)** pyramids

(C) prisms **(D)** spheres

_____

f Line of intersection between a square pyramid and a pentagonal prism consists of _____

(A) curved lines only

(B) straight lines only

(C) combination of both curved and straight lines

(D) depends on position and size

_____

g A sunk taper key is having _____ surface tapered

(A) top
(B) bottom
(C) side
(D) all

_____

h _____ is a cylindrical rod threaded at both the ends and left plain in the middle.
(A) bolt
(B) nut
(C) stud
(D) washer

_____

i The other name for Hooke's joint is _____
(A) Oldhams coupling
(B) Universal coupling
(C) Compression coupling
(D) Claw coupling

_____

j _____ is a curve traced by a point in a straight line which rolls without slipping along a polygon.
(A) cycloid
(B) epicycloids
(C) hypocycloid
(D) involute

_____

SECTION B (Compulsory)

Q.2 Fig. 1 shows the details of a knuckle joint. Draw the following views of the assembly to half the full size:

(i) Front view top half in section
(ii) Side view from right side **(20+12 = 32)**

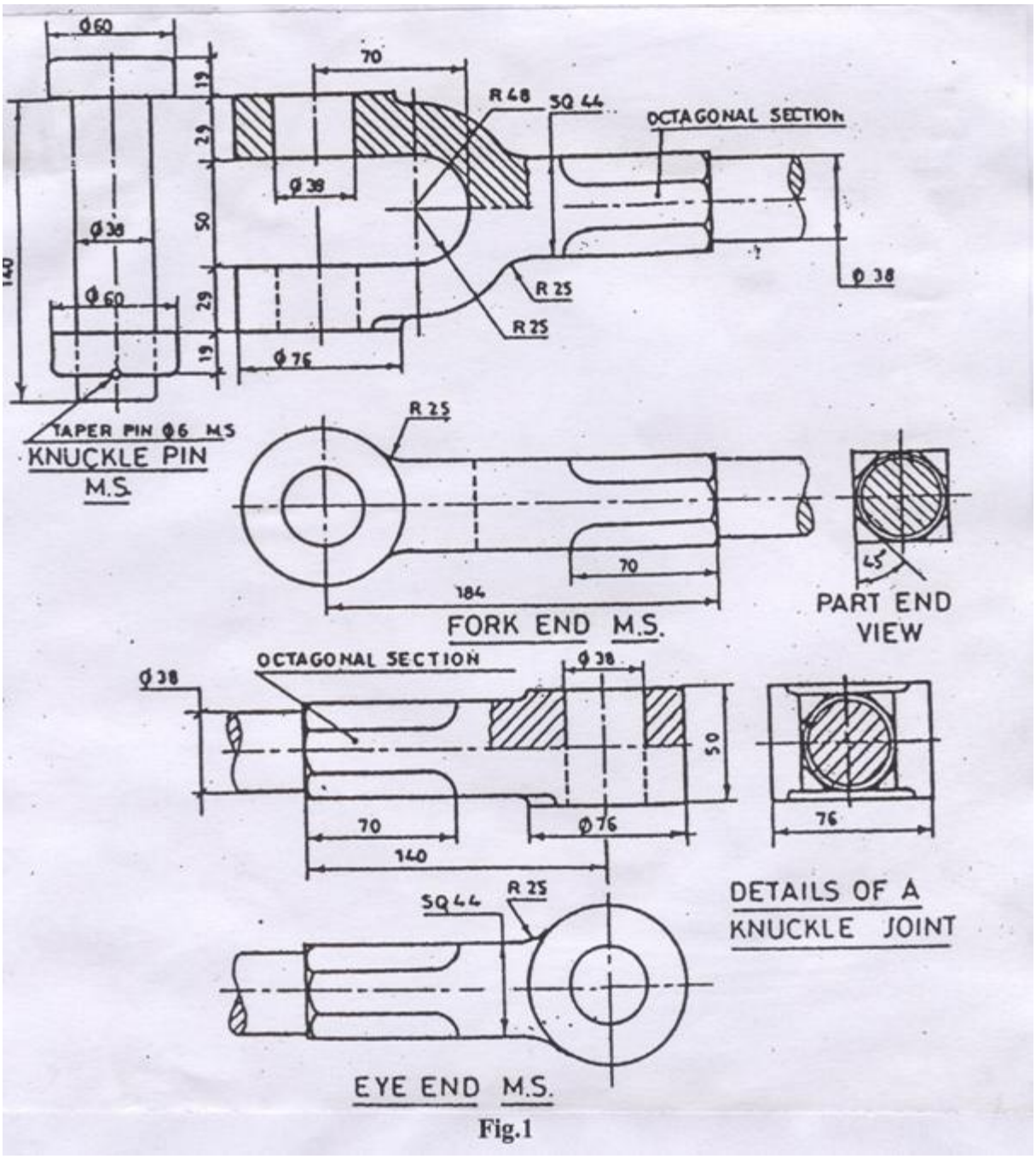
Ø60
70
19
29
50
29
19
140
Ø38
Ø60
Ø38
Ø76
R48
SQ44
OCTAGONAL SECTION
R25
R25
Ø38
TAPER PIN Ø6 MS
KNUCKLE PIN
M.S.
R25
70
184
FORK END M.S.
45°
PART END
VIEW
OCTAGONAL SECTION
Ø38
Ø38
50
70
Ø76
140
76
DETAILS OF A
KNUCKLE JOINT
SQ44
R25
EYE END M.S.

Fig.1

SECTION C

Answer any THREE Questions. Each question carries 16 marks.

Q.3 A straight line AB, 95 mm long has its end A 15 mm above HP and 10 mm infront of VP. The other end B is 65 mm above HP and 75 mm infront of VP. Draw the projections of the line. Also show the HT and VT of the line. **(16)**

Q.4 Construct a diagonal scale of 1:50, to show metres, decimetres and centimetres and long enough to measure upto 6 metres. Also indicate on this scale a distance of 4 m, 6 dm and 5 cm. **(16)**

Q.5 A sphere of 60 mm diameter is placed centrally on the top of a frustum of a square pyramid. The base of the frustum is square of 60 mm side, top surface is square of 40 mm side and height of the frustum is 50 mm. Draw the isometric projection of the combined solid. **(16)**

Q.6 Construct the curve generated by a point on a straight line which rolls without slipping along a circle of diameter 60 mm. Draw a tangent and normal at any point on the generated curve. **(16)**

Q.7 a. Draw a hexagonal headed bolt. Take the nominal diameter as 24 mm and shank length 100 mm. **(4)**

b. Draw the following rivet heads taking the nominal diameter 24 mm. Give dimensions:
(i) Snap head (ii) Pan head **(6)**

c. Show the schematic representation of the following:
(i) Basic Size (ii) Maximum size
(iii) Minimum size (iv) Upper deviation
(v) Lower deviation (vi) Tolerance **(6)**