Q1. What are Scale? Classify its different types, also describe how RF is calculated.

Q2. A rectangular plot of land arca 0.45 hectare, is represented on a map by a similar rectangle of 5 sq. cm. Calculate the RF of the map, Also draw a scale to read up to single metre from the map, the scale should be long enough to measure up to 400 metres.

Q3. An inelastic string is unwound to a length of 122 mm from a drum of 30 mm. Draw the locus of free end of the string which is held taut during unwinding.

Q4. The projections a'b' and ab of a line AB are 65 mm and 50 mm long, respectively. The midpoint of the line is 38 mm in front of VP and 30 mm above HP. End A is 10 mm in front of the VP and nearer to it. End B is nearer to the HP. Draw the projections of the line, find its true length.

Q5. A regular hexagonal lamina 40 mm side has a square hole of 25 mm side centrally cut through it. Draw its projections when it is resting on one of its sides on HP with its surface inclined at 60° to VP and its corner nearest to VP is 24 mm from VP.

Q6. A triangular prism of side of base 30 mm and axis 55 mm long lies on one of its rectangular faces in HP with its axis parallel to VP. Draw its Projection.

Q7. A right regular square pyramid, edge of base 35 mm and height 50 mm, rest on its base on HP with its base edges equally inclined to VP. A section plane perpendicular to VP and inclined to HP on 32°, cuts the pyramid bisecting its axis, Draw the projections and true shape of the section of truncated pyramid.

Q8. Develop the lateral surface of an oblique cone, diameter of the base 40 mm and height 40 mm having its axis inclined at 60° to its base.

Q9. A right circular cone, diameter of base 50 mm and axis 62 mm long, rest on its base rim on HP with its axis parallel to VP and one of the elements perpendicular to HP. Draw the projections.

Q10. A cube 30 mm edge is placed centrally on the top of a cylindrical block of 52 mm and 20 mm height. Draw the isometric drawing of the solid.

Q11. Explain the purpose of Zoom Command.

Q12. Write short note on:
i) View ports
ii) Layering concept
iii) Type of projections

Q13. An area of 144 sq cm on a map represents an area of 36 sq km on the field. Find the RF of the scale of the map and draw a diagonal scale to show km, hectometres and decametres and to measure up to 10 km. indicate on the scale a distance 7 km, 5 hectometres and 6 decimeters

Q14. Construct a conic when the distance of its focus from its directrix is equal to 50 mm and its eccentricity is 2/3. Name the curve; mark its major axis and minor axis. Draw a tangent at any point, P on the curve.

Q15. The length of the front view of a line CD which is parallel to HP and inclined 30° to VP is 50 mm. The end of the line is 15 mm in front of VP and 25 mm above HP. Draw the projections of the line and find its true length.

Q16. A line PS 65 mm has its end P, 15 mm above the HP and 15 mm in front of the VP. It is

inclined at 55° to the HP and 35° to the VP. Draw its projections.

Q17. Draw the isometric view of a hexagonal prism having side of base 25 mm and axis 65 mm long resting on its base on HP.

Q18. A right circular cone of axis height 80 mm is resting on one of its generators in HP. Draw its projections. The base is 40 mm dia.

Q19. Explain the different methods used for drawing a circle in AutoCAD.

Q20. Give some examples where the layering concept is useful to use.

Q21. Name and explain five edit commands used in CAD.

Q22. Explain the various advantages of CAD.

Q23. What is the use of UCS icon ? Explain in detail?

Q24. Write about Dialog boxes and windows in CAD software.

Q25. Explain the various commands used for transformation of an object.
i) Move
ii) Copy
iii) Rotate
iv) Mirror

Q26. Explain the different methods used for drawing a circle in AutoCAD.

Q27. Write short notes of the following.
i) Isometric projection
ii) Epicycloid
iii). Basic drawing command

Q28. Construct a forward reading vernier scale to read distance correct to decimetre on a map in which the actual distances are reduced in the ratio of 1: 40000. The scale should be long enough to measure upto 6 km. Mark on the scale a length of 3.34 km and 0.59 km.

Q29. Construct a hypocycloid, rolling circle 50 mm diameter and directing circle 175 mm diameter. Draw a tangent to it at a point 50 mm from the centre of the directing circle.

Q30. A line AB of 70 mm long has its end A at 10mm above H.Pand 15 mm in front of V. P. Its front view and top view measure 50 mm and 60mm respectively. Draw the projections of the line and determine its inclinations with H.P. and V.P.

Q31. A line AB, 60mm long has its end A 15 mm above HP and 10mm in front of V. P. It is inclined at 45° to the HP and 30° to V.P. Draw it’s projections.

Q32. Draw the isometric projections of the frustum of a cone of 50mm base diameter, 25mm top diameter and 60mm height.

Q33. Draw the isometric view of a hexagonal prism having side of base 25mm and axis 65mm long resting on its base on HP.

Q34. Explain the layering concept with examples. How is it implemented into CAD software?

Q35. Differentiate between the first angles and third angles projection.

Q36. How do you specify a plotter for graphics applying ?

Q37. What is CAD ? Name two CAD Softwares. Give advantages and disadvantages of using CAD.

Q38. Explain the method of drawing wireframe models of the following objects.
i) Cone
ii) Pyramid
iii) Prism

Q39. Prepare an ellipse using four different methods in AutoCAD.

Q40. Explain about Building Information Modeling (BIM).

Q41. Write short notes of the following.
i) Types of scales
ii) Editing commands in CAD
iii) Orthographic projection