Rajiv Gandhi Institute of Petroleum Technology
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An Institution of National Importance, Government of India

Engineering Graphics (ME121)

Projection of Planes and Solids

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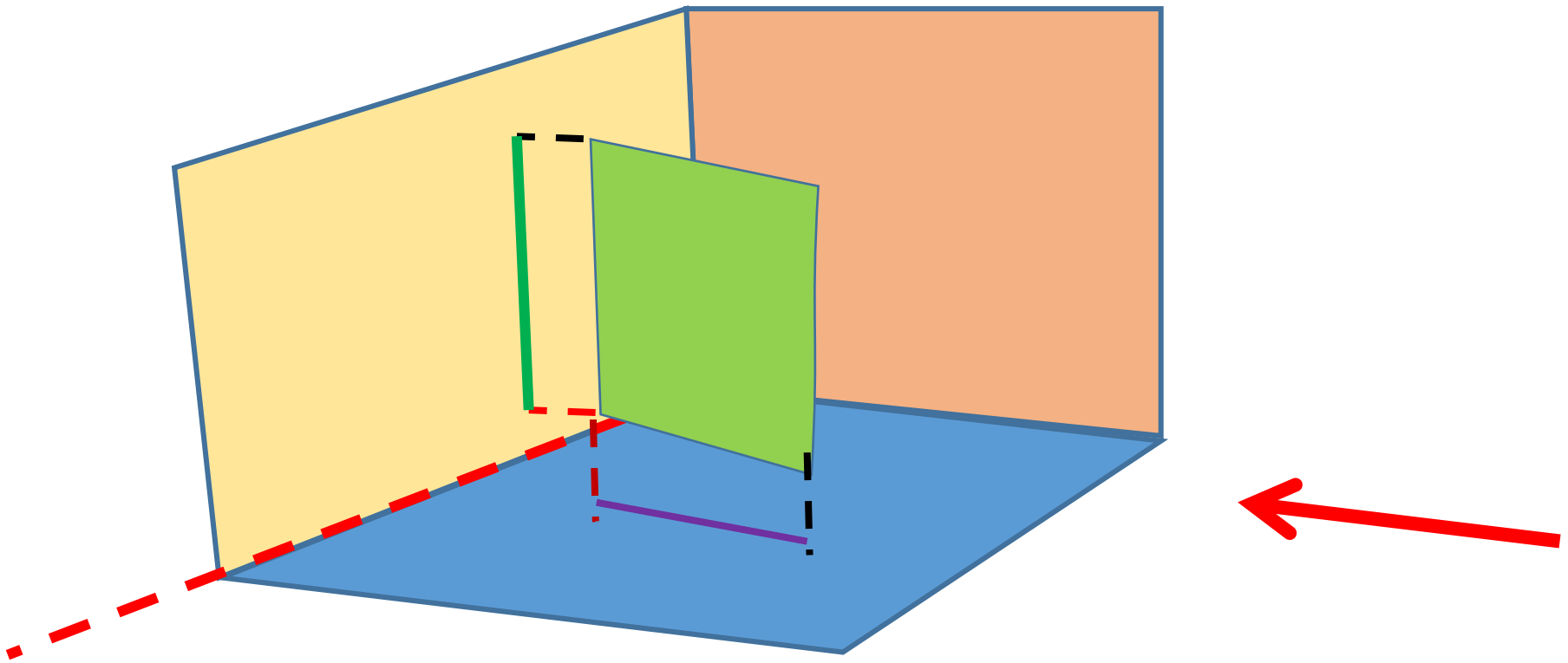
Topics

1. Projection of Plane
2. Projection of Solid
3. Exercise

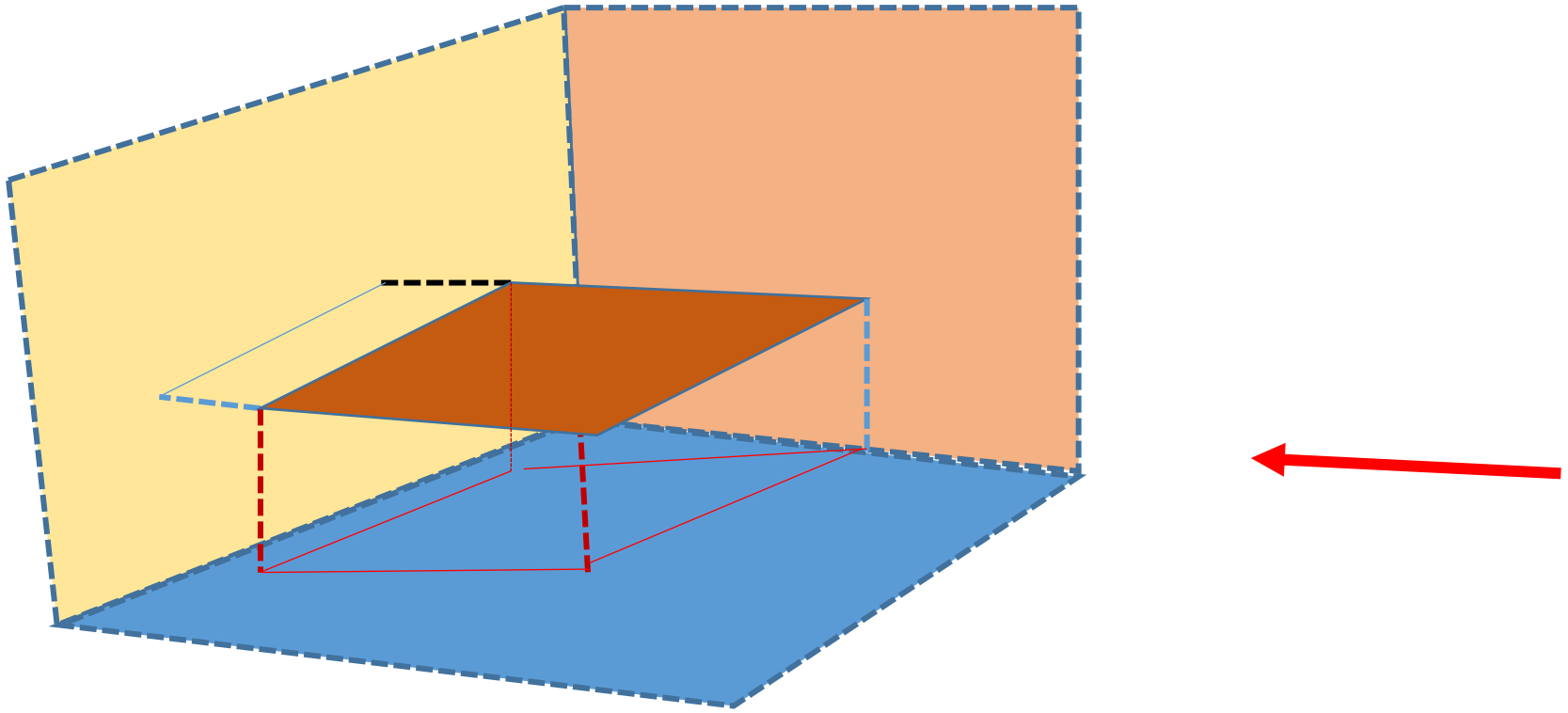
Projection of Plane

1. Plane is area inscribed by lines
2. Plane are two types: (a) perpendicular plane (b) oblique plane
   a) Perpendicular planes
      I. Perpendicular to both planes
      II. Perpendicular to one plane and parallel to other
      III. Perpendicular to one plane and inclined to other
   b) Oblique plane: plane has its surface inclined to one plane and an edge or a diameter or a diagonal parallel to that plane and inclined to other plane.

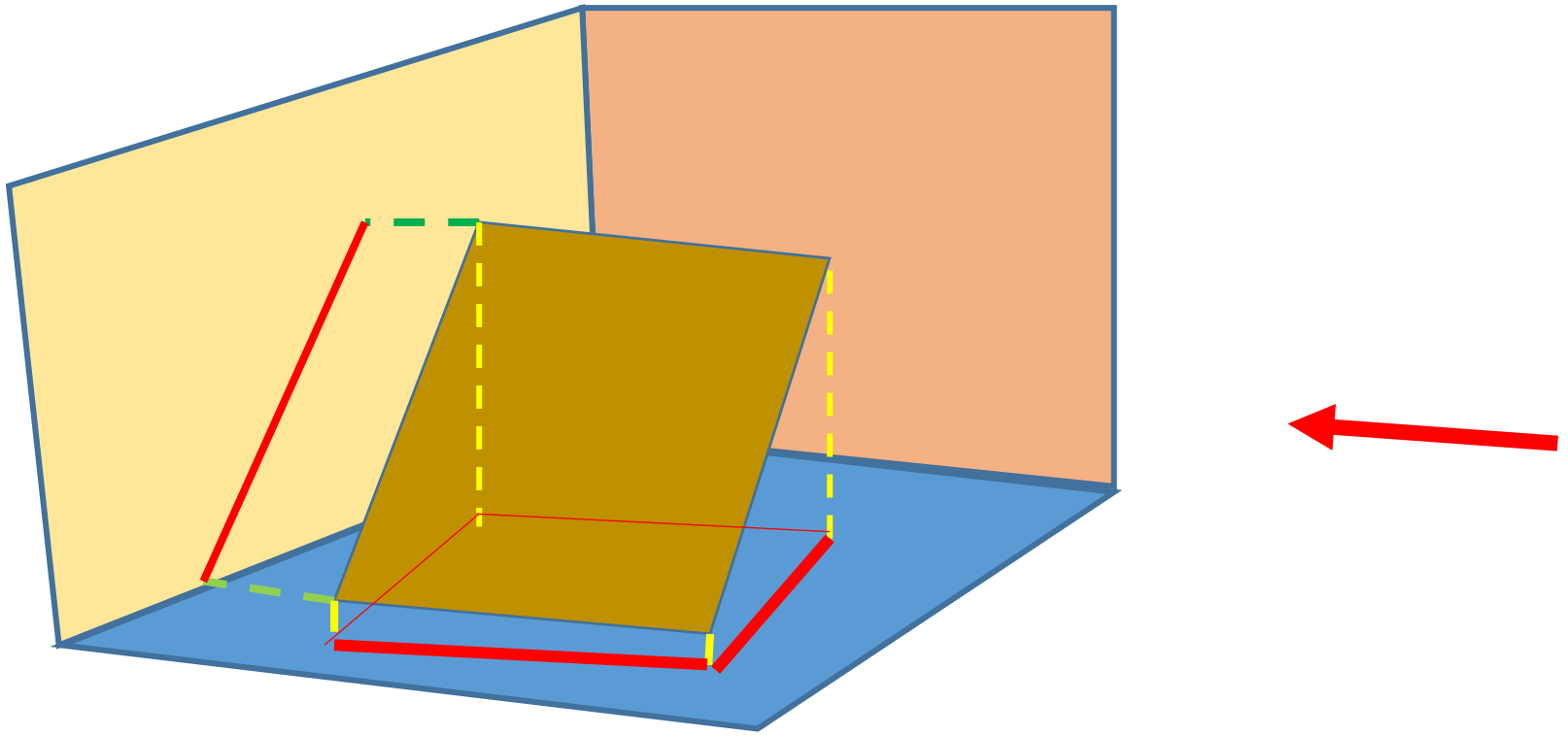
Plain perpendicular to HP and VP



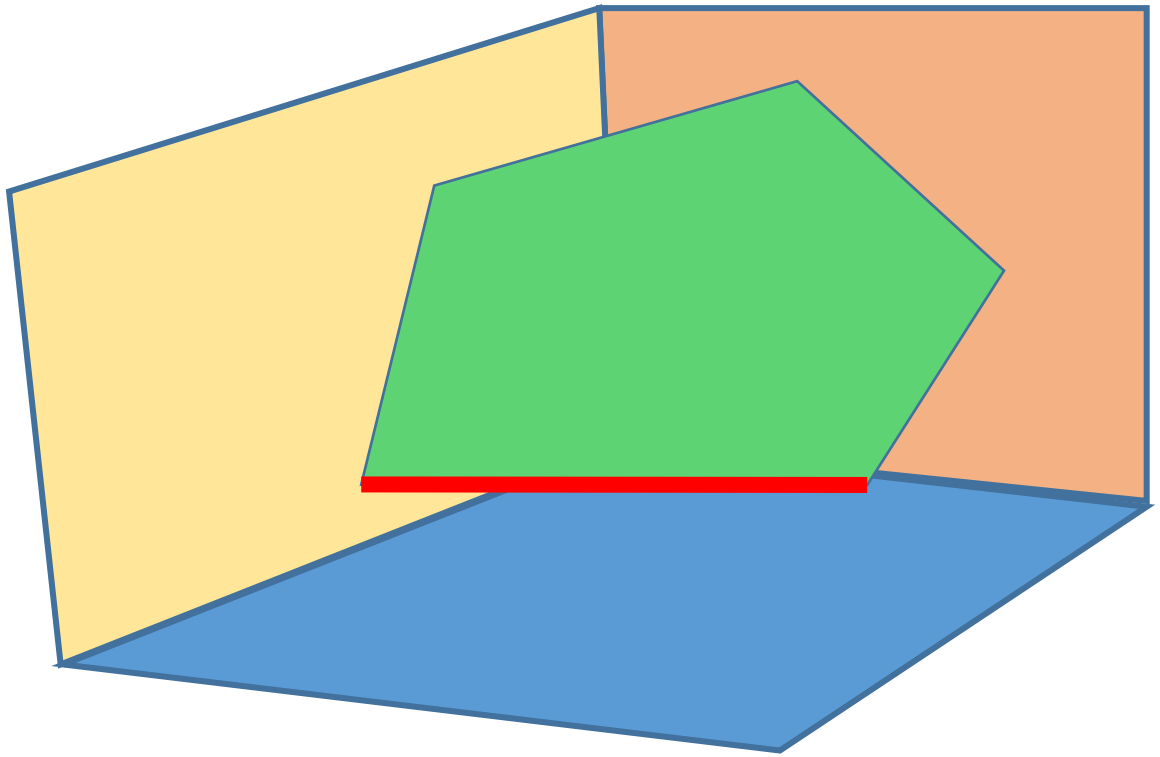
Plain Parallel to HP and perpendicular to VP



Plain inclined to HP and perpendicular to VP



Base line inclined to VP and plain inclined to HP



Exercise

1. An equilateral triangle of 50 mm side has its VT parallel to and 25 mm above xy. It has no HT. draw its projection when one of its sides is inclined at 45° to the VP.
2. A regular pentagon of 25 mm side has one end on the ground. Its plain is inclined at 45° to the HP and perpendicular to the VP draw its projections.
3. Draw the projections of a regular hexagon of 25 mm side having one of its sides in the HP and inclined at 60° to the VP and its surface making an angle of 45° with the HP.

Solid Projection

- Prism: having two equal and similar faces parallel to each other called its base and other faces are parallelogram.
- Pyramid: having one base and faces are triangular shapes
- Solid of revolution: Cylinder, cone sphere

- Positions of Solid in quadrants on the basis of their axis

a) Axis perpendicular to one of plain
b) Axis parallel to both plain
c) Axis incline to one plain and parallel to other
d) Axis inclined to both the plains

Exercise

1. A square pyramid base 40 mm side and 65 mm long has its base in the VP. One edge of base is inclined at 30° to the HP and a corner contained by that edge on the HP. Draw its projection