

BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, PILANI,

FIRST SEMESTER 2017– 2018

BITS F110 (ENGINEERING GRAPHICS) ONLINE CLOSED BOOK COMPREHENSIVE EXAM(Makeup)

Duration: 75 Minutes

Max Marks: 80

Name: _____

ID No.: _____

NOTE:

- Save your work frequently and follow the note given for every question and draw accordingly
- COLOR CODE: Drawing outlines to be followed compulsorily: (Linetype: **CONTINUOUS** for all)
- Center lines → **BLUE** ♦ Construction lines → **CYAN** ♦ Hidden lines → **RED**
- Use **1grid spacing = 25 mm** for all questions.
- Label all the figures properly. ♦ CW → **Clock Wise**, ♦ CCW → **Counter Clock Wise**
- **Follow the angle of projection specified for each problem.**

Q.1. A regular pentagonal lamina ABCDE of 125 mm side is in 1st quadrant in a hanging position with line parallel to VP. The line AB makes an angle of 55° (CW) with HP. The plane makes an angle of 30° (CW) with VP. Draw the projections of the plane such that end B of side AB is 75mm above HP and 25mm in front of VP. Side AB is to the left of the observer. [25]

Q2. A hexagonal pyramid O-ABCDEF with base edge 125mm and height 325mm is standing on its base on the ground. The point B is closest point to the vertical plane and sides AB and BC are equally inclined to the vertical plane with A to the left of the observer and C to the right of the observer.

This is cut by an AVP that passes through the midpoint of CD and point A.

Draw the top view and sectional front view. Remove the portion of the pyramid that is between the observer and the AVP.

Draw the development of the lateral surface of the cut portion of the pyramid starting from slant edge OC in CCW. (solve in third angle) [25]

Q3. A square prism (base diagonal = 200mm; height = 250mm) is resting on the ground with base edges equally inclined to VP. It is completely interpenetrated by an irregular triangular prism (base dimensions as shown in Fig. Q3, height = 300mm) while interpenetrating, axis of the triangular prism is at a distance of 50mm from the axis of the prism and towards the observer; also the rectangular faces of the triangular prism are inclined to the ground as shown in Fig. Q3. Retain the solids after interpenetration such that the triangular prism projects out equally on both sides of the square prism. Following third angle method of projection,

- Draw the projections of the two interpenetrating solids
- Draw the interpenetration profile in the views after locating the key points.
- Trim the lines which have lost their identities due to interpenetration.

[30]

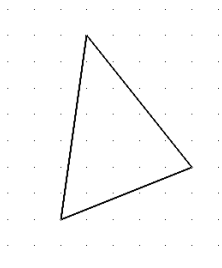


Fig. Q3