

Engineering Graphics Important Questions

Note: Shape, Size & Conditions may change in Actual Semester Exam

Understand the concept

UNIT-1

Geometric constructions, Conic sections,

1. Draw a parabola given that the distance between the directrix and focus is 4cm, Draw tangent and normal to the curve at any point on the curve.
2. When cricket a ball was thrown, it reached a maximum height of 7 m and fell on the ground at a distance of 16 m from the point of projection. Draw the path of the ball, calculate the angle of projection and name the curve.
3. Draw a straight-line AB of any length. Mark a point F, 65 mm from AB, take $e=2/3$ name the curve. Draw a normal and tangent to the curve at a point 50 mm from F.
4. To construct an ellipse when the distance of the focus from the directrix is equal to 50 mm and eccentricity is $2/3$
5. To construct a parabola, when the distance of the Focus from the directrix is 50 mm
6. Construct a hyperbola, from the directrix is 65 mm and eccentricity is $3/2$?
7. To construct a regular Hexagon given the length of its side 50 mm using general method.
8. To construct a regular Pentagon given the length of its side 60 mm using general method
9. Construct a regular Pentagon having its side of 55 mm using a) arc method b) Circular method.
10. Construct a regular Hexagon having its side 50 mm using a) arc method b) circular method
11. Circumscribe a circle having regular pentagon of radius 40 mm?
12. Draw Hexagon outside a circle of diameter 50mm?
13. Inscribe a regular a) Hexagon b) Pentagon in a circle of diameter of 55 mm ?

Cycloidal and Involute curves

1. A wheel of 50 mm diameter rolls without slipping on a straight flat surface. Trace the locus of the point of contact for one complete revolution of the wheel.
2. Involute Profile for **TRIANGLE, CIRCLE, PENTAGON**

UNIT-2

Projection of Points and Projection of Planes

1. Draw the orthographic projections of the following points? (a.) Point P is 30 mm. above H.P and 40 mm. in front of VP (b.) Point Q is 25 mm. above H.P and 35 mm. behind VP (c.) Point R is 32 mm. below H.P and 45 mm behind VP (d.) Point S is 35 mm. below H.P and 42 mm in front of VP (e.) Point T is in H.P and 30 mm behind VP (f.) Point U is in V.P and 40 mm. below HP (g.) Point V is in V.P and 35 mm. above H.P (h.) Point W is in H.P and 48 mm. in front of VP
2. An 80mm long line AB is inclined at 30 deg to V.P and is parallel to H.P. The end A is 20mm above the H.P and 20mm in front of the V.P, draw the projection of the line.

3. A line AB 60mm long is situated in H.P and inclined to V.P at 30 deg. The end A is 20mm in front of V.P, draw the projection of line.
4. Draw the projections of 70mm long line AB situated in the V.P and inclined at 30 deg to H.P. The end A is 25 mm above H.P.
5. A 70mm long line AB has an end A at 20mm above H.P and 30mm in front of V.P. The line is inclined at 45 deg to the H.P and 30 deg to V.P, draw the projections.
6. A line AB, 70mm long, has its end A 15mm above HP and 20mm in front of VP. It is inclined at 30° to HP and 45° to VP. Draw its projections and mark its traces
7. The top view of a 75mm long line AB measures 65mm, while its front view measures 50mm. Its one end A is in HP and 12mm in front of VP. Draw the projections of AB and determine its inclination with HP and VP
8. A line AB, 65mm long has its end A 20mm above H.P. and 25mm in front of VP. The end B is 40mm above H.P. and 65mm in front of V.P. Draw the projections of AB and shows its inclination with H.P.
9. A line AB, 90mm long, is inclined at 30 to the HP. Its end A is 12mm above the HP and 20mm in front of the VP. Its FV measures 65mm. Draw the TV of AB and determine its inclination with the VP.

UNIT-3

PROJECTION OF PLANES

1. A Hexagonal plane with a 30mm side has its surface parallel to and 20mm in front of the VP. Draw it's Projections, when (a) a side is perpendicular to HP (b) a side is parallel to the HP (c) Side is inclined at 45° to the HP
2. Rectangle 30mm and 50mm sides is resting on HP on one of its small side which is 300 inclined to VP, while the surface of the plane makes 45° inclination with HP. Draw it's projections?
3. A regular pentagon of 30 mm sides is resting on HP, on one of it's sides with it's surface 45° inclined to HP. Draw it's projections when the side in HP makes 30° angle with VP?
4. A regular pentagon of 30 mm sides is resting on HP on one of it's sides while it's opposite vertex (corner) is 30 mm above HP. Draw projections when side in HP is 30° inclined to VP
5. A circle of 50 mm diameter is resting on HP on end A of it's diameter AC which is 30° inclined to HP while it's TV is 45° inclined to VP. Draw it's Projections?

PROJECTION OF SOLIDS

1. A pentagonal Prism having a base with 30 mm side and 60mm long Axis, has one of It's bases in the VP. Draw Its projections When (a) rectangular face is parallel to and 15 mm above the HP (b) A rectangular face perpendicular to HP and (c) a rectangular face is inclined at 45° to the HP
2. An Hexagonal Prism, having a base with a 30 mm side and 65 mm long axis, has an edge it's base in the VP Such that the axis is inclined at 30° to the VP and Parallel to the HP. Draw its Projections?
3. A cube of 50 mm long edges is so placed on HP on one corner that a body diagonal is Parallel to HP and perpendicular to VP. Draw it's projections.

4. A cone 40 mm diameter and 50 mm axis is resting on one of its generator on HP which makes 300 inclinations with VP. Draw it's projections?
5. A cylinder 40 mm diameter and 50 mm axis is resting on one point of a base circle on VP while it's axis makes 45° with VP and FV of the axis 35° with HP. Draw its projections.

UNIT-4

Section of Solids

1. A square pyramid, base 40 mm side and axis 65 mm long, has its base on the HP with two edges of the base perpendicular to the VP. It is cut by a section plane, perpendicular to the VP, inclined at 45° to the HP and bisecting the axis. Draw its sectional top view, sectional side view and true shape of the section.
2. A square pyramid, base 40 mm side and axis 65 mm long, has its base on the HP and all the edges of the base equally inclined to the VP. It is cut by a section plane, perpendicular to the VP, inclined at 45° to the HP and bisecting the axis. Draw its sectional top view, sectional side view and true shape of the section
3. A Cone base 75 mm diameter and axis 80 mm long is resting on its base on H.P. It is cut by a section plane perpendicular to the V.P., inclined at 45° to the H.P. and cutting the axis at a point 35 mm from the apex. Draw the front view, sectional top view, sectional side view and true shape of the section.
4. A cone, base 45 mm diameter and axis 55 mm long is resting on the H.P. on its base. It is cut by a section plane, perpendicular to both the H.P. and the V.P. and 6 mm away from the axis. Draw its front view, top view and sectional side view.

Development of Surfaces

1. A pentagonal prism , 30 mm base side & 50 mm axis is standing on Hp on it's base with one side of the base perpendicular to VP. It is cut by a section plane inclined at 40° to the HP, through mid-point of axis. Draw Fv, sec.Tv & sec. Side view. Also draw true shape of section and Development of surface of remaining solid.
2. A square pyramid, base 40 mm side and axis 65 mm long, has its base on the HP and all the edges of the base equally inclined to the VP. It is cut by a section plane, perpendicular to the VP, inclined at 45° to the HP and bisecting the axis. Draw its sectional top view, sectional side view and true shape of the section. Also draw its development.
3. draw the projections of a cone resting on the ground on its base and show on them, the shortest path by which a point P, starting from a point on the circumference of the base and moving around the cone will return to the same point. Base of cone 65 mm diameter ; axis 75 mm long.

UNIT – 5

ISOMETRIC VIEWS

1. Draw isometric view of a hexagonal prism having a base with 30 mm side and a 70mm long axis resting on its base on the HP. With an edge of the base parallel to the VP
2. Draw an isometric view of a cylinder, with a 50mm base diameter and a 70mm long axis when (a) The base is on the HP (b) when one of the generators is on the HP?
3. Draw an isometric view of a pentagonal pyramid having a base, with a 30 mm side and 50mm long axis (a) when the its axis is vertical
4. Draw an isometric view of Cone with a base diameter is 50 mm side and 70mm long axis (a) when the base is on the HP (b) when the base is on the VP?
5. Draw an isometric view of Frustum of Hexagonal Pyramid having 35 mm base side 20 mm top side and 80mm long axis, resting on its base on the HP with an Edge of the base parallel to the VP?
6. Draw an isometric view of Frustum of Cone with a 60 mm base diameter, 40 mm Top diameter and 70mm long axis, resting on its base on the HP?
7. Draw the isometric view of the given orthographic projection of the object?

