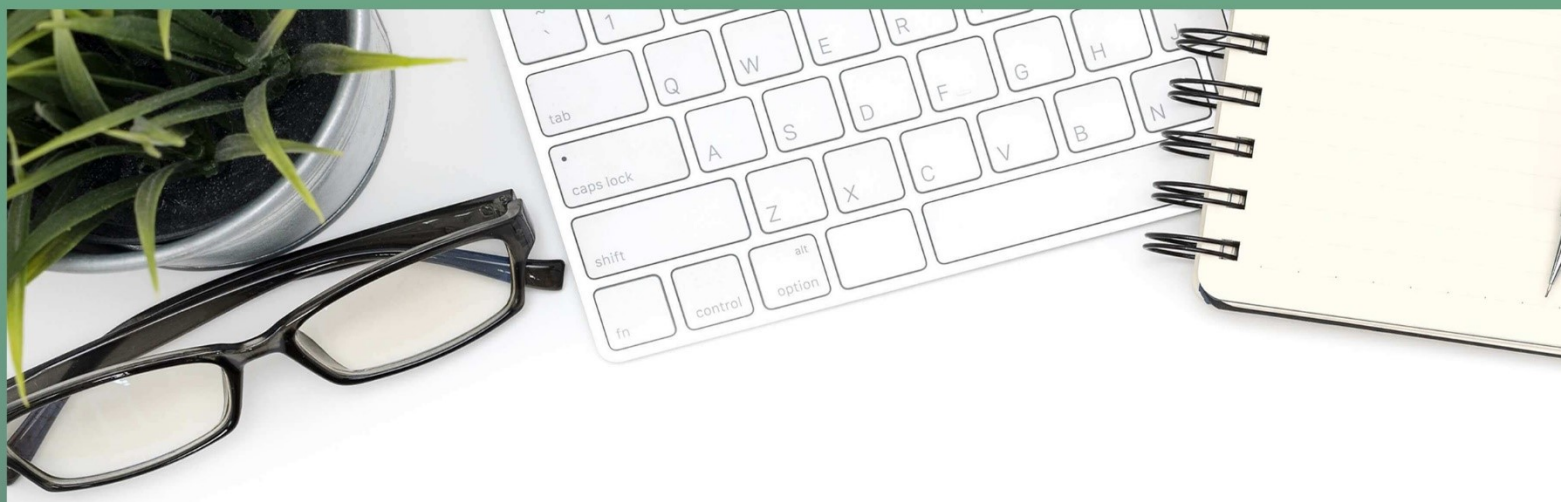

75+ Engineering Drawing Questions PDF for RRB ALP Stage II Exam

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1. Which of the following statements are correct?
   I. The length of A2 size drawing sheet is equal to the width of A1 size drawing sheet.
   II. For technical drawing, harder grades of pencils are preferred.
   A. Only I B. Only II
   C. Both D. None

Ans. C

Sol. Length of A2 size drawing = 594 mm.
Width of A1 size drawing sheet = 594 mm
Hence, given statement is true.
For technical drawing, three grades of pencils are used. Those are H, 2H, HB. All these are hard grades pencils.

2. Which of the following statements are correct?
   I. A D2 size drawing board has dimensions of 920 mm × 650 mm.
   II. A title block is placed at bottom right corner of the drawing frame.
   A. Only I B. Only II
   C. Both D. None

Ans. B

A D2 size drawing board has dimensions of 650 mm × 470 mm. The given size in the question is of D1 drawing board.
A title block is placed at bottom right corner of the drawing frame and it is divided into two zones.
   i. Part identification zone.
   ii. Additional information zone.

3. To draw a circle of diameter 20 mm, the most preferred instrument is
   A. large compass
   B. bow pencil compass
   C. circle template
   D. any of the above

Ans. B

Sol. Bow compasses are suitable to draw circles or arcs using pencil. To draw a circle of diameter smaller than 25 mm bow pencil compass is preferred.

4. A French curve is used to draw
   A. polygons
   B. circles
   C. ellipses
   D. smooth freeform curves

Ans. D

Sol. French curves is used to draw smooth freedom curves.

5. Which of the following statements are correct?
   I. Dashed lines are used to show outlines of the adjacent part.
   II. A phantom line is used to indicate alternate positions of the part.
   III. The width of all the letters in one line is kept same.
   A. I and II B. II and III
   C. I and III D. Only II

Ans. D

Sol. A dashed line is used to show either hidden lines or edges, depending upon its thickness. To show outlines of the adjacent parts, phantom narrow line is used. Hence statement I is wrong.
A phntom line is nothing but a long dashed dotted narrow line which is used to indicate either locus line or a hernative and extreme position of movable parts or outlines of adjacent parts. Hence statement II is correct.
The line width of a letter depends on its height. Large – sized letters have more line thickness than small – size letters. Hence statement III is wrong.

6. Which of the following statements are correct?
   I. Thick lines in the group 0.25 are drawn 0.75 mm thick.
   II. To draw section lines, continuous thin lines are used.
   III. Gothic letters have a uniform line width for all the parts of a letter.
   A. I and II B. II and III
   C. I and III D. All of these

Ans. B

Sol. For a line group 0.25, the line widths (in mm) is 0.13 (thin), 0.25 (medium), 0.5 (thick). Hence statement I is false.
Section (hatching) lines are drawn using thin continuous line of 0.13 mm. Hence statement II is correct.
Gothic lettering has a uniform line width for all the parts of a letter. It may be single stroke of double storke and vertical or inclined. Hence statement III is true.

7. IS 10714 : 2001 refers to
   A. scales
   B. lines
   C. lettering
   D. projection methods

Ans. B

Sol. IS 10714 : 2001 and SP46-2003 is a BIS code which refers to lines for technical drawings.

8. Which of the following ISs provides the guidelines for dimensioning on technical drawings?
   A. IS 10714 : 1983
   B. IS 11669 : 1986
   C. IS 10711 : 2001
   D. IS 1444 : 1989

Ans. B

Sol. IS 11669 – 1986 and SP 46-2003 is a BIS code which refers general principles of Dimensioning of technical drawing.

9. Centreline is used to indicate
   A. axis of cylinder
   B. centerline of the hole
   C. axis of symmetry
   D. all of the above

Ans. D

Sol. Centreline is used generally to indicate the locus of centre of an object. Hence it cann indicate axis of cylinder, Centreline of the hole, axis of symmetry etc. It is denoted using chain narrow (thin) line.

10. A short break line is used to indicate a
   A. broken part
   B. part to be broken
   C. long part of uniform cross section
   D. short part of non-uniform cross section

Ans. C

Sol. A short break line is used to indicate long part of uniform cross section and is generally represented by using continuous freehand narrow (thin) line.

11. The preferred line width for letter group of 7 mm is
   A. 1 mm B. 0.7 mm
   C. 0.5 mm D. 0.25 mm

Ans. C

Sol. The preferred line width for letter group of 7 mm is 0.5 mm.
Note :
(1) For 10 mm group, it is 0.7 mm
(2) For 5 mm group, it is 0.35 mm

12. The type of line used to indicate a cutting plane is
   A. dashed
   B. long dashed dotted
   C. long dashed double dotted
   D. continuous freehand

Ans. B

Sol. A cutting plane is preferably indicated using long dashed dotted narrow (chain narrow) line.

13. Which of the following statements are correct?
   I. In the aligned system of dimensioning, the dimensions are placed near the middle of a dimension line by interrupting it.
   II. Dimension lines should not cross each other and other lines of the object.
   III. The note '5 × ϕ10' means five holes of diameter 10 units each.
   IV. To indicate the metric threads, the nominal diameter should be preceded by 'M'.
   A. I, II and III B. II, III and IV
   C. I, III and IV D. All of these

Ans. B

Sol. In aligned method, dimension should be placed parallel to and above their dimension lines and preferably at the middle and clear of the line without interrupting it. Hence statement I is false.

A dimension line is a continuous narrow line, drawn parallel to edge or surface whose measurement should be shown and should not cross each other lines of the object. Hence statement II is correct

The note '5 × ϕ10' means five holes of diameter 10 units each. In some cases it may be denoted as "5 holes, ϕ10". Hence statement III is correct.

In either case of metric threads (external or internal), the nominal diameter is preceded by symbol 'M'. Hence statement IV is correct.

14. If all the horizontal or vertical dimensions of the object start from a common extension line situated at one end, the way of dimensioning is called
    A. chain dimensioning
    B. parallel dimensioning
    C. combined dimensioning
    D. none of the above

Ans. B

Sol. In parallel or progressive dimensioning, placement of a number of single dimension lines parallel to one another starting from a common extension line situated at one end is done. Smaller dimensions are always placed neares the view.

15. The symbol 'Sϕ' indicates
    A. sectional diameter
    B. spherical diameter
    C. squared diameter
    D. straight diameter

Ans. B

Sol. The symbol Sϕ indicates the diameter of a sphere.

16. The abbreviation CSK stands for
    A. conical shaft
    B. cylindrical shaft
    C. counterbore
    D. countersunk

Ans. C

Sol. Diameter is indicated as ϕ.

Depth is indicated as DEEP.

Therefore for the hole of 40 unit diameter and 60 unit depth, it is indicated as ϕ40, DEEP60.

17. The abbreviation 'SF' stands for
    A. spot face B. spherical face
    C. counterbore D. spherical finish

Ans. A

Sol. Abbreviation 'SF' stands for spot face. 'SF' sometimes also represented as S'FACE.

18. Which of the following statements are correct?
    I. Knowledge of geometrical constructions is essential in designing the specific profiles on the objects.
    II. The internal angle of pentagon is 120°.
    A. Only I B. Only II
    C. Both D. None

Ans. A

Sol. Knowledge of geometrical constructions is essential in designing the specific profiles on the object. Hence statement I is correct.

For a regular polygon, each interior angle is given as $\left(\frac{n-2}{n}\right)\times 180^\circ$, where n is total number of sides of the regular polygon. Here n = 5 (for pentagon) 80, each interior angle is 108°. Hence statement II is wrong.

Note :

(1) Each exterior angle $= \frac{360^\circ}{n}$.

(2) Sum of exterior angle = 360°.

(3) Sum of interior angle = 180° × (n-2)

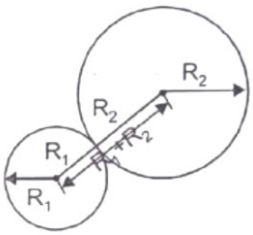
19. Which of the following statements are correct?
    I. The perpendicular bisector of any chord of a circle passes through the centre of the circle.
    II. A regular pentagon cannot be inscribed exactly in a given circle.
    III. The shortest distance between the centres of two circles tangent to each other is always equal to the sum of their radii.
    A. Only I B. I and II
    C. II and III D. I and III

Ans. A

Sol. The perpendicular bisector of the chord of an arc/circle always passes through the centre of the arc/circle. Hence statement I is correct.

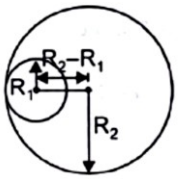
A regular pentagon can be inscribed exactly in a given circle. Hence statement II is correct. Statement III is wrong.

Case I : Circle touching externally.



Shortest distance between the centres = $R_1 + R_2$

Case II : Circle touching internally.



Shortest distance between the centres = $R_2 - R_1$

So, given statement is false because it has not mentioned how it touch each other.

20. In a big circle, three small circles of equal size are drawn. Each of the small circles is tangent to the big circle and the other two circles. Which of the following sentences is correct?
    A. The centres of the small circles lie along a diameter of big circle.
    B. The centres of the small circles lie at the corner of an equiliateral triangle.
    C. The distance between the centre of any two small circles is equal to the radius of the big circle.
    D. One of the small circles will be concentric with the big circle.

Ans. B

Sol. From the figure drawn above, it is quite apparent that the centres of the small circles lie at the corner of an equilateral triangle.

21. Which of the following statements are correct?
    I. To draw the drawing of a multistoried building.
    II. LOS is equal to the product of RF and LC.
    III. A plain scale gives distances in a unit and its immediate two sub-units.
    A. Only I B. II and III
    C. I and III D. All of above

Ans. A

Sol. To draw the drawing of a multistories building, reduction scales should be used. Reducing scales are mentioned in the 1 : Y, where Y > 1. Hence, RF < 1. Other objects that used RF < 1 are bridges, huge machinery, ships, aeroplanes etc. Hence statement I is correct Length of scale,

LOS = RF × minimum distance to be represented. Hence statement II is false.

A plain scale is used to indicate the distances in a unit and its immediate subdivision, whereas a vernier scale and diagonal scale indicate the distances in a unit and its immediate two subdivion. Hence statement III is false.

22. Which of the following statements are correct?
    I. A diagonal scale is based on the similarity of triangles.
    II. For backward vernier scale, LC = MSD – VSD.
    III. All the divisions on the base of a scale of chords (i.e., linear degree scale) are equal.
    A. Only I B. II and III
    C. I and III D. All of above

Ans. A

Sol. A diagonal scale is based on the similarity of triangles. Hence statement I is true.

A vernier scale is a backward vernier scales if VSD > MSD and its least count is given by LC = VSD – MSD. Hence statement II is false.

All the divisions on the base of a scale of chords are not equal but decreases gradually from one end to other. Hence statement III is correct.

23. Which of the following statements are correct?
    I. Scale of chords measures the angles based on the length of chords of a circle.
    II. Reducing scales are expressed in the format Y : 1, Y being greater than 1.
    A. Only I B. Only II
    C. Both D. None

Ans. A

Sol. Scale of chords measures the angles based on the length of chords of a circle. Hence statement I is correct.
Reducing scales are mentioned in the format 1 : Y, Y > 1. Y : 1 format is for enlargement scale. Hence statement II is wrong.

24. Which of the following statements are correct?
    I. Measurement of the distances is simpler in a diagonal scale than in a vernier scale.
    II. In a diagonal scale, a horizontal subdivision represents y cm. If there are n vertical divisions, then LC of the scale is equal to y/n cm.
    A. Only I B. Only II
    C. Both D. None

Ans. C

Sol. Measurement of the distances is simpler in a diagonal scale then in a vernier scale. Hence statement I is correct.
If in the diagonal scale, horizontal subdivision represents y cm. Then to get LC of the scale, it is divided into n equal parts so that LC = y/n cm. Hence is statement II is correct.

25. In a scale, 1 cm represents 1 m. Its RF is
    A. 1/1000 B. 1/100
    C. 1/10 D. 1/10000

Ans. B

Sol. Mathematically,

$$RF = \frac{\text{drawing size of an object}}{\text{its actual size}}$$

(in same units)

$$\Rightarrow \quad RF = \frac{1\text{ cm}}{100\text{ cm}} = \frac{1}{100}$$

$$\therefore \quad RF = \frac{1}{100}$$

26. The size of the drawing drawn to scale 2 : 1 will be _____ the actual size of the object.
    A. same as B. twice of
    C. half of D. can't tell

Ans. B

Ans. Scale = 2 : 1

$$\Rightarrow \quad RF = \frac{2}{1} = \frac{\text{drawing size of an object}}{\text{actual size}}$$

⇒ 2 (actual size) = drawing size of an object

27. The information needed to construct any scale (except the scale of chords) is
    A. RF of the scale
    B. Unit of measurement
    C. Maximum distance to be represented
    D. All of the above

Ans. D

Sol. The information needed to construct any scale (except the scale of chords) is
    a. RF of the scale (= 1, > 1, < 1)
    b. Units of measurement (mm, cm, etc.)
    c. Maximum distance to be represented

28. If an area of Y^2 is represented by an area of X^2 on drawing, then the RF is equal to
    A. X/Y B. X^2/Y^2
    C. $\sqrt{X}/\sqrt{Y}$ D. $\sqrt{X^2}/\sqrt{Y^2}$

Ans. D

Sol.
$$RF = \frac{\text{size of an object}}{\text{actual size}}$$
$$= \sqrt{\frac{\text{area of drawing}}{\text{actual area}}}$$
$$= \sqrt[3]{\frac{\text{volume of drawing}}{\text{actual volume}}}$$

Here,
Area of drawing = X^2
Actual area = Y^2

$$\therefore \quad RF = \frac{\sqrt{X^2}}{\sqrt{Y^2}}$$

29. The scale used for angular measurement is
    A. plain scale
    B. vernier scale
    C. diagonal scale
    D. None of the above

Ans. D

Sol. Scale of chords is used for angular measurement.

30. Which one of the following is not a reduction scale?

A. 1 : 200 B. 5 : 6

C. 1 : 1 D. 3/250

Ans. C

Sol. For reduction scale, SCALE 1 : Y ; Y > 1

From the options, only (C) is not reduction scale as it is a full size scale (SCALE 1 : 1)

31. Which of the following sentence is CORRECT about comparative scales?

A. RF of both the scales is same

B. LOS for both the scales is same

C. LC of both the scales is same

D. All of the above

Ans. A

Sol. For comparative scales, RF of both the scales is same.

32. Which of the following sentence is CORRECT about the forward vernier scale?

A. LC = MSD – VSD

B. MSDs and VSDs are numbered in the same direction

C. The 0th mark is on the left end of the main scale

D. Length of vernier > length of a main division

Ans. D

Sol. A. For forward vernier scale, LC = MSD – VSD; MSD > VSD. So option (a) is correct.

B. MSDs and VSDs are numbered in the same direction. Hence, option (b) is also correct.

C. The 0th mark is on the left end of the main scale. So option (c) is also correct.

D. In vernier scale,

$$n\ VSD = (n-1)MSD$$

$$\Rightarrow \quad VSD = \left(1-\frac{1}{n}\right)MSD$$

$\Rightarrow$ Length of vernier < length of main division Hence, option (d) is wrong.

33. A diagonal scale of RF 10 is constructed to measure maximum distance of 10 mm. The LC of this scale would be

A. 0.01 mm B. 0.1 mm

C. 1 mm D. 10 mm

Ans. A

Sol. Given RF = 10

Maximum distance = 10 mm

$$\therefore \quad RF = \frac{\text{distance on drawing}}{\text{actual/maximum distance}}$$

$$\Rightarrow \quad 10 = \frac{x}{10}$$

$$\Rightarrow \quad x = 100 \text{ mm}$$

$$\therefore \quad LC = \frac{1}{x} = \frac{1}{100} = 0.01 \text{ mm}$$

34. Which of the following statements are correct?

I. A helix is a 2D locus.

II. A line joining the midpoint of any two parallel chords of a parabola is parallel to its axis.

III. An oblique hyperbola will have the angles between its asymptotes less than 90°.

A. Only I B. II and III

C. I and III D. All of above

Ans. B

Sol. A helix is defined as a curve generated by a point moving around and along the surface of a right circular cylinder or cone with uniform angular velocity about the axis and with a uniform linear velocity in the direction of the axis. So, since cylinder or cone is a 3D object hence its locus is also 3D as per definition.

Alternate :

If a point moves in a plane, locus is a line curve or a 2D curve. EX. : line, circle

If a point moves in space not in particular plane, locus is a space curve or a 3D curve. EX.: helix. Hence statement I is false.

The line joining the midpoint of any parallel chords of a parabola is parallel to its axis. Hence statement II is true.

An oblique hyperbola will have the angle between its asymptotes less than 90°. Hence statement III is correct.

35. Which of the following statements are correct?

I. Two normal can be drawn at any point on a Archimedean spiral.
II. The locus of a point equidistant from a fixed line is a line perpendicular to the fixed line.
III. The study of loci of points is needed in designing electronic circuits.

A. I and II B. II and III
C. I and III D. None

Ans. D

Sol. Only one normal can be drawn at any point on an Archimedean spiral. Hence statement I is wrong.

The locus of a point equidistant from a fixed line may or may not be perpendicular to the fixed line. Hence statement II is wrong.

The study of loci of points is needed in designing the mechanisms and analyzing the design related problems in mechanical engineering. Hence statement III is wrong.

36. A gear tooth profile is in the form of

A. parabola B. involute
C. spiral D. helix

Ans. B

Sol. A gear tooth profile is in the form of an involute.

37. Name the curve traced out by a point moving in a plane such that the difference between its distances from two fixed points is constant.

A. Ellipse B. Parabola
C. Hyperbola D. Any of these

Ans. D

Sol. An involute is a curve traced by the free and of a string when unwound itself from a circle or a polygon provided string is always tight.

38. Which of the following statements are correct?

I. The plane on which an object's view is obtained is called the POP.
II. A multi-view orthographic projection is a type of convergent projection.
III. In cabinet projection, the receding lines are drawn to half of their actual lengths.

A. Only I B. II and III
C. I and III D. All of the above

Ans. C

Sol. Plane of projection or projection plane is a transparent plane on which the object's view is obtained. Hence statement I is correct.

A multi-view orthographic projection requires mutually perpendicular plane to obtain FV, TV and SV on VP, HP and PP respectively. It requires the ray of vision parallel to each other but perpendicular to the projection plane. Hence statement II is wrong.

The cabinet projection is a kind of oblique projection which is at certain angle to the projection plane and lines perpendicular to the viewing surface are projected at half their actual length. Hence statement III is correct.

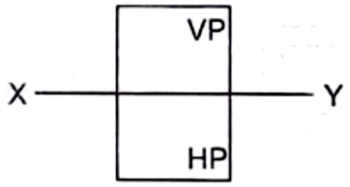
39. Which of the following statements are correct?

I. A horizontal reference line, XY, is an intersection of an object's surface surface with the HP.
II. To draw the TV of an object, the HP is always rotated in a clockwise direction.
III. In the first-angle method of projection, the FV is always drawn below XY.

A. I and II B. Only II
C. II and III D. All of the above

Ans. B

Sol. Consider 1st angle projection, the line at which the VP and HP meet is called as horizontal reference line denoted by XY. Hence statement I is false.



For any angle projection, HP is always rotated clockwise. Moreover, TV is obtained on HP hence it should be rotated clockwise. Hence statement II is correct.

In 1st angle method of projection FV is obtained on VP which is drawn above XY line. Hence statement III is false.

40. Which of the following statements are correct?
    I. If a face is parallel to the direction of viewing it is seen as edge view.
    II. Sectional views are drawn to reveal internal details of an object.
    III. A horizontal section plane will create a sectional FV.
    IV. A half-sectional view is obtained by cutting a quarter part by two perpendicular cutting planes.
    A. I, II and III
    B. II, III and IV
    C. I, II and IV
    D. All of the above

Ans. C

Sol. If face is parallel to the direction of viewing, only the edge of the object can be seen. Hence, the name edge view. Hence statement I is correct.

To obtain the insight of internal details of an object, sectional views are drawn. Hence statement II is correct.

A horizontal section plane will create a line in FV and/or SV. Hence statement III is wrong.

The sectional view obtained after removing the front portion by means of two cutting planes at right angles to each other is a hay sectional view. Hence statement IV is correct.

41. Which one of the following is not a principal plane of projection?
    A. HP B. VP
    C. PP D. Auxiliary plane

Ans. D

Sol. Auxiliary plane is not a principal plane of projection.

42. In orthographic projections, the FV is projected on
    A. HP B. VP
    C. XY D. GL

Ans. B

Sol. In orthographic projections, the FV is projected on VP.

43. In the first-angle projection method, the view seen from the left is placed on
    A. Left of FV B. Right of FV
    C. Above FV D. Below FV

Ans. B

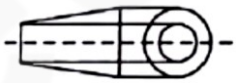
Sol. In 1st angle projection method, LSV is obtained on RPP which is on the right of FV.

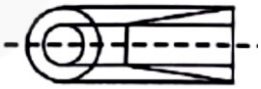
44. In the first-angle projection method, the direction of arrows on the cutting plane line is
    A. away from the POP
    B. towards the POP
    C. away from the base of the solid
    D. towards the base of the solid

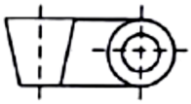
Ans. B

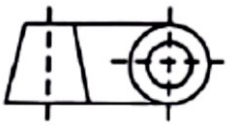
Sol. In 1st angle projection method, the direction of arrows on the cutting plane line is towards the POP.

45. Which of the following is a symbol of the first-angle method of projection?

A. 

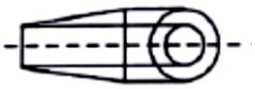
B. 

C. 

D. 

Ans. A

Sol. The symbol of 1st angle method of projection is



46. The location of LHSV in the third-angle method of projection is on the
    A. left-hand side of FV
    B. left-hand side of TV
    C. right-hand side of FV
    D. right-hand side of TV

Ans. A

Sol. In 3rd angle method of projection, LHSV is obtained on left hand side of FV.

47. The TV of a rectangular shaped room will show
   A. length and height
   B. length and width
   C. width and height
   D. none of the above

Ans. B

Sol. The TV of a rectangular shaped room will show both length and width of the object.

48. Which of the following relationships is true for the first-angle method of projection?
   A. Object – POP – observer
   B. Object – observer – POP
   C. POP – Observer – object
   D. Observer – object – POP

Ans. D

Sol. For 1st angle method of projection, the setup is

   Observer – object – POP

49. Which of the following sentence is wrong about three-point perspective?
   A. All the three principal edges of the object are inclined to the picture plane
   B. There are three vanishing points
   C. Vertical edges are seen parallel
   D. Some of the dimensions represents the true dimension.

Ans. A

Sol. If a principal face of an object is parallel to the picture plane, the perspective projection is called parallel perspective.

50. The real angle made by isometric axes with each other is
   A. 120° B. 90°
   C. 60° D. 30°

Ans. B

Sol. Isometric axes at 90° apart.

51. While drawing the isometric view of the sphere, its diameter is taken
   A. 11/9 times of the actual diameter
   B. 9/11 times of the actual diameter
   C. Equal to the actual diameter
   D. None of the above

Ans. A

Sol. The isometric view of the sphere is seen larger in site than the actual size of the sphere and its is 11/9 times the actual diameter.

51. Perspective projections are mostly used in
   A. Architectual drawing
   B. advertising drawings
   C. Artistic drawings
   D. All of the above

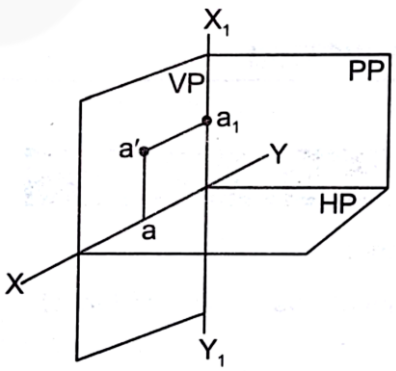
Ans. D

Sol. Perspective projections are mostly used in architectural and civil engineering drawings, advertisement campaigns etc. It is to note that perspective views are not used in manufacturing drawings.

53. If SV of a point is seen on X1Y1, the point lies on
   A. the HP
   B. the VP
   C. the PP
   D. Any one of the above

Ans. B

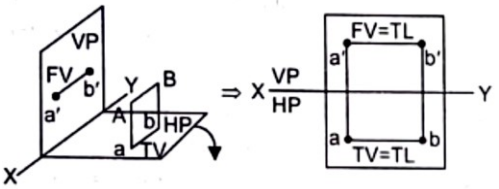
Sol. To obtain SV of a point on X|Y|, the point must lies on the VP.



54. Which of the following statements are correct?
   I. If FV of a line is parallel to XY, its TV gives TL.
   II. PL of a line would be constant if angle ϕ is constant.
   III. HT of a line is seen on TV or extension of TV.
   A. I and II B. II and III
   C. I and III D. All of the above

Ans. C

Sol. The projections can be drawn as follows : Hence statement I is correct.



Plan length (PL) or TVLC (Top view length) is an apparent length of a line seen in TV. It varies with angle d. Hence statement II is false.

Horizontal trace is the point of interaction of the line (or its extension) with the HP. Since on HP, TV is obtained so HT of a line is seen on TV or extension of TV. Hence statement III is true.

55. Which of the following statements are correct?
   I. If TV of a line is a point view, then the line is perpendicular to the VP.
   II. The plane perpendicular to the VP and inclined to the HP is called AVP.
   III. The projection on an AVP is called the auxiliary FV.
   A. I and II B. Only III
   C. II and III D. All of the above

Ans. B

Sol. If the TV of a line is a point view, then the line is parallel to the VP. Hence statement I is wrong.

Plane perpendicular to VP and inclined to HP is called AIP (Auxiliary inclined plane). Hence statement II is wrong.

Auxiliary FV is obtained on AVP which is inclined to VP and perpendicular to HP. Hence statement III is correct.

56. If a line is inclined to the HP and parallel to the VP, it will have
   A. Only HT
   B. Only VT
   C. both HT and VT
   D. neither HT nor VT

Ans. A

Sol. If a line is inclined to HP and parallel to the VP, it will have only HT (horizontal trace).

57. If a line is parallel to both the RPs, then which of the following statements is WRONG?
   A. TL = PL B. TL = EL
   C. TL > EL D. α = β

Ans. C

Sol. If a line is parallel to both the reference planes (RPS) then TL = PL = EL. Moreover since lines are parallel so α = β. Hence option (c) is wrong.

58. The projection of VT on XY, i.e., v is seen on
   A. TV or extension of FV
   B. FV or extension of FV
   C. either TV or FV
   D. None of the above

Ans. A

Sol. The projection of VT on XY, i.e., v is seen on TV or extension of TV.

59. To obtain the point view of a line, the auxiliary plane is set
   A. perpendicular to TL
   B. parallel to TL
   C. inclined at angle ϕ° to TL
   D. inclined at an angle ϕ° to TL

Ans. A

Sol. To obtain the point view of a line, the auxiliary plane is set perpendicular to TL.

60. Which of the following statements are correct?
   I. If a corner of a pentagonal plate is in the VP, then its TV has one point on XY.
   II. If a plane is parallel to an RP, its projection on that RP shows the true shape and size.
   III. The trace of a plane is a line.
   A. I and II B. II and III
   C. I and III D. All of the above

Ans. D

Sol. The projection of a corner placed at VP will be seen as a point on the XY line. Hence statement I is correct.

The true shape and site of an object is obtained in that RP to which it is parallel. Hence statement II is correct.

The trace of a plane is a line. Hence statement III is correct.

61. Which of the following statements are correct?
    I. If an edge view of a plane is projected on the auxiliary plane parallel to the edge view, then the auxiliary view obtained gives the true shape of the plane.
    II. The obtain ϕ_p, a line is drawn parallel to an auxiliary plane in the final TV.
    A. Only I B. Only II
    C. Both D. None

Ans. A

Sol. Since auxiliary plane is parallel to the edge view, so the auxiliary view obtained gives the true shape of the plane. Hence statement I is correct.
To obtain ϕ_p, a line is drawn parallel to XY line in the final TV. Hence statement II is false.

62. If an edge of an oblique pentagonal plane is parallel to the HP and VP, then which of the following sentences is WRONG?
    A. FV will show TL of the edge
    B. TV will show TL of the edge
    C. FV will show TL of the plane
    D. SV will show edge view

Ans. C

Sol. Since the plane is parallel to HP and VP, then in either views TL will be seen as edge view only and not complete plane.

63. A continuous straight line in FV of an object may represent
    A. An edge of the object
    B. A face of the object
    C. Either an edge or a face of the object
    D. A corner on the object

Ans. C

Sol. A continuous straight line in FV of an object may represent either an edge or a face of the object.

64. A hexahedron consists of
    A. Four equal square faces
    B. Six equal square faces
    C. Four equal triangular faces
    D. Six equal triangular faces

Ans. B

Sol. A hexahedron consists of six equal square faces.

65. A pentagonal pyramid is resting on its triangular face on the HP with its axis parallel to the VP. Which of the following sentences is correct?
    A. FV shows TL of axis
    B. SV of axis is perpendicular to XY.
    C. TV of axis is parallel to XY.
    D. All of the above

Ans. D

Sol. Since the axis is parallel to VP then FV shows TL of axis. Also TV of axis is parallel to XY and SV of axis is perpendicular to XY.

66. A hexagonal prism has its axis inclined at 30° to the HP and 60° to the VP. Which of the following sentences is correct?
    A. The axis will be seen at 30° to XY in FV
    B. The axis will be seen at 60° to XY in FV
    C. The base will make 60° with the HP
    D. The base will make 30° with the HP

Ans. C

Sol. For a hexagonal prism inclined at 30° to HP and 60° to VP, its base will make 60° with the HP.

67. Which one of the following cannot be a section of a tetrahedron?
    A. Isosceles triangle
    B. Equilateral triangle
    C. Trapezium
    D. Pentagon

Ans. D

Sol. A tetrahedron is a closed solid by four triangle. Hence its section can not be a pentagon.

68. To obtain the true shape of the section of a solid, an auxiliary plane is set
    A. Inclined at an angle of 45° to a cutting plane
    B. Perpendicular to a cutting plane
    C. Parallel to cutting plane
    D. Parallel to XY

Ans. C

Sol. To obtain true shape, the auxiliary plane is set parallel to the cutting plane.

69. If the cutting plane includes the axis of a cylinder, the section obtained is a
    A. Rectangle
    B. Circle
    C. Ellipse
    D. Any of the above

Ans. A

Sol. If the position of the cutting plane is parallel to the axis then the true shape of section is rectangular.

70. Whenever a prism and a pyramid intersect, the curve seen at their intersection is a
    A. Smooth curve
    B. Segmented-line curve
    C. Either smooth curve or segmented-line curve
    D. None of the above

Ans. A

Sol. The intersection of a prism and pyramid gives segmented line curve.

71. Which of the following sentence is wrong?
    A. A hidden edge may emerge from the intersection of two visible edges.
    B. A hidden edge may emerge from the intersection of two hidden edges.
    C. A visible edge may emerge from the intersection of two visible edges.
    D. A visible edge may emerge from the intersection of two hidden edges.

Ans. D

Sol. A visible dge can not emerge from the intersection of two hidden edges.

72. The theory of development is used in manufacturing of
    A. Plastic moulded parts
    B. Cast iron parts
    C. Sheet metal parts
    D. Electronic components

Ans. C

Sol. The theory of development is used in manufacturing of sheet metal parts.

73. The included angle, θ of the sector development of a cone of base radius r and slant height R is given by,
    A. $\theta^o = 360(R / r)$
    B. $\theta^o = 360(r / R)$
    C. $\theta^o = 180^o(R / r)$
    D. $\theta^o = 180^o(r / R)$

Ans. B

Sol. The relation is given by $\theta = 360^o \times \left(\frac{r}{R}\right)$

74. If a thread is wound around a cone, starting from a point on the base, and brought back to the same point, then the shortest possible length of the thread is equal to the
    A. Slant height of the cone
    B. Diameter of the base of the cone
    C. Longest chord of the development sector
    D. Length of a perpendicular from a corner of the development sector to the opposite edge

Ans. C

Sol. The shortest possible length of the thread will be the longest chord of the development sector.

75. The development of a curved surface of a cylinder will be a
    A. Rectangle B. Sector
    C. Triangle D. Circle

Ans. A

Sol. The development of a curved surface of a cylinder will be a rectangle.

76. The development of all the surface of a cube will be
    A. 4 squares B. 5 squares
    C. 6 squares D. 8 squares

Ans. C

Ans. The development of all the surface of a cube will be 6 squares.