BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, PILANI, PILANI CAMPUS

FIRST SEMESTER 2022– 2023

BITS F110 (ENGINEERING GRAPHICS)
COMPREHENSIVE EXAM (OFFLINE and CLOSED BOOK)

Set: 1

Duration: 80 Minutes for Solving + 10 minutes for Uploading **Max Marks**: 80

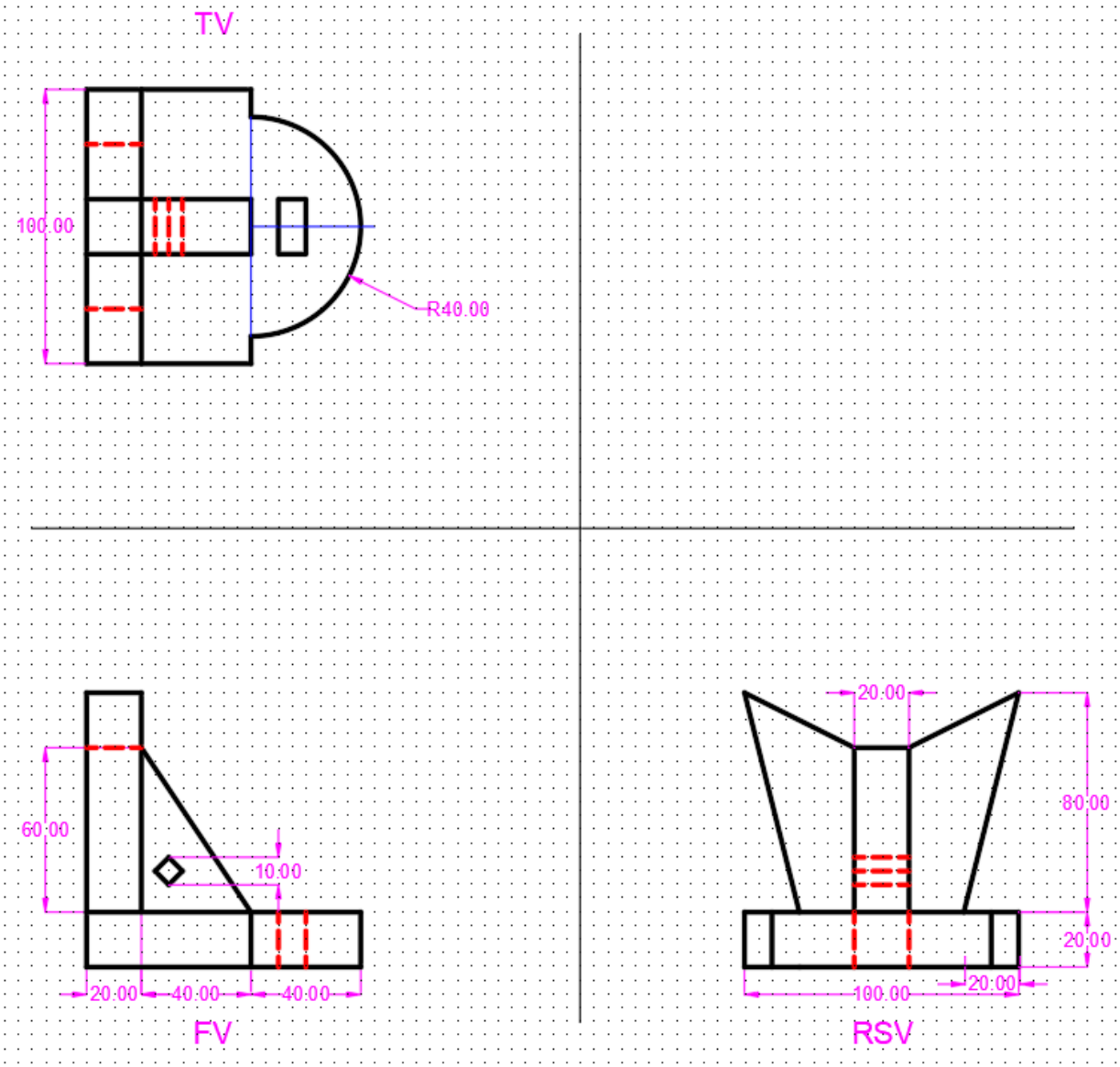
NOTE:

- Save your work frequently and follow the note given for every question and draw accordingly.
- COLOR CODE: Visible lines → White/black Continuous 0.3; Hidden lines → Red Hidden2 0.3; Center lines → Blue Center 0.0; Construction lines → Cyan Continuous 0.0; Locus lines→ yellow continuous 0.0, Dimension lines→ Magenta continuous 0.0; Section Line→ color 30 center line type 0.35. **Submit the '.dwg' file(s).** Folder on Desktop with C_BITS ID_First name. CCW → Counterclockwise; CW → Clockwise
- Label all the views properly (i.e., FV, TV and RSV/LSV)
- It is mandatory to submit '.dwg' file(s) on **Nalanda**. It is your responsibility to properly upload and turn in your '.dwg' files.
- You will be allowed to permanently leave the examination room only after the end of submission time. Please ensure you click the **submit** button for final submission. Any submissions beyond the deadline will be given negative marks.
- Providing Labels and Dimension Lines are compulsory.

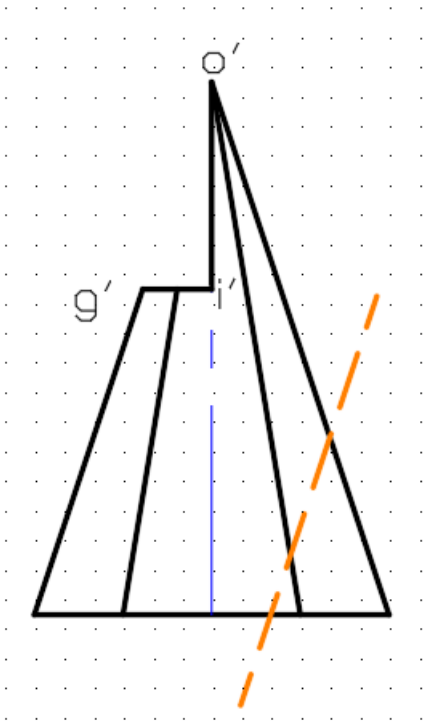
NAME: **BITS ID:** **YOUR SIGNATURE:**

Q1. A regular hexagonal solid pyramid of 50 mm base edge and 100 mm height is resting on its bottom base on the ground surface such that two base edges are perpendicular to VP. The pyramid is cut by two section planes. The left section plane is perpendicular to VP and parallel to ground surface and it is 20 mm above ground surface. The right section plane is perpendicular to VP and inclined 45 deg CW with the ground. The cut section planes meet at 20 mm above the ground and 20 mm right of axis of the pyramid in FV. Assuming that the portion above the set of section planes has been removed, draw the FV and sectional TV. Hatch the sectional top view. **[25]**

Q2. Draw the isometric drawing of the object show in orthographic projection below and mark the major dimensions arrow showing the front: **[30]**



Q3. A right regular hexagonal pyramid, with base edges 30 mm and height 90 mm, is resting on its base on the HP such that one of its base edges is parallel to the VP. The solid has a cut-out at the top, as shown in the figure, such that *o'i'* = 35 mm (*o'i' is coinciding with the axis of the pyramid and g'i' is parallel to HP)*. An AIP, perpendicular to the VP and parallel to the pyramid's slant side, cuts the base at a distance 10 mm from the centre of the base as shown in the figure. Draw the front view and sectional top view of the cut pyramid if the portion on the right of the AIP is removed. Also, develop its lateral surface from the leftmost slant edge in a CCW sequence as per your top view. Provide all necessary dimensions. **[25]**



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FIRST SEMESTER 2022– 2023

BITS F110 (ENGINEERING GRAPHICS)
COMPREHENSIVE EXAM (OFFLINE and CLOSED BOOK)

Set: 2

Duration: 80 Minutes for Solving + 10 minutes for Uploading **Max Marks**: 80

NOTE:

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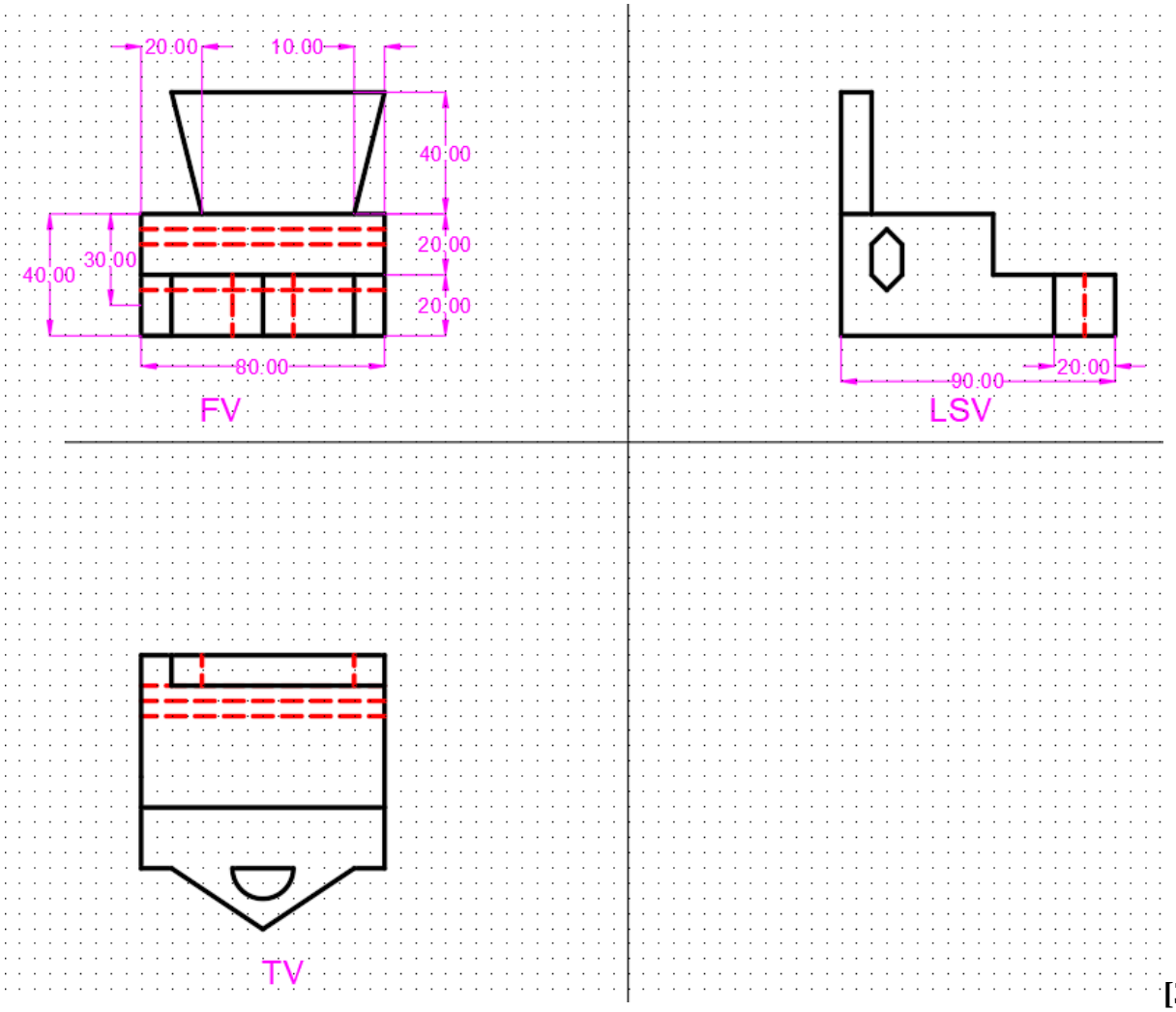
- Providing Labels and Dimension Lines are compulsory.

NAME: **BITS ID:** **YOUR SIGNATURE:**

Q1. A regular hexagonal solid pyramid of 50 mm base edge and 100 mm height is resting on its bottom base on the ground surface such that two base edges are perpendicular to VP. The pyramid is cut by two section planes. The right section plane is perpendicular to VP and parallel to ground surface and it is 20 mm above ground surface. The left section plane is perpendicular to VP and inclined 45 deg CW with the ground. The cut section planes meet at 20 mm above the ground and 20 mm right of axis of the pyramid in FV. Assuming that the portion above the set of section planes has been removed, draw the FV and sectional TV. Hatch the sectional top view. **[25]**

Q2. Draw the isometric drawing of the object show in orthographic projection below and mark the major dimensions arrow showing the front:



[30]

Q3. A right regular hexagonal prism of base edges 30 mm and height 90 mm is resting on its base on the HP such that one of its base edges is parallel to the VP. A rectangular hole of width 30 mm and height 20 mm is symmetrically cut through the prism about its axis, as shown in the figure. An AIP, perpendicular to VP, passing through the center of the top base, cuts the solid at 60 deg CCW angle with HP. Draw the front view and sectional top view of the cut prism if the portion above AIP is removed. Use hatches wherever required. Also, draw the development of the lateral surface from the leftmost vertical edge in a CCW sequence as per your top view. Provide all necessary dimensions. **[25]**