ABV- Indian Institute of Information Technology & Management, Gwalior

SummerSemester2023

Major Exam

Course Title: Engineering Design Principles (EE-102)

MM: 30 **Duration: 3 hours**

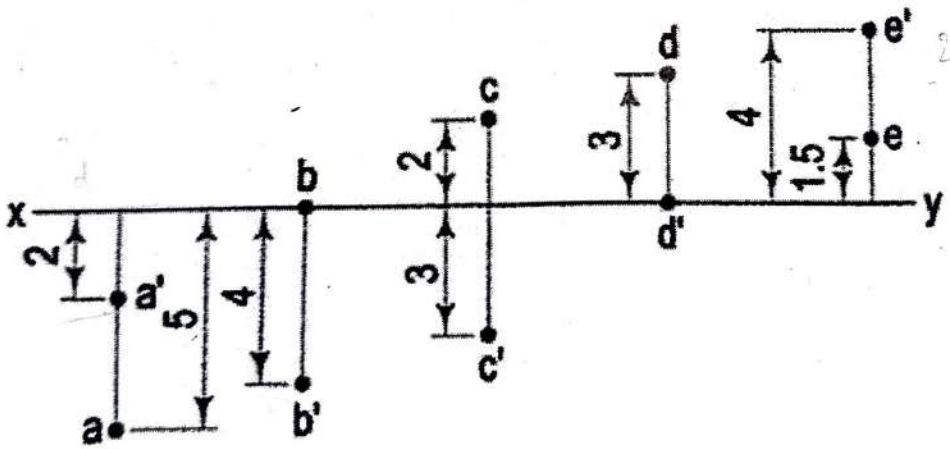
Note:
1. Please follow all the *Instructions* given on the cover page of the answer book.
2. All parts of a question should be answered consecutively. Each answer should start from a fresh page.
3. The question paper has **TEN** questions, and all the questions are compulsory.
4. Freehand drawing and incorrect dimensions will lead to zero marks.

Q.1 Explain Scales, what are the three ways to express a scale and types of scales. **[3]**

Q.2 Construct a scale of R.F.=1/60 to read yards and feet, and long enough to measure upto 5 yards. **[3]**

Q.3 Construct a diagonal scale of R.F.=1/4000 to show meters and long enough to measure upto 500 metres. Mark the length of 374 meters on the scale. **[3]**

Q.4 Projections of various points are given in figure below. State the position of each point with respect to the planes of projection, giving the distances in centimeters. **[3]**



Q.5 Two points A and B are in the H.P. The point A is 30 mm in front of the V.P., while B is behind the V.P. The distance between their projectors is 75 mm and the line joining their top views makes an angle of 45° with xy. Find the distance of the point B from the V.P. **[3]**

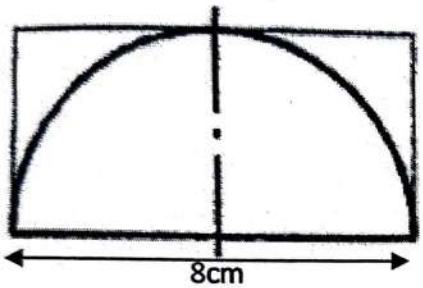
Q.6 A line CD is inclined at 30° to the H.P. and it is in the first quadrant. The end C is 15 mm above the H.P. while the end D is in the V.P. The mid point M of the line is 40 mm above H.P. The distance between the end projectors of the line is 70 mm. Draw the projections of the line CD and the mid point M. Determine graphically the length of front view and top view and true length of the line. Also determine inclination of the fine with the V.P. **[3]**

Q.7 Draw the projections of a circle of 50 mm diameter resting in the H.P. on a point A on the circumference, its plane inclined at 45° to the H.P. and [3]

(a) the top view of the diameter AB making 30° angle with the V.P.;

(b) the diameter AB making 30° angle with the V. P.

Q.8 Figure below shows the front view of a semi-circle of diameter 8 cm, whose surface is parallel to the V.P. Draw its isometric view. [3]



Q.9 Draw the isometric view of the pentagonal pyramid having sides of 5cm and height of 8cm, the projections of which are given below in Figure (a) [3]

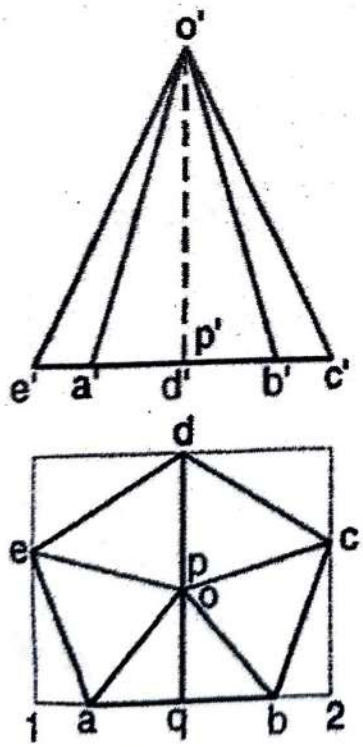


Figure (a)

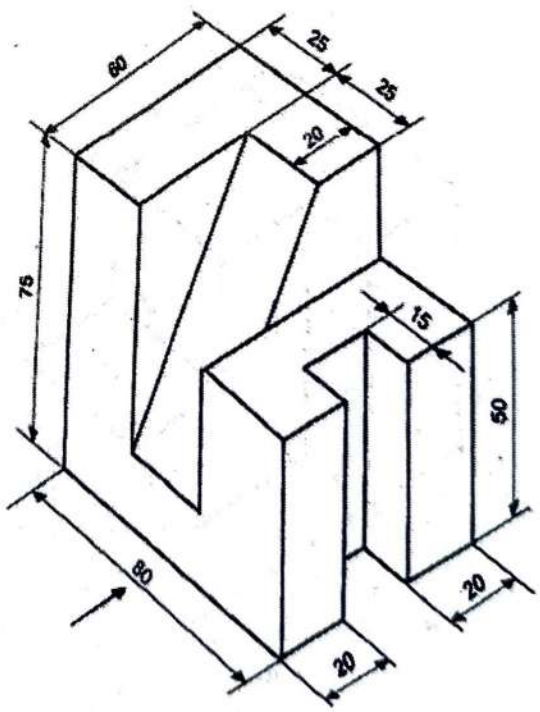


Figure (b)

Q.10 Draw the front view, top view and side view of the given drawing shown in Figure (b) using first angle method. [3]