
DRAWING TOOLS AND THEIR USES

1. How many battens will be there for a Drawing board?
a)1
b)2
c)3
d)4
View Answer
Answer:b
Explanation: Generally drawing board has dimensions of 1000 x 1500, 700 x 1000, 500 x 700, 350 mm x 500 mm, and made of well-seasoned soft wood, so there would be no bending while life increases. And also if a size of drawing board increases widely then the board will be fabricated with another 1 or 2 battens.

2. The part that doesn't belong to T-square is _____
a) Working edge
b) Blade
c) Stock
d) Ebony
View Answer
Answer: d
Explanation: Working edge and Stock are parts of T- square those which make 90 degrees with each other, the blade is the long bar that exists in T-Square. Ebony is part of Drawing board in which T-square is fitted to draw lines.

3. The angle which we can't make using a single Set-square is _____
a) 45^o
b) 60^o
c) 30^o
d) 75^o
View Answer
Answer: d
Explanation: 45^o can be drawn using 45^o Set-square, and 30^o, 60^o can be drawn using 30^o – 60^o Set-square, but to draw 75^o degrees we need both Set-squares. That is only if we keep 30^o of set-square adjacent with 45^o set-square we can get 75^o. And also multiple angles can be achieved using protractor.

4. The angle which we can't make using both the Set-squares is _____
a) 15^o
b) 105^o
c) 165^o
d) 125^o
View Answer
Answer: d
Explanation: 15^o can be made by keeping 45^o and 30^o adjacent to each other on the line perpendicular to the line for which $15^o$is made. Likewise for 105^o and 165^o also if we just change the alignment with the required line it possible. But to make 125^o there is no such combination available for Set-squares.

5. Small bow compass can draw circles less than _____ mm radius.
a) 25mm
b) 30mm
c) 35mm
d) 40mm
View Answer
Answer: a
Explanation: A normal Small bow compass is capable of drawing circles less than the 25mm radius. This is because of the arrangement of a screw in between the legs of the compass. But any other normal compass can't give us perfect circles whose radius is less than 25mm.

6. Which is not the use of divider?
a) To divide curved or straight lines into the desired number of equal parts
b) To draw circles
c) To transfer dimensions from one part of the drawing to another part
d) To set-off given distances from the scale to the drawing
View Answer
Answer: b
Explanation: Divider can be used for those purposes as mentioned in options. But we cannot use divider as a compass and even if we want the compass to be used as divider we can change the pencil part with needle attachment.

7. The cardboard scales are available in a set of _____ scales.
a) six
b) ten
c) eight
d) twelve
View Answer
Answer: c
Explanation: The cardboard scales are available in a set of eight scales. They are

designated from M1 to M8 which has scale of 1:1, 1:2.5, 1:10, 1:20, 1:50, 1:200, 1:300, 1:400, and 1:1000. These are standard scales used.

8. _____ is used to draw curves which are not circular.
a) Compass
b) Protractor
c) French curves
d) Pro circle
View Answer
Answer: c
Explanation: French curves are used for drawing curves which can't be drawn with a compass. A faint freehand curve is first drawn through the known points. Longest possible curves exactly coinciding with the freehand curve are then found out from the French curve. Finally, a neat continues curve is drawn with the aid of the French curve.

9. The areas of the two subsequent sizes of drawing sheet are in the ratio ____
a) 1:5
b) 1:4
c) 1:2
d) 1:10
View Answer
Answer: c
Explanation: A successive format size (from A0 to A5) is obtained by halving along the length or doubling along the width. So the areas of the two subsequent sizes are in the ratio 1:2. Likewise in reverse order (from A5 to A0), the ratio will be 2:1.

10. The sizes from A0 to A5 increases.
a) True
b) False
View Answer
Answer: b
Explanation: The sizes from A0 to A5 decreases, A5 (148 mm x 210 mm), A4 (210 mm x 297 mm), A3 (297 mm x 420 mm), etc. A successive format size is obtained by doubling along the width or halving along the length.

11. The increase in hardness is shown by the value of the figure put in front of the letter H, 2H, 3H, and 4H etc.
a) True
b) False
View Answer
Answer: a
Explanation: Letters HB denote the medium grade where the increase in hardness is shown

by the value of the figure put in front of the letter H, viz. 2H, 3H, and 4H etc. Similarly, the grade becomes softer according to letter B, 2B, 3B and 4B etc.

12. What is the next size of 210 mm x 297 mm in drawing papers?
a) 148 mm x 210 mm
b) 297 mm x 420 mm
c) 420 mm x 594 mm
d) 105 mm x 148 mm
View Answer
Answer: b
Explanation: 210 mm x 297 mm is A4 size, next one is A3 (297 mm x 420 mm), which came doubling along the width. And the next size is obtained by doubling the width i.e. A2 (420 mm x 594mm) and so on.

13. The Grade becomes _____ according to the figure placed in front of the letter B, 2B, 3B, 4B etc.
a) harder
b) lighter
c) darker
d) softer
View Answer
Answer: d
Explanation: The increase in hardness is shown by the value of the figure put in front of the letter H, 2H, 3H, and 4H etc. Similarly, the grade becomes softer according to the figure placed in front of the letter B, 2B, 3B, and 4B etc

14. The accuracy of the drawing depends on the quality of the instruments used.
a) True
b) False
View Answer
Answer: a
Explanation: Drawing instruments play a vital role in the quality of the drawing. Factors such as accuracy, precision, correctness, etc depend on the quality of the said instruments. There are many drawing instruments which help in increasing the accuracy of the drawing.

15. Which of the following instrument is made of thin strips of wood arranged in a line to form a rectangle and on which, the drawing is made?
a) Mini – drafter
b) Drawing Board

c) Protractor
d) Scale
View Answer
Answer: b
Explanation: The drawing board is made up of thin sheets of seasoned softwood, arranged in a line so as to form a rectangle. Then it is fitted with two battens on the respective parallel sides of the board. The battens are attached with the help of screws.

15. Which of the following tools is used to draw horizontal lines?
a) Mini – drafter
b) Protractor
c) T – square
d) French curve
View Answer
Answer: c
Explanation: T – squares are made up of hard wood, plastics, etc. It consists of two parts; stock and blade. The stock slides on the drawing board and the horizontal lines are drawn from the working edge on the side of the blade. The angle between the stock and the blade is 90˚.

16. Which of the following instrument can be used to draw accurate perpendicular lines, parallel lines and angular lines?
a) Mini – drafter
b) T – square
c) Protractor
d) Set square
View Answer
Answer: a
Explanation: Mini – drafters are used to draw perpendicular lines, parallel lines and angular lines. They consist of blades, protractor head, double bar link mechanism, screw and clamp. The blades have markings corresponding to the engineering scale.

17. According to the Indian Standard Institute (ISI), which among the following designation has the size 1000 x 700 (in mm)?
a) B0
b) B1
c) B2
d) B3
View Answer

Answer: b
Explanation: The designation B1 is 1000 x 700 mm in size whereas B0, B2 and B3 designations are 1500 x 1000 mm, 700 x 500 mm and 500 x 300mm respectively. These designations denote the dimensions of the drawing boards. Standard dimensions are used to simplify the production process.

18. Which is the most common tool used for drawing circles?
a) French curve
b) Mini – drafter
c) Divider
d) Compass
View Answer
Answer: d
Explanation: Compass is used to draw circles. Its design is similar to the divider, except in compass there is a provision for the attachment of pencil or lead in one of the legs of the compass. The divider is used to measure and repeat the dimensions when they are repeated.

19. For drawing circles with a large radius, which of the following tool is used?
a) Bow compass
b) Lengthening bar compass
c) Divider
d) Protractors
View Answer
Answer: b
Explanation: In a lengthening bar compass, there is a provision for increasing the radius of the circle greater than the total open length of the compass. This helps in drawing very large circles with the help of medium sized compasses.

20. Which of the following drawing tools is used by architects for making blueprints?
a) Drawing Pencils
b) Dusters
c) Ink Pen
d) Erasers
View Answer
Answer: c
Explanation: Ink Pen is used to draw the blueprints by architects and draftsmen. They are used to draw lines onto the tracing paper. They are used for making the final drafts of the

drawing made in pencil. Drawing pencils have generally leads which drawn on paper can be erased. This does not happen with the ink pen.

21. Which of the following drawing tool is not used to set the drawing sheet onto the drawing board?
a) Drawing clips
b) Drawing pins
c) Divider
d) Adhesive Tape
View Answer
Answer: c
Explanation: Divider is a drawing tool used to replicate the dimensions when the dimensions are repeated. Drawing clips, drawing pins and adhesive tapes are used to attach the drawing sheet onto the drawing board. These attachments are temporary attachments and can be removed after the drawing is completed.

22. According to the Indian Standard Institution (ISI), what is the size of the designation A3 in mm?
a) 420 x 297
b) 841 x 594
c) 1189 x 841
d) 297 x 210
View Answer
Answer: a
Explanation: The size of the designation A3 in mm is 420 x 297. The designations A0, A1, A2, A4 and A5 have sizes 1189 x 841 mm, 841 x 594 mm, 594 x 420 mm, 297 x 210 mm and 210 x 148 mm respectively. Standardizing helps in uniformity of the products all over the nation and will avoid local variations.

23. Which of the following drawing tool is used to transfer dimensions when there is a repetition of the dimensions?
a) Compass
b) Protractor
c) Divider
d) Mini – Drafter
View Answer
Answer: c
Explanation: Divider is used to transfer dimensions when there is a repetition of the dimensions. It is the faster method than using a scale and then marking the dimension again. Protractors are only used to mark angles and the compass is used to draw circles.

24. Which of the following grades of leads is the hardest?
a) 6B
b) 5H
c) 4B
d) 6H
View Answer
Answer: d
Explanation: 6H is the hardest grade of lead. The softest grade is 6B. HB is the medium soft grade. Generally, for educational purposes, 2HB pencils are used to make drawings. B is soft and H is medium hard. As the prefix number increases, the softness increases in B and the hardness increases in case of H.

25. For marking angles, which of the following drawing tool is used?
a) Protractor
b) Divider
c) Compass
d) French curve
View Answer
Answer: a
Explanation: Protractors are used to mark angles from 0˚ to 180˚. There are markings on the semicircular area of the protractor. The least count of protractor for educational purpose is 1˚. The accuracy of marking angles is highest in protractor.

26. Using 30˚ – 60˚ – 90˚ and 45˚ – 45˚ – 90˚ set squares, which of the following angle is not possible to draw?
a) 45˚
b) 30˚
c) 10˚
d) 90˚
View Answer
Answer: c
Explanation: Using the proper combination of both the set squares, one can draw multiple angles with a 30˚ angle minimum. If T-square and mini-drafter also used, the minimum accurate angle that we can draw is 15˚. Set squares are generally used to draw vertical and inclined lines.

27. Which is the instrument used to draw parallel lines fast?
a) Set square
b) Ruler scale
c) Protractor
d) Roll-n-draw
View Answer
Answer: d
Explanation: Using roll-n-draw scales, we can draw parallel lines very accurately and fast. They are used to draw parallel lines in the horizontal direction, vertical direction and also in inclined planes. The general dimension of the roll-n-draw scale is 30 cm and 15 cm. The scale is rolled on the paper to achieve parallel lines

Machine Drawing and Free-Hand Sketching

This set of Engineering Drawing Interview Questions and Answers focuses on “Sheet layout, Types of Machine Drawing and Free-Hand Sketching”.

1. The preferred size of the drawing sheets is recommended by the _____
a) B.I.S.
b) ASME
c) ASTM
d) NIST
View Answer
Answer: a
Explanation: Bureau of Indian Standards (B.I.S.), American Society of Mechanical Engineering (ASME), American Society for Testing and Materials (ASTM), U.S. National Institute of Standards and Technology (NIST).

2. The untrimmed size for _____ sheet is 240 mm x 330 mm.
a) A1
b) A3
c) A4
d) A5
View Answer
Answer: c
Explanation: The untrimmed size of any sheet will be slightly larger than trimmed size. The untrimmed size for an A4 sheet is 240 mm x 330 mm where trimmed size is 210 mm x 297mm. The space between the trimmed sheet and the frame is called a border.

3. SP: 46 (2003) recommends the borders of _____ mm width for the sheet sizes A0 and A1, and _____ mm for the sizes A2, A3, A4 and A5.
a) 10, 20
b) 15, 20
c) 20, 10
d) 15, 10
View Answer
Answer: c
Explanation: SP: 46 (2003) recommends the borders of 20 mm width for the sheet sizes A0 and A1, and 10 mm for the sizes A2, A3, A4 and A5. The BIS-SP 46 is the standard used in the educational institution for engineering drawing.

4. The false statement regarding orientation mark.
a) The orientation mark coincides with one of the centering marks
b) Represents the direction to which sheet is placed
c) Orientation mark can be used for the orientation of drawing sheet on the drawing board
d) Facilitate positioning of the drawing for reproduction purpose
View Answer
Answer: b
Explanation: The sheet may be placed in any direction but within the sheet, the drawing should be specified particularly for reproduction purpose, the main purpose is to facilitate positioning of the drawing and parts in it.

5. The size of the title block is _____ mm x _____ mm.
a) 25 x 10
b) 100 x 25
c) 65 x 185
d) 185 x 65
View Answer
Answer: d
Explanation: The size of the title block is 185mm x 65 mm which is recommended by B.I.S. (Bureau of Indian Standards), where 25mm x 10mm is for scale in drawing sheet. Within the title box, there will be so many sections divided like Name of the firm, Drawing No, Title, etc.

6. The number of folding methods for folding of various sizes of drawing sheets is _____
a) 1

b) 2
c) 3
d) 4
View Answer
Answer: b
Explanation: The final size of the folded print in method 1 will be 297 x 190, while that in method 2 will be 297 x 210. In either case, the title block is visible at the top of the folded print. When prints are to be stored and preserved in cabinets they are folded by method 2.

7. Which of the following is reducing scale?
a) 10:1
b) 10:2
c) 0.5:1
d) 2:1
View Answer
Answer: c
Explanation: 0.5:1 is reducing scale which we can also be written as 1:2. In the remaining options, the antecedent is more than the consequent. So we can say if the antecedent is a decimal and consequent is the whole number then the ratio is said to be reducing scale.

8. 1:10000 is enlarging scale.
a) True
b) False
View Answer
Answer: b
Explanation: 1:10000 is reducing scale since antecedent is less than consequent. The ratio represents the object should be drawn 1/10000th of the original one. Usually, this much ratios will be used only when the machine parts are too big.

9. _____ is not an essential thing for free-hand sketching.
a) A soft-grade pencil
b) French curves
c) A soft rubber-eraser
d) A paper in form of a sketch-book or a pad
View Answer
Answer: b
Explanation: French curves are used for drawing curves which cannot be drawn with a compass. Since we are just making a rough sketch of our drawing beforehand, for the

actual drawing there is no need for French curves. The remaining are primary requirements to sketch any drawing.

10. Which statement is false?
a) Drawing for instruction manual: This is assembly drawing without dimensions. This is also used for explaining the working principle of each part
b) Exploded assembly drawing: This type of assembly drawing is used for explaining the working principle of any machine
c) Drawing for catalogue: Special assembly drawings are prepared for catalogues, with overall and principal dimensions
d) Patent drawing: It is generally assembly drawing either in pictorial form or principal view of orthographic projection of a machine
View Answer
Answer: b
Explanation: The correct statements are schematic assembly drawing: This type of assembly drawing is used for explaining the working principle of any machine. Exploded assembly drawing: It represents the details of a machine in a pictorial form as it is assembled. It helps the mechanics for dismantling machine for repairing purpose.

11. Arrange the statements. Given statements refers to free-hand sketching of straight lines.
i) Then begin to draw the line with short and light strokes.
ii) Hold the pencil at about 30 mm distance from the lead point.
iii) Finish finally with a dark and firm line.
iv) Swing it from left to right and backward, between the two points.
a) i), ii), iii) and iv)
b) ii), iii), iv) and i)
c) iv), iii), i) and ii)
d) ii), iv), i) and iii)
View Answer
Answer: d
Explanation: Holding the pencil should be primary thing, getting a clear view on the drawing is next after we have to just draw with a light sketch so that we can understand how the sketch will be, and finishing with a dark sketch.

12. Arrange the statements. Given statements refers to free-hand sketching of a circle.
i) Add four radial lines between them.
ii) Make the center and through it, draw horizontal and vertical center lines.
iii) The paper may be revolved after about each quarter-circle for easy wrist motion while drawing.
iv) Mark points on these lines at radius distance from the center.
a) ii), i), iv) and iii)
b) ii), iii), iv) and i)

c) iv), iii), i) and ii)
d) ii), iv), i) and iii)
View Answer
Answer: a
Explanation: For drawing, circle center should be the primary thing. Make the circle and through it draw horizontal and vertical center lines. Later we add four radial lines between them and then the paper maybe revolved for easy wrist motion to enable drawing

This set of Engineering Drawing Multiple Choice Questions & Answers (MCQs) focuses on “Different Types of Lines – 1”.

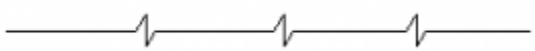
1. Medium thickness, line-group of 2mm are not used for _____
a) out lines
b) dotted lines
c) cutting plane -lines
d) dimension lines
View Answer
Answer: d
Explanation: Out lines, dotted lines and cutting plane-lines are drawn using 2mm thickness lines. Whereas centre lines, section lines, dimension lines, extension lines, construction lines, leader lines, short break lines and long-break lines are drawn using 1mm thickness lines.

2. Initial work and construction lines are drawn using __ pencil.
a) 3H
b) 4H
c) H
d) 2H
View Answer
Answer: c
Explanation: Initial work and construction lines are drawn using H pencil. 2H pencil is used for outlines, dotted lines, dimension lines and arrowheads. 3H, 4H are used for centre lines and section lines.

3. Centre lines, section lines are drawn using __ pencil.
a) H
b) 2H
c) 3H or 4H

d) HB
View Answer
Answer: c
Explanation: Centre lines, section lines are drawn using 3H or 4H pencil. Outlines, dotted lines, section-plane lines, dimension lines and arrow heads are drawn using 2H. These different pencils give different shades which give different importance to lines in drawing.

4. The line given below is used for_____



a) Long-break line
b) Cutting planes
c) Centroidal lines
d) Out lines of adjacent parts
View Answer
Answer: a
Explanation: Lines used to represent cutting planes is chain thin (narrow) with thick (wide) at the ends and at changing of position, lines used to represent centroidal lines and outlines of adjacent parts are chain thin double-dashed or long-dashed double-dotted (narrow).

5. The line given below is used for_____

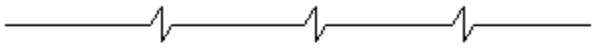
a) Hidden outlines
b) Cutting planes
c) Hidden edges
d) Dimension lines
View Answer
Answer: b
Explanation: Hidden outlines, hidden edges are drawn using dashed thin (narrow) lines. Dimension lines are drawn using continuous thin (narrow) lines (straight or curved). The given type of line in question is used to represent cutting planes.

6. Dashed thick (wide) line is represented by _____

a)
b)
c)

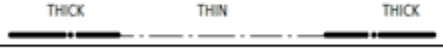
d)
View Answer
Answer: c
Explanation: The other lines are continuous thin (narrow) (straight or curved) which areused for grid, dimension. Dashed thin (narrow) is used for hidden outlines. A Chain thin long-dashed dotted (narrow) line is used for centre line, lines of symmetry etc.

7. Match the following.

1.		i. Dimension, extension
2.		ii. Long-break line
3.		iii. Line showed at surface treatment
4.		iv.Cutting planes

a) 1, i; 2, ii; 3, iii; 4, iv
b) 1, ii; 2, iii; 3, i; 4, iv
c) 1, ii; 2, iv; 3, iii; 4, i
d) 1, iv; 2, iii; 3, ii; 4, i
View Answer
Answer: b
Explanation: Thick-thin-thick are used for cutting planes, dashed thick (wide) is used for surface treatment, zigzag lines are used for long-break lines and continuous thin line is used for dimensions, extensions and projection lines.

8. Match the following.

1.		i. Dimension, extension
2.		ii. Indication of surfaces for special requirement
3.		iii. Line showed at surface treatment
4.		iv.Cutting planes

a) 1, i; 2, ii; 3, iii; 4, iv
b) 1, ii; 2, iii; 3, iv; 4, i
c) 1, ii; 2, iv; 3, iii; 4, i
d) 1, iv; 2, iii; 3, ii; 4, i
View Answer

Answer: b
Explanation: Thick-thin-thick are used for cutting planes, dashed thick (wide) is used for surface treatment, chain thick or long dashed dotted (wide) is used for indication of lines or surfaces to which a special requirement applies and continuous thin line is used for dimensions, extensions and projection lines.

9. Drawing pencils are graded according to increase in relative _____
a) diameter
b) sharpness
c) length
d) hardness
View Answer
Answer: d
Explanation: Drawing pencils are graded according to the increase in relative hardness. They are marketed with the labeled as H, 2H, 3H, 4H, 5H, 6H etc. These grades are used for getting accurate, clean and neat drawings.

10. Match the following.

1.	Dimension lines	i.Continuous thick lines
2.	Extension or Projection lines	ii.Continuous thin lines
3.	Margin lines	iii.Continuous thick lines
4.	Outlines	iv.Continuous thin lines

a) 1, i; 2, ii; 3, iii; 4, iv
b) 1, ii; 2, iii; 3, iv; 4, i
c) 1, ii; 2, iv; 3, iii; 4, i
d) 1, iv; 2, iii; 3, ii; 4, i
View Answer
Answer: c
Explanation: Dimension lines are continuous thin lines, are terminated at the outer ends by pointed arrowheads. Extension lines continuous thin lines extend by about 3mm beyond the dimension lines. Margin lines are continuous thick or wide lines along which the prints are trimmed. Outlines are continuous thick or wide lines.

11. Short-break lines are drawn freehand while long-break lines are ruled lines.
a) True
b) False
View Answer
Answer: a
Explanation: Short-break lines are continuous, thin and wavy. They are drawn with freehand and are used to show a short-break or irregular boundaries. Long-break lines are thin ruled lines with short zigzags within them

Engineering Drawing Questions and Answers – Projection of Points in First Quadrant

This set of Engineering Drawing Multiple Choice Questions & Answers (MCQs) focuses on "Projection of Points in First Quadrant".

1. Two points are placed in 1st quadrant of projection planes such that the line joining the points is perpendicular to profile plane the side view and top view will be _____
a) single point, two points
b) two points, single point
c) single point, single point
d) two points, two points
View Answer
Answer: a
Explanation: Here given the two points such that the joining line is perpendicular to profile plane in 1st quadrant asked side view and top view. The views in any quadrant will remain same but the relative positions in projection will change accordingly the quadrant.

2. A point is 5 units away from the vertical plane and 4 units away from profile plane and 3 units away from horizontal plane in 1st quadrant then the projections are drawn on paper the distance between the front view and top view of point is _____
a) 7 units
b) 8 units
c) 9 units
d) 5 units
View Answer
Answer: b
Explanation: Since the point is 3 units away from the horizontal plane the distance from the point to xy reference line will be 3 units. And then the point is at a distance of 5 units from the vertical plane the distance from reference line and point will be 5, sum is 8.

3. A point is 8 units away from the vertical plane and 2 units away from profile plane and 4 units away from horizontal plane in 1st quadrant then the projections are drawn on paper the distance between the side view and front view of point is _____
a) 12 units
b) 6 units
c) 10 units
d) 8 units
View Answer
Answer: c
Explanation: Since the point is 2 units away from the profile plane the distance from the point to reference line will be 2 units. And then the point is at a distance of 8 units from the vertical plane the distance from reference line and point will be 8, sum is 10.

4. A point is 2 units away from the vertical plane and 3 units away from profile plane and 7 units away from horizontal plane in 1st quadrant then the projections are drawn on paper the distance between the front view and side view of point is _____
a) 10
b) 5
c) 9
d) 7
View Answer
Answer: b
Explanation: Since the point is 3 units away from the profile plane the distance from the point to reference line will be 3 units. And then the point is at a distance of 2 units from the profile plane the distance from reference line and point will be 2 units, sum is 5.

5. A point is 20 units away from the vertical plane and 12 units away from profile plane and 9 units away from horizontal plane in 1st quadrant then the projections are drawn on paper the distance between the side view and front view of point is _____
a) 29 units
b) 21 units
c) 32 units
d) 11 units
View Answer
Answer: c
Explanation: Since the point is 12 units away from the profile plane the distance from the point to reference line will be 12 units. And then the point is at a distance of 20 units from profile plane the distance from reference line and point will be 20 units, sum is 32.

6. A point is 2 units away from the vertical plane and 3 units away from profile plane and 7 units away from horizontal plane in 1st quadrant then the projections are drawn on paper the shortest distance from top view and side view of point is _____
a) 10.29
b) 5.14
c) 9
d) 7
View Answer
Answer: c
Explanation: Since here distance from side view and top view is asked for that we need the distance between the front view and side view (3+2); front view and top view (7+2)and these lines which form perpendicular to each other gives needed distance, answer is square root of squares of both the distances $\sqrt{(5^2+9^2)}$ =10.29 units.

7. If a point P is placed in between the projection planes. The distance from side view to reference line towards front view and the distance between top view and reference line towards top view will be same.
a) True
b) False
View Answer
Answer: a
Explanation: The projection will be drawn by turning the other planes parallel to a vertical plane in clockwise direction along the lines of intersecting of planes. And so as we fold again the planes at respective reference lines and then drawing perpendiculars to the planes at those points the point of intersection gives the point P.

8. A point is 20 units away from the vertical plane and 12 units away from profile plane and 9 units away from horizontal plane in 1st quadrant then the projections are drawn on paper the distance between the side view and top view of point is _____
a) 29 units
b) 21 units
c) 35.8 units
d) 17.9 units
View Answer
Answer: c
Explanation: Since here distance from side view and top view is asked for that we need the distance between the front view and side view (12+9); front view and top view (9+20)and these lines which form perpendicular to each other gives needed distance, answer is square root of squares of both the distances $\sqrt{(21^2+29^2)}$ = 35.80 units.

9. A point is 5 units away from the vertical plane and profile plane and 10 units away from the horizontal plane in 1st quadrant then the projections are drawn on paper the distance between the side view and top view of point is _____
a) 15
b) 10
c) 32.5
d) 18.02 units
View Answer
Answer: d
Explanation: Since here distance from side view and top view is asked for that we need the distance between the front view and side view (5+5); front view and top view (10+5)and these lines which form perpendicular to each other gives needed distance, answer is square root of squares of both the distances $\sqrt{(10^2+15^2)}$ = 18.02 units.

10. A point is 15 units away from the vertical plane and 12 units away from profile plane and horizontal plane in 1st quadrant then the projections are drawn on paper the distance between the front view and top view of point is _____
a) 27
b) 15
c) 12
d) 24
View Answer
Answer: a
Explanation: Since the point is 12 units away from the horizontal plane the distance from the point to xy reference line will be 12 units. And then the point is at a distance of 15 units from the vertical plane the distance from reference line and point will be 15, sum is 27.

11. A point is 12 units away from the vertical plane and profile plane 15 units away from horizontal plane in 1st quadrant then the projections are drawn on paper the distance between the front view and side view of point is _____
a) 27
b) 15
c) 12
d) 24
View Answer
Answer: d
Explanation: Since the point is 12 units away from the profile plane the distance from the point to xy reference line will be 12 units. And then the point is at a distance of 12 units from the profile plane the distance from reference line and point will be 12, sum is 24.

12. A point is 7 units away from the vertical plane and horizontal plane 9 units away from profile plane in 1st quadrant then the projections are drawn on paper the distance between the front view and top view of point is _____
a) 27
b) 15
c) 16
d) 14
View Answer
Answer: d
Explanation: Since the point is 7 units away from the horizontal plane the distance from the point to xy reference line will be 7 units. And then the point is at a distance of 7 units from the vertical plane the distance from reference line and point will be 7, sum is 14 units.

13. A point is 16 units away from the vertical plane and horizontal plane 4 units away from profile plane in 1st quadrant then the projections are drawn on paper the distance between the side view and top view of point is _____
a) 37.73 units
b) 32.98 units
c) 16
d) 8
View Answer
Answer: d
Explanation: Since here distance from side view and top view is asked for that we need the distance between the front view and side view (4+16); front view and top view (16+16)and these lines which form perpendicular to each other gives needed distance, answer is square root of squares of both the distances $\sqrt{20^2+32^2}$) = 37.73 units

Engineering Drawing Questions and Answers – Projection of Straight Lines Parallel to Plane

This set of Engineering Drawing Multiple Choice Questions & Answers (MCQs) focuses on “Projection of Straight Lines Parallel to Plane”.

1. If a line AB parallel to both the horizontal plane and vertical plane then the line AB is _____
a) parallel to profile plane
b) lies on profile plane
c) perpendicular to profile plane

d) inclined to profile plane
View Answer
Answer: c
Explanation: For any line if it is parallel to two perpendicular planes then the line will definitely perpendicular to other plane perpendicular to both the previous planes. And whether the line lies on the plane or not depends on conditions given but we can't just imagine.

2. A line AB of length 20 cm is placed in 1st quadrant and parallel to profile plane and the end A and B are 15, 10 cm away from the horizontal plane respectively. The length of the line in the top view is _____ cm.
a) 11.18
b) 13.2
c) 17.32
d) 19.36
View Answer
Answer: d
Explanation: The distance between the projectors drawn from A and B to horizontal plane gives the length of line in top view given the line parallel to profile plane. The difference in distances from A and B to horizontal plane is 5 (15-10). Given length is 20 cm so required length is √(⟦20⟧^2-5^2)= 19.36 cm.

3. A line of length 15 cm is parallel to horizontal plane and makes an angle of 30 degrees with vertical plane. The length of line in top view is ____ cm.
a) 30
b) 15
c) 12.9
d) 7.5
View Answer
Answer: b
Explanation: Given the line is parallel to horizontal plane and makes an angle of 30 degrees with vertical plane. The top view gives the actual length of the line because the top view is always the projection of objects on horizontal plane to which the line is parallel.

4. A line AB of length 10 cm is placed in 2nd quadrant parallel to vertical plane and 5 cm away from the vertical plane and ends are 7 cm and 4 cm from horizontal plane. The top view and front view lines apart from each other.
a) True

b) False
View Answer
Answer: b
Explanation: Accordingly the given distances and length if the projections are drawn the front view and top view intersect with each other as for 2nd quadrant the projections of a front view and top view overlaps.

5. A line of length 16 cm is parallel to horizontal plane and makes an angle of 30 degrees with vertical plane placed in 3rd quadrant. The length of line in front view is ____ cm.
a) 32
b) 16
c) 13.8
d) 8
View Answer
Answer: c
Explanation: The line given is parallel to horizontal plane and makes an angle of 30 degrees with vertical plane so the length of line front view will be cosine (30)x actual length of line =13.8 cm. There will be no difference the line is in any quadrant.

6. A line AB of length 15 cm is placed in 4th quadrant and parallel to profile plane and the end A and B are 8, 6 cm away from the horizontal plane respectively. The length of the line in front view is _____ cm.
a) 14.8
b) 9
c) 7
d) 2
View Answer
Answer: d
Explanation: The difference in distances from A and B to horizontal plane is 2 (8-6) cm. And this front view of line in orthographic projection is perpendicular to the reference line as the line in projection planes is parallel to profile plane.

7. A line AB of length 2 m is placed in 2nd quadrant and parallel to vertical plane and the end A and B are 0.5 m and 0.3 m away from the horizontal plane respectively. The length of the line in top view is _____ m.
a) 1.98
b) 1.97
c) 1.936
d) 2
View Answer

Answer: a
Explanation: The distance between the projectors drawn from A and B to horizontal plane gives the length of line in top view given the line parallel to vertical plane. The difference in distances from A and B to horizontal plane is 0.2 (0.5-0.3). Given length is 2 m so required length is $\sqrt{(2^2-0.2^2)}$= 1.98m.

8. A line of length 30 inches is parallel to profile plane and makes an angle of 60 degrees with vertical plane. The length of line in top view is ____ inches.
a) 30
b) 15
c) 25.9
d) 51.9
View Answer
Answer: c
Explanation: Given the line is parallel to profile plane and makes 60 degrees with vertical plane. There will be no need for distance from profile plane. The length of line from top view will be sin(60) x length of the line= sin(60) x 30 inches =25.9 inches.

9. A line of length 25 cm is parallel to horizontal plane and makes an angle of 45 degrees with profile plane. The length of line in side view is ____ cm.
a) 25
b) 12.5
c) 88.3
d) 17.67
View Answer
Answer: d
Explanation: Given the line is parallel to profile plane and makes 45 degrees with profile plane. There will be no need for distance from a profile plane. The length of line from top view will be sin (45) x length of the line= sin (45) x 25 cm = 17.67 cm

10. The length of line parallel to one of the plane of projection planes will show same length if view of that line is drawn on to the plane.
a) True
b) False
View Answer
Answer: a
Explanation: The length of line parallel to one of the plane of projection planes will show same length if view of that line is drawn on to the plane because the projections on the plane to that line are parallel to other planes.

11. A line parallel to horizontal plane and at a distance of 10 units to it and both the end of line are 6 units away from the vertical plane. Which of the following statement is false?
a) The line parallel to vertical plane
b) The side view of line gives a point
c) The length of line in front view is 10 units
d) The length of line in top view is 6 units
View Answer
Answer: d
Explanation: The line which is equidistance from a plane is said to be parallel to it. The line which is parallel to two perpendicular planes will be perpendicular to other perpendicular plane to the earlier planes.

12. A line AB of length 12 inches is perpendicular to profile plane at distance of 6 inches from vertical plane and 3 inches from horizontal plane. The distance from line to xy reference line in top view is _____ inches.
a) 6
b) 3
c) 12
d) 0
View Answer
Answer: a
Explanation: Given the line perpendicular to profile plane. Top view gives the length of line and distance from the xy reference line which is the perpendicular distance from the line to vertical plane. It is given in question as 6 inches.

13. A line AB of length 3 m is perpendicular to vertical plane at distance of 2 m from profile plane and 0.5 m from horizontal plane. The distance from line to xy reference line in front view is _____ m.
a) 1.5
b) 0.5
c) 2
d) 3
View Answer
Answer: b
Explanation: Given the line perpendicular to vertical plane. Front view shows as point and distance from the xy reference line and vertical reference line. The distance from horizontal plane is given in question as 0.5 m.

14. A line AB of length 24 cm is parallel to vertical plane and perpendicular to profile plane held at a distance of 5 cm away from horizontal plane and 6 cm away from the vertical plane. The distance from xy reference line to line AB is _____ cm in top view.
a) 6
b) 12
c) 5
d) 7.8
View Answer
Answer: a
Explanation: Asked for top view, which gives the distance from vertical plane and profile plane because the top view is parallel to horizontal plane. Also given the line is perpendicular to profile plane. the distance from xy reference line to line AB will be 6 cm.

15. A line AB of length 24 cm is parallel to vertical plane and perpendicular to profile plane held at a distance of 5 cm away from horizontal plane and 6 cm away from the vertical plane. The distance from xy reference line to line AB is _____ cm in front view.
a) 6
b) 12
c) 5
d) 7.8
View Answer
Answer: c
Explanation: Asked for front view, which gives the distance from horizontal plane and profile plane because the front view is parallel to vertical plane. Also given the line is perpendicular to profile plane. the distance from xy reference line to line AB will be 5 cm.

Engineering Drawing Questions and Answers – Basics of Planes

This set of Engineering Drawing Multiple Choice Questions & Answers (MCQs) focuses on “Basics of Planes”.

1. Oblique planes come under _____
a) planes perpendicular to both reference planes
b) planes perpendicular to one reference plane and inclined to other reference plane
c) planes inclined to both the reference planes
d) planes parallel to one reference plane and perpendicular to other reference plane
View Answer
Answer: c
Explanation: Planes may be divided into two main types. i. Perpendicular planes and ii.

Oblique planes, planes which are held inclined to both the reference planes are called oblique planes, the rest come under perpendicular planes.

2. The planes which are perpendicular to both the reference plane (horizontal and vertical) are visible clearly only if we watched from _____
a) front view
b) top view
c) side view
d) isometric view
View Answer
Answer: c
Explanation: As the required plane is perpendicular to both horizontal plane and vertical plane the top view and front view gives a line in projections so only from side which is perpendicular to both the plane as the required plane the object will appear clearly isometric view also will not give vivid picture.

3. A plane is held parallel to horizontal plane in which view we can watch drawing on that plane?
a) Top view
b) Front view
c) Back view
d) Side view
View Answer
Answer: a
Explanation: If a plane is parallel to one of the reference plane the projection parallel to plane gives the true shape and size as here plane is parallel to horizontal plane the actual shape is watched from a top view.

4. A circle is placed at 20 degrees with vertical the view from top view will be _____
a) line
b) circle
c) ellipse
d) oval
View Answer
Answer: c
Explanation: If a circle is parallel to one of the reference plane the projection parallel to plane gives the true shape and size but here plane is inclined so circle transformed to ellipse. If observer also inclined along with plane the circle will remain circle only.

5. A square is held 30 degrees with horizontal plane and turned 30 degrees with respect to vertical plane keeping earlier condition constant. The top view will be _____
a) line
b) square
c) rectangle
d) parallelogram
View Answer
Answer: c
Explanation: If a square is parallel to one of the reference plane the projection parallel to plane gives the true shape and size as here plane is inclined so square transformed to rectangle and further it turned parallel to observer so no change in shape and size.

6. A square is held 30 degrees with horizontal plane and turned 30 degrees with respect to vertical plane keeping earlier condition constant. The front view will be _____
a) line
b) square
c) rectangle
d) parallelogram
View Answer
Answer: d
Explanation: If a square is parallel to one of the reference plane the projection parallel to plane gives the true shape and size as here plane is inclined so square transformed to rectangle and further it turned inclined in other way which gives parallelogram shape for square.

7. A triangle is placed perpendicular to both the reference planes (horizontal and vertical plane) which of the following statement is true.
a) Front view-line, top view- triangle
b) Front view-triangle, top view- line
c) Front view –line, top view-line
d) Front view-triangle, side view- line
View Answer
Answer: c
Explanation: The plane which is perpendicular to both the reference planes (horizontal and vertical plane) is called profile plane or picture plane. The planes parallel to these have a top view and front view as straight line.

8. When a plane is perpendicular to both the reference planes, its traces are perpendicular to _____
a) xy reference line
b) lines on horizontal plane
c) lines on vertical plane
d) lines on given plane
View Answer
Answer: a
Explanation: When a plane is perpendicular to both the reference planes, its traces are perpendicular to xy reference line and intersect at xy reference line even when the planes are inclined with both reference planes the traces intersect at xy line.

9. A plane perpendicular to vertical plane and inclined to horizontal plane then the vertical trace of that plane will be _____
a) parallel to horizontal plane
b) perpendicular to horizontal plane
c) parallel to xy reference line
d) inclined to horizontal plane
View Answer
Answer: d
Explanation: When a plane is perpendicular to one of the reference planes and inclined to the other, its inclination is shown by the angle which its projection on the plane to which it is perpendicular, makes with xy. Its projection on the plane to which it is inclined, is smaller than the plane itself.

10. A plane parallel to vertical plane then which of the following is false statement.
a) vertical trace will not present
b) horizontal trace is parallel to xy
c) front view give true shape and size
d) top view give true shape and size
View Answer
Answer: d
Explanation: When a plane is parallel to a reference plane, it has no trace on that plane. Its trace on the other reference plane, to which the earlier reference plane is perpendicular, is parallel to xy reference line.

11. When a plane is perpendicular to a reference plane, its projection on that plane shows its true shape and size.
a) True
b) False
View Answer
Answer: b
Explanation: When a plane is perpendicular to a reference plane, its projection on that plane is a straight line. When a plane is parallel to a reference plane, its projection on that plane shows its true shape and size.

12. The traces of plane are not intersecting at xy reference line then the plane is _____
a) inclined to H.P and perpendicular to V.P
b) parallel to H.P and perpendicular to V.P
c) perpendicular to both reference planes
d) inclined to V.P and perpendicular to H.P
View Answer
Answer: b
Explanation: When a plane has two traces, they, produced if necessary, intersect in xy except when both are parallel to xy reference line as in case of some oblique planes. And in those some specific are plane parallel to one reference and perpendicular to other

Engineering Drawing Questions and Answers – Projection of Planes Parallel to one of the Reference Plane

This set of Engineering Drawing Questions and Answers for Campus interviews focuses on “Projection of Planes Parallel to one of the Reference Plane”.

1. An equilateral triangle of side 10 cm is held parallel to horizontal plane and base is parallel to xy reference line. The length of line from front view will be _____
a) 8.66 cm
b) 10 cm
c) 0 cm
d) 12.47 cm
View Answer
Answer: b
Explanation: Just by visualizing we can get picture and then as the base is parallel to xy reference plane the side view and front view will be a line and front view gives line of length equal to side of triangle given and side view gives the height of triangle.

2. A square of side 10 cm is held parallel to vertical plane and one diagonal is perpendicular to xy reference plane. The length of line in top view will be _____
a) 10 cm
b) 14.14 cm
c) 7.07 cm
d) 0 cm
View Answer
Answer: b
Explanation: Given the square is parallel to vertical plane ad diagonal is perpendicular to xy reference plane the top view and side gives a line and both of same length which is equal to diagonal length L= 2 x $\sqrt{(5^2+5^2)}$ = 14.14 cm.

3. A hexagon is placed parallel to vertical plane which of the following projection is true?
a) Front view-line, top view- hexagon
b) Front view- hexagon, top view- line
c) Front view –line, top view-line
d) Top view- hexagon, side view- line
View Answer
Answer: b
Explanation: Given a hexagon parallel to vertical plane so the plane containing hexagon in perpendicular to horizontal plane and profile plane. The top view and side view gives a line and front view gives the true shape and size of hexagon.

4. A pentagon is placed parallel to horizontal plane which of the following projection is true?
a) Front view-line, top view- pentagon
b) Front view- pentagon, top view- line
c) Front view –line, top view-line
d) Top view- line, side view- line
View Answer
Answer: a
Explanation: Given a pentagon parallel to horizontal plane so the plane containing pentagon in perpendicular to vertical plane and profile plane. The front view and side view gives a line and top view gives the true shape and size of pentagon.

5. A rectangle is placed parallel to profile plane which of the following projection is true?
a) Front view-line, top view- rectangle
b) Front view- rectangle, top view- line
c) Front view –line, top view-line

d) Top view- rectangle, side view- line
View Answer
Answer: c
Explanation: Given a rectangle parallel to profile plane so the plane containing rectangle in perpendicular to horizontal plane and vertical plane. The top view and front view gives a line and side view gives the true shape and size of hexagon.

6. A circle is placed parallel to vertical plane which of the following projection is false?
a) Front view-circle, top view- line
b) Length in top view and side view will be same
c) Circle is perpendicular to horizontal plane
d) The traces of plane containing this circle intersect at xy reference line
View Answer
Answer: d
Explanation: Given a circle parallel to vertical plane so the plane containing circle is perpendicular to horizontal plane and profile plane. The top view and side view gives a line and front view gives the true shape and size of circle. The traces will intersect at line formed by intersection of profile plane and horizontal plane.

7. An ellipse is placed parallel to vertical plane which of the following projection is false?
a) Front view-ellipse, top view- line
b) Length in top view and side view will be same
c) Ellipse is perpendicular to horizontal plane
d) The traces of plane containing this circle will not intersect at xy reference line
View Answer
Answer: b
Explanation: Given an ellipse parallel to vertical plane so the plane containing ellipse is perpendicular to horizontal plane and profile plane. The top view and side view gives a line and front view gives the true shape and size of hexagon. As the object is ellipse which has major and minor axis the views show different lengths.

8. While drawing projections if a triangle is parallel to horizontal plane, top should be drawn first and projections are drawn to it to get front view.
a) True
b) False
View Answer
Answer: a
Explanation: Given a triangle parallel to horizontal plane so the front view and side view

gives a line and top view gives the true shape and size of triangle so top view should be drawn first with specifications given and then projections to further gives the front view.

9. If a plane is parallel to one of the reference plane then the projection onto the other reference planes would be a line.
a) True
b) False
View Answer
Answer: a
Explanation: If a plane is only parallel to vertical plane then it is perpendicular to horizontal plane and profile plane. The top view and side view gives a line and front view gives the true shape and size of plane.

10. An equilateral triangle of side 10 cm is held parallel to horizontal plane and base is parallel to xy reference line. The length of line from side view will be _____
a) 8.66 cm
b) 10 cm
c) 0 cm
d) 12.47 cm
View Answer
Answer: a
Explanation: Just by visualizing we can get picture and then as the base is parallel to xy reference plane the side view and front view will be a line and front view gives line of length equal to side of triangle given and side view gives the height of triangle.

11. A square of side 10 cm is held parallel to vertical plane and one diagonal is making 45 degrees with xy reference plane. The length of line in top view will be _____
a) 10 cm
b) 14.14 cm
c) 7.07 cm
d) 0 cm
View Answer
Answer: a
Explanation: Given the square is parallel to vertical plane ad diagonal is making 45 degrees with xy reference plane the top view and side gives a line and both of same length which is equal to length of side of square because in square angle between the diagonal and side is 45 degrees.

12. The top view, front view and side view of a triangle parallel to vertical plane, circle parallel to profile plane and rectangle parallel to horizontal plane respectively are _____

a) line, circle, line
b) triangle, line, rectangle
c) triangle, line, line
d) line, line, line
View Answer
Answer: d
Explanation: If a plane is parallel to vertical plane then the top view and side view gives a line and front view gives the true shape. If a plane is parallel to horizontal plane then the front view and side view gives a line and top view gives the true shape. If a plane is parallel to profile plane then the top view and front view gives a line and side view gives the true shape

Engineering Drawing Questions and Answers – Basics of Solids

This set of Engineering Drawing Multiple Choice Questions & Answers (MCQs) focuses on "Drawing Tools and their Uses – 1".

1. The minimum number of orthographic view required to represent a solid on flat surface is _____

a) 1
b) 2
c) 3
d) 4
View Answer
Answer: b
Explanation: A solid has 3 dimensions length, breadth and thickness. A single view represents any of the two dimensions of a solid and other represents, other set of two dimensions, so that we can understand whole geometry.

2. Match the following

	Polyhedron		Number of faces
1.	Triangular Prism	i.	6
2.	Tetrahedron	ii.	5
3.	Octahedron	iii.	4

4.	Cube	iv.	8

a) 1, i; 2, ii; 3, iii; 4, iv
b) 1, ii; 2, iii; 3, iv; 4, i
c) 1, ii; 2, iv; 3, i; 4, iii
d) 1, iv; 2, iii; 3, ii; 4, i
View Answer
Answer: b
Explanation: A polyhedron is defined as a solid bounded by planes called faces. Prism is a polyhedron having two equal and similar faces (bases or ends), parallel to each other and joined by other faces which are rectangles.

3. Match the following

	Prisms		Number of edges
1.	Triangular	i.	18
2.	Square	ii.	15
3.	Pentagon	iii.	9
4.	Hexagonal	iv.	12

a) 1, i; 2, ii; 3, iii; 4, iv
b) 1, iii; 2, ii; 3, iv; 4, i
c) 1, iii; 2, iv; 3, ii; 4, i
d) 1, iv; 2, iii; 3, ii; 4, i
View Answer
Answer: c
Explanation: Prism is a polyhedron having two equal and similar faces (bases or ends), parallel to each other and joined by other faces which are rectangles. So there exist 3 x number of sides of base of edges in prism.

4. The number of corners that exist in pyramids is 1+ number of sides of base.
a) True
b) False
View Answer
Answer: a
Explanation: A pyramid is a polyhedron having a plane figure as a base and a number of

triangular faces meeting at a point called vertex or apex. The imaginary line joining the apex with the center of the base is its axis.

5. Match the following

	Prisms		Number of vertices
1.	Triangular	i.	12
2.	Square	ii.	10
3.	Pentagon	iii.	6
4.	Hexagonal	iv.	8

a) 1, i; 2, ii; 3, iii; 4, iv
b) 1, iii; 2, ii; 3, iv; 4, i
c) 1, iii; 2, iv; 3, ii; 4, i
d) 1, iv; 2, iii; 3, ii; 4, i
View Answer
Answer: c
Explanation: Prism is a polyhedron which has two equal faces (bases or ends), parallel to each other and joined by other faces which are rectangles. So there exist 2 x number of sides of base of vertices in prism.

6. Solid of revolution gets same shapes in at least two in three orthographic views.
a) True
b) False
View Answer
Answer: a
Explanation: Solids of revolutions are formed by revolving particular shaped plane surface about particular axis or about one of sides of plane surface so generally because of this any two orthographic views look similar.

7. If a right angled triangle is made to revolute about one of its perpendicular sides the solid formed is _____
a) cube
b) triangular prism
c) cone
d) cylinder
View Answer
Answer: c
Explanation: A right circular cone is a solid generated by the revolution of a right angled triangle about one of its perpendicular sides which is fixed. It has one circular base and one vertex. Its axis joins the vertex to center of circle (base) to which it is perpendicular.

8. Match the following

	Polyhedron		Number of faces
1.	Triangular Prism	i.	8
2.	Tetrahedron	ii.	9
3.	Octahedron	iii.	6
4.	Cube	iv.	12

a) 1, i; 2, ii; 3, iii; 4, iv
b) 1, ii; 2, iii; 3, iv; 4, i
c) 1, ii; 2, iv; 3, i; 4, iii
d) 1, iv; 2, iii; 3, ii; 4, i
View Answer
Answer: b
Explanation: A polyhedron is defined as a solid bounded by planes called faces. Prism is a polyhedron having two equal and similar faces (bases or ends), parallel to each other and joined by other faces which are rectangles.

9. Match the following

	Prisms		Number of vertices
1.	Triangular	i.	7
2.	Square	ii.	6

3.	Pentagon	iii.	5
4.	Hexagonal	iv.	4

a) 1, i; 2, ii; 3, iii; 4, iv
b) 1, iii; 2, ii; 3, iv; 4, i
c) 1, iii; 2, iv; 3, ii; 4, i
d) 1, iv; 2, iii; 3, ii; 4, i
View Answer
Answer: d
Explanation: A pyramid is a polyhedron having a plane figure as a base and a number of triangular faces meeting at a point called vertex or apex. So there exists 1+ number of sides of base of vertices in pyramid. In pyramid the number of vertices is equal to number of faces.

10. Match the following

	Prisms		Number of vertices
1.	Triangular	i.	12
2.	Square	ii.	8
3.	Pentagon	iii.	6
4.	Hexagonal	iv.	10

a) 1, i; 2, ii; 3, iii; 4, iv
b) 1, iii; 2, ii; 3, iv; 4, i
c) 1, iii; 2, iv; 3, ii; 4, i
d) 1, iv; 2, iii; 3, ii; 4, i
View Answer
Answer: b
Explanation: A pyramid is a polyhedron having a plane figure as a base and a number of triangular faces meeting at a point called vertex or apex. The imaginary lie joining the apex with the center of the base is its axis. So there exists 2 x number of sides of base of edges in a pyramid.

11. When a pyramid or a cone is cut by a plane parallel to its base, thus removing the top portion, the remaining portion is called _____
a) cylinder
b) frustum
c) prism
d) polyhedron
View Answer
Answer: b
Explanation: When a pyramid or a cone is cut by a plane parallel to its base, thus removing the top portion, the remaining portion is called its frustum. When a solid is cut by a plane inclined to the base it is said to be truncated.

12. Straight lines drawn from the apex to the circumference of the base-circle are all equal and are called _____
a) edges
b) connecting lines
c) projectors
d) generators
View Answer
Answer: d
Explanation: In a cone, the straight lines drawn from the apex to the circumference of the base-circle are all equal and are called generators of the cone. The length of the generator is the slant height of the cone.

13. The solid formed by 12 equal and regular pentagons as faces is called _____
a) plantonic solid
b) dodacahedron
c) Icosahedron
d) pyritohedron
View Answer
Answer: b
Explanation: Plantonic solid is a regular convex polyhedron. Dodecahedron is one of the plantonic solid. Icosahedron is a solid which has twenty equal sized equilateral triangles as faces. Pyritohedron is the irregular dodecahedron.

Engineering Drawing Questions and Answers – Construction of Ellipse – 1

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This set of Engineering Drawing Multiple Choice Questions & Answers (MCQs) focuses on "Construction of Ellipse – 1".

1. Which of the following is incorrect about Ellipse?
a) Eccentricity is less than 1
b) Mathematical equation is $X^2/a^2 + Y^2/b^2 = 1$
c) If a plane is parallel to axis of cone cuts the cone then the section gives ellipse
d) The sum of the distances from two focuses and any point on the ellipse is constant
View Answer
Answer: c
Explanation: If a plane is parallel to the axis of cone cuts the cone then the cross-section gives hyperbola. If the plane is parallel to base it gives circle. If the plane is inclined with an angle more than the external angle of cone it gives parabola. If the plane is inclined and cut every generators then it forms an ellipse.

2. Which of the following constructions doesn't use elliptical curves?
a) Cooling towers
b) Dams
c) Bridges
d) Man-holes
View Answer
Answer: a
Explanation: Cooling towers, water channels use Hyperbolic curves as their design. Arches, Bridges, sound reflectors, light reflectors etc use parabolic curves. Arches, bridges, dams, monuments, man-holes, glands and stuffing boxes etc use elliptical curves.

3. The line which passes through the focus and perpendicular to the major axis is _____
a) Minor axis
b) Latus rectum
c) Directrix
d) Tangent
View Answer
Answer: b
Explanation: The line bisecting the major axis at right angles and terminated by curve is called the minor axis. The line which passes through the focus and perpendicular to the major axis is latus rectum. Tangent is the line which touches the curve at only one point.

4. Which of the following is the eccentricity for an ellipse?
a) 1
b) 3/2
c) 2/3
d) 5/2
View Answer
Answer: c
Explanation: The eccentricity for ellipse is always less than 1. The eccentricity is always 1 for any parabola. The eccentricity is always 0 for a circle. The eccentricity for a hyperbola is always greater than 1.

5. Axes are called conjugate axes when they are parallel to the tangents drawn at their extremes.
a) True
b) False
View Answer
Answer: a
Explanation: In ellipse there exist two axes (major and minor) which are perpendicular to each other, whose extremes have tangents parallel them. There exist two conjugate axes for ellipse and 1 for parabola and hyperbola.

6. Steps are given to draw an ellipse by loop of the thread method. Arrange the steps.
i. Check whether the length of the thread is enough to touch the end of minor axis.
ii. Draw two axes AB and CD intersecting at O. Locate the foci F1 and F2.
iii. Move the pencil around the foci, maintaining an even tension in the thread throughout and obtain the ellipse.
iv. Insert a pin at each focus-point and tie a piece of thread in the form of a loop around the pins.
a) i, ii, iii, iv
b) ii, iv, i, iii
c) iii, iv, i, ii
d) iv, i, ii, iii
View Answer
Answer: b
Explanation: This is the easiest method of drawing ellipse if we know the distance between the foci and minor axis, major axis. It is possible since ellipse can be traced by a point, moving in the same plane as and in such a way that the sum of its distances from two foci is always the same.

7. Steps are given to draw an ellipse by trammel method. Arrange the steps.
i. Place the trammel so that R is on the minor axis CD and Q on the major axis AB. Then P will be on the ellipse.
ii. Draw two axes AB and CD intersecting each other at O.
iii. By moving the trammel to new positions, always keeping R on CD and Q on AB, obtain other points and join those to get an ellipse.
iv. Along the edge of a strip of paper which may be used as a trammel, mark PQ equal to half the minor axis and PR equal to half of major axis.
a) i, ii, iii, iv
b) ii, iv, i, iii
c) iii, iv, i, ii
d) iv, i, ii, iii
View Answer
Answer: b
Explanation: This method uses the trammels PQ and PR which ends Q and R should be placed on major axis and minor axis respectively. It is possible since ellipse can be traced by a point, moving in the same plane as and in such a way that the sum of its distances from two foci is always the same.

8. Steps are given to draw a normal and a tangent to the ellipse at a point Q on it. Arrange the steps.
i. Draw a line ST through Q and perpendicular to NM.
ii. ST is the required tangent.
iii. Join Q with the foci F1 and F2.
iv. Draw a line NM bisecting the angle between the lines drawn before which is normal.
a) i, ii, iii, iv
b) ii, iv, i, iii
c) iii, iv, i, ii
d) iv, i, ii, iii
View Answer
Answer: c
Explanation: Tangents are the lines which touch the curves at only one point. Normals are perpendiculars of tangents. As in the circles first, we found the normal using foci (centre in circle) and then perpendicular at given point gives tangent.

9. Which of the following is not belonged to ellipse?
a) Latus rectum
b) Directrix
c) Major axis
d) Asymptotes
View Answer

Answer: d
Explanation: Latus rectum is the line joining one of the foci and perpendicular to the major axis. Asymptotes are the tangents which meet the hyperbola at infinite distance. Major axis consists of foci and perpendicular to the minor axis

Engineering Drawing Questions and Answers – Construction of Parabola

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This set of Engineering Drawing Multiple Choice Questions & Answers (MCQs) focuses on "Construction of Parabola".

1. Which of the following is incorrect about Parabola?
a) Eccentricity is less than 1
b) Mathematical equation is $x^2 = 4ay$
c) Length of latus rectum is 4a
d) The distance from the focus to a vertex is equal to the perpendicular distance from a vertex to the directrix
View Answer
Answer: a
Explanation: The eccentricity is equal to one. That is the ratio of a perpendicular distance from point on curve to directrix is equal to distance from point to focus. The eccentricity is less than 1 for an ellipse, greater than one for hyperbola, zero for a circle, one for a parabola.

2. Which of the following constructions use parabolic curves?
a) Cooling towers
b) Water channels
c) Light reflectors
d) Man-holes
View Answer
Answer: c
Explanation: Arches, Bridges, sound reflectors, light reflectors etc use parabolic curves. Cooling towers, water channels use Hyperbolic curves as their design. Arches, bridges, dams, monuments, man-holes, glands and stuffing boxes etc use elliptical curves.

3. The length of the latus rectum of the parabola y2 =ax is _____
a) 4a
b) a

c) a/4
d) 2a
View Answer
Answer: b
Explanation: Latus rectum is the line perpendicular to axis and passing through focus ends touching parabola. Length of latus rectum of $y^2 = 4ax$, $x^2 = 4ay$ is 4a; $y^2 = 2ax$, $x^2 = 2ay$ is 2a; $y^2 = ax$, $x^2 = ay$ is a.

4. Which of the following is not a parabola equation?
a) $x^2 = 4ay$
b) $y^2 – 8ax = 0$
c) $x^2 = by$
d) $x^2 = 4ay^2$
View Answer
Answer: d
Explanation: The remaining represents different forms of parabola just by adjusting them we can get general notation of parabola but $x^2 = 4ay^2$ gives equation for hyperbola. And $x^2 + 4ay^2 = 1$ gives equation for ellipse.

5. The parabola $x^2 = ay$ is symmetric about x-axis.
a) True
b) False
View Answer
Answer: b
Explanation: From the given parabolic equation $x^2 = ay$ we can easily say if we give y values to that equation we get two values for x so the given parabola is symmetric about y-axis. If the equation is $y^2 = ax$ then it is symmetric about x-axis.

6. Steps are given to find the axis of a parabola. Arrange the steps.
i. Draw a perpendicular GH to EF which cuts parabola.
ii. Draw AB and CD parallel chords to given parabola at some distance apart from each other.
iii. The perpendicular bisector of GH gives axis of that parabola.
iv. Draw a line EF joining the midpoints lo AB and CD.
a) i, ii, iii, iv
b) ii, iv, i, iii
c) iii, iv, i, ii
d) iv, i, ii, iii
View Answer

Answer: b
Explanation: First we drawn the parallel chords and then line joining the midpoints of the previous lines which is parallel to axis so we drawn the perpendicular to this line and then perpendicular bisector gives the axis of parabola.

7. Steps are given to find focus for a parabola. Arrange the steps.
i. Draw a perpendicular bisector EF to BP, Intersecting the axis at a point F.
ii. Then F is the focus of parabola.
iii. Mark any point P on the parabola and draw a perpendicular PA to the axis.
iv. Mark a point B on the on the axis such that BV = VA (V is vertex of parabola). Join B and P.
a) i, ii, iii, iv
b) ii, iv, i, iii
c) iii, iv, i, ii
d) iv, i, ii, iii
View Answer
Answer: c
Explanation: Initially we took a parabola with axis took any point on it drawn a perpendicular to axis. And from the point perpendicular meets the axis another point is taken such that the vertex is equidistant from before point and later point. Then from that one to point on parabola a line is drawn and perpendicular bisector for that line meets the axis at focus.

8. Which of the following is not belonged to ellipse?
a) Latus rectum
b) Directrix
c) Major axis
d) Axis
View Answer
Answer: c
Explanation: Latus rectum is the line joining one of the foci and perpendicular to the major axis. Major axis and minor axis are in ellipse but in parabola, only one focus and one axis exist since eccentricity is equal to 1.

Engineering Drawing Questions and Answers – Construction of Hyperbola

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This set of Engineering Drawing Multiple Choice Questions & Answers (MCQs) focuses on “Construction of Hyperbola”.

1. Which of the following is Hyperbola equation?
a) $y^2 + x^2/b^2 = 1$
b) $x^2 = 1ay$
c) $x^2 /a^2 – y^2/b^2 = 1$
d) $X^2 + Y^2 = 1$
View Answer
Answer: c
Explanation: The equation $x^2 + y^2 = 1$ gives a circle; if the x^2 and y^2 have same co-efficient then the equation gives circles. The equation $x^2 = 1ay$ gives a parabola. The equation $y^2 + x^2/b^2 = 1$ gives an ellipse.

2. Which of the following constructions use hyperbolic curves?
a) Cooling towers
b) Dams
c) Bridges
d) Man-holes
View Answer
Answer: a
Explanation: Cooling towers, water channels use Hyperbolic curves as their design. Arches, Bridges, sound reflectors, light reflectors etc use parabolic curves. Arches, bridges, dams, monuments, man-holes, glands and stuffing boxes etc use elliptical curves.

3. The lines which touch the hyperbola at an infinite distance are _____
a) Axes
b) Tangents at vertex
c) Latus rectum
d) Asymptotes
View Answer
Answer: d
Explanation: Axis is a line passing through the focuses of a hyperbola. The line which passes through the focus and perpendicular to the major axis is latus rectum. Tangent is the line which touches the curve at only one point.

4. Which of the following is the eccentricity for hyperbola?
a) 1
b) 3/2
c) 2/3
d) 1/2
View Answer

Answer: b
Explanation: The eccentricity for an ellipse is always less than 1. The eccentricity is always 1 for any parabola. The eccentricity is always 0 for a circle. The eccentricity for a hyperbola is always greater than 1.

5. If the asymptotes are perpendicular to each other then the hyperbola is called rectangular hyperbola.
a) True
b) False
View Answer
Answer: a
Explanation: In ellipse there exist two axes (major and minor) which are perpendicular to each other, whose extremes have tangents parallel them. There exist two conjugate axes for ellipse and 1 for parabola and hyperbola.

6. A straight line parallel to asymptote intersects the hyperbola at only one point.
a) True
b) False
View Answer
Answer: a
Explanation: A straight line parallel to asymptote intersects the hyperbola at only one point. This says that the part of hyperbola will lay in between the parallel lines through outs its length after intersecting at one point.

7. Steps are given to locate the directrix of hyperbola when axis and foci are given. Arrange the steps.
i. Draw a line joining A with the other Focus F.
ii. Draw the bisector of angle FAF1, cutting the axis at a point B.
iii. Perpendicular to axis at B gives directrix.
iv. From the first focus F1 draw a perpendicular to touch hyperbola at A.
a) i, ii, iii, iv
b) ii, iv, i, iii
c) iii, iv, i, ii
d) iv, i, ii, iii
View Answer
Answer: d
Explanation: The directrix cut the axis at the point of intersection of the angular bisector of lines passing through the foci and any point on a hyperbola. Just by knowing this we can find the directrix just by drawing perpendicular at that point to axis.

8. Steps are given to locate asymptotes of hyperbola if its axis and focus are given. Arrange the steps.
i. Draw a perpendicular AB to axis at vertex.
ii. OG and OE are required asymptotes.
iii. With O midpoint of axis (centre) taking radius as OF (F is focus) draw arcs cutting AB at E, G.
iv. Join O, G and O, E.
a) i, iii, iv, ii
b) ii, iv, i, iii
c) iii, iv, i, ii
d) iv, i, ii, iii
View Answer
Answer: b
Explanation: Asymptotes pass through centre is the main point and then the asymptotes cut the directrix and perpendiculars at focus are known and simple. Next comes is where the asymptotes cuts the perpendiculars, it is at distance of centre to vertex and centre to focus respectively.

9. The asymptotes of any hyperbola intersects at _____
a) On the directrix
b) On the axis
c) At focus
d) Centre
View Answer
Answer: d
Explanation: The asymptotes intersect at centre that is a midpoint of axis even for conjugate axis it is valid. Along with the hyperbola asymptotes are also symmetric about both axes so they should meet at centre only.

Engineering Drawing Questions and Answers – Construction of Cycloidal Curves

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This set of Engineering Drawing Multiple Choice Questions & Answers (MCQs) focuses on “Construction of Cycloidal Curves”.

1. _____ is a curve generated by a point fixed to a circle, within or outside its circumference, as the circle rolls along a straight line.
a) Cycloid
b) Epicycloid
c) Epitrochoid
d) Trochoid
View Answer

Answer: d
Explanation: Cycloid form if generating point is on the circumference of generating a circle. Epicycloid represents generating circle rolls on the directing circle. Epitrochoid is that the generating point is within or outside the generating circle but generating circle rolls on directing circle.

2. _____ is a curve generated by a point on the circumference of a circle, which rolls without slipping along another circle outside it.
a) Trochoid
b) Epicycloid
c) Hypotrochoid
d) Involute
View Answer
Answer: b
Explanation: Trochoid is curve generated by a point fixed to a circle, within or outside its circumference, as the circle rolls along a straight line. ‘Hypo’ represents the generating circle is inside the directing circle.

3. _____ is a curve generated by a point on the circumference of a circle which rolls without slipping on a straight line.
a) Trochoid
b) Epicycloid
c) Cycloid
d) Evolute
View Answer
Answer: c
Explanation: Trochoid is curve generated by a point fixed to a circle, within or outside its circumference, as the circle rolls along a straight line. Cycloid is a curve generated by a point on the circumference of a circle which rolls along a straight line. ‘Epi’ represents the directing path is a circle.

4. When the circle rolls along another circle inside it, the curve is called a _____
a) Epicycloid
b) Cycloid
c) Trochoid
d) Hypocycloid
View Answer
Answer: d
Explanation: Cycloid is a curve generated by a point on the circumference of a circle which

rolls along a straight line. ‘Epi’ represents the directing path is a circle. Trochoid is a curve generated by a point fixed to a circle, within or outside its circumference, as the circle rolls along a straight line. ‘Hypo’ represents the generating circle is inside the directing circle

Engineering Drawing Questions and Answers – Construction of Involute

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This set of Engineering Drawing Multiple Choice Questions & Answers (MCQs) focuses on “Construction of Involute”.

1. Mathematical equation for Involute is _____
a) $x = a \cos^3 \theta$
b) $x = r \cos\theta + r\,\theta \sin\theta$
c) $x = (a+b)\cos\theta - a \cos(\frac{a+b}{a}\theta)$
d) $y = a(1-\cos\theta)$
View Answer
Answer: b
Explanation: x= a cos3 Ɵ is equation for hypocycloid, x= (a+ b) cosƟ – a cos ((a+b)/aƟ) is equation for epicycloid, y = a (1-cosƟ) is equation for cycloid and x = r cosƟ + r Ɵ sinƟ is equation for Involute.

2. Steps are given to draw involute of given circle. Arrange the steps f C is the centre of circle and P be the end of the thread (starting point).
i. Draw a line PQ, tangent to the circle and equal to the circumference of the circle.
ii. Draw the involute through the points P1, P2, P3 ……..etc.
iii. Divide PQ and the circle into 12 equal parts.
iv. Draw tangents at points 1, 2, 3 etc. and mark on them points P1, P2, P3 etc. such that 1P1 =P1l, 2P2 = P2l, 3P3= P3l etc.
a) ii, i, iv, iii
b) iii, i , iv, ii
c) i, iii, iv, ii
d) iv, iii, i, ii
View Answer
Answer: c
Explanation: Involute is a curve which is formed by the thread which is yet complete a single wound around a circular object so thus the thread having length equal to the circumference of the circular object. And the involute curve follows only the thread is kept straight while wounding.

3. Steps are given to draw tangent and normal to the involute of a circle (center is C) at a point N on it. Arrange the steps.
i. With CN as diameter describe a semi-circle cutting the circle at M.
ii. Draw a line joining C and N.
iii. Draw a line perpendicular to NM and passing through N which is tangent.
iv. Draw a line through N and M. This line is normal.
a) ii, i, iv, iii
b) iii, i , iv, ii
c) i, iii, iv, ii
d) iv, iii, i, ii
View Answer
Answer: a
Explanation: The normal to an involute of a circle is tangent to that circle. So simply by finding the appreciable tangent of circle passing through the point given on involute gives the normal and then by drawing perpendicular we can find the tangent to involute.

4. Steps given are to draw an involute of a given square ABCD. Arrange the steps.
i. With B as centre and radius BP1 (BA+ AD) draw an arc to cut the line CB-produced at P2.
ii. The curve thus obtained is the involute of the square.
iii. With centre A and radius AD, draw an arc to cut the line BA-produced at a point P1.
iv. Similarly, with centres C and D and radii CP2 and DP3 respectively, draw arcs to cut DC-produced at P3 and AD-produced at P4.
a) ii, i, iv, iii
b) iii, i , iv, ii
c) i, iii, iv, ii
d) iv, iii, i, ii
View Answer
Answer: b
Explanation: It is easy to draw involutes to polygons. First, we have to point the initial point and then extending the sides. Then cutting the extended lines with cumulative radiuses of length of sides gives the points on involute and then joining them gives involute.

5. Steps given are to draw an involute of a given triangle ABC. Arrange the steps.
i. With C as centre and radius C1 draw arc cutting AC-extended at 2.
ii. With A as center and radius A2 draw an arc cutting BA- extended at 3 completing involute.
iii. B as centre with radius AB draw an arc cutting the BC- extended at 1.
iv. Draw the given triangle with corners A, B, C.
a) ii, i, iv, iii
b) iii, i , iv, ii
c) i, iii, iv, ii

d) iv, iii, i, ii
View Answer
Answer: d
Explanation: It will take few simple steps to draw involute for a triangle since it has only 3 sides. First, we have to point the initial point and then extending the sides. Then cutting the extended lines with cumulative radiuses of length of sides gives the points on involute and then joining them gives involute.

6. Steps given are to draw an involute of a given pentagon ABCDE. Arrange the steps.
i. B as centre and radius AB, draw an arc cutting BC –extended at 1.
ii. The curve thus obtained is the involute of the pentagon.
iii. C as centre and radius C1, draw an arc cutting CD extended at 2.
iv. Similarly, D, E, A as centres and radius D2, E3, A4, draw arcs cutting DE, EA, AB at 3, 4, 5 respectively.
a) ii, i, iv, iii
b) iii, i , iv, ii
c) i, iii, iv, ii
d) iv, iii, i, ii
View Answer
Answer: c
Explanation: It is easy to draw involutes to polygons. First, we have to point the initial point and then extending the sides. Then cutting the extended lines with cumulative radiuses of length of sides gives the points on involute and then joining them gives involute.

7. For inferior trochoid or inferior epitrochoid the curve touches the directing line or directing circle.
a) True
b) False
View Answer
Answer: b
Explanation: Since in the inferior trochoids the generating point is inside the generating circle the path will be at a distance from directing line or circle even if the generating circle is inside or outside the directing circle.

8. ‘Hypo’ as prefix to cycloids give that the generating circle is inside the directing circle.
a) True
b) False
View Answer

Answer: a
Explanation: ‘Hypo’ represents the generating circle is inside the directing circle. ‘Epi’ represents the directing path is a circle. Trochoid represents the generating point is not on the circumference of generating a circle

Engineering Drawing Questions and Answers – Basics of Conic Sections – 1

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This set of Engineering Drawing Multiple Choice Questions & Answers (MCQs) focuses on “Basics of Conic Sections – 1”.

1. The sections cut by a plane on a right circular cone are called as _____
a) Parabolic sections
b) Conic sections
c) Elliptical sections
d) Hyperbolic sections
View Answer
Answer: b
Explanation: The sections cut by a plane on a right circular cone are called as conic sections or conics. The plane cuts the cone on different angles with respect to the axis of the cone to produce different conic sections.

2. Which of the following is a conic section?
a) Circle
b) Rectangle
c) Triangle
d) Square
View Answer
Answer: a
Explanation: Circle is a conic section. When the plane cuts the right circular cone at right angles with the axis of the cone, the shape obtained is called as a circle. If the angle is oblique we get the other parts of the conic sections.

3. In conics, the _____ is revolving to form two anti-parallel cones joined at the apex.
a) Ellipse
b) Circle
c) Generator
d) Parabola
View Answer

Answer: c
Explanation: In conics, the generator is revolving to form two anti-parallel cones joined at the apex. The plane is then made to cut these cones and we get different conic sections. If we cut at right angles with respect to the axis of the cone we get a circle.

4. While cutting, if the plane is at an angle and it cuts all the generators, then the conic formed is called as _____
a) Circle
b) Ellipse
c) Parabola
d) Hyperbola
View Answer
Answer: b
Explanation: If the plane cuts all the generators and is at an angle to the axis of the cone, then the resulting conic section is called as an ellipse. If the cutting angle was right angle and the plane cuts all the generators then the conic formed would be circle.

5. If the plane cuts at an angle to the axis but does not cut all the generators then what is the name of the conics formed?
a) Ellipse
b) Hyperbola
c) Circle
d) Parabola
View Answer
Answer: d
Explanation: If the plane cuts at an angle with respect to the axis and does not cut all the generators then the conics formed is a parabola. If the plane cuts all the generators then the conic section formed is called as ellipse.

6. When the plane cuts the cone at angle parallel to the axis of the cone, then _____ is formed.
a) Hyperbola
b) Parabola
c) Circle
d) Ellipse
View Answer
Answer: a
Explanation: When the plane cuts the cone at an angle parallel to the axis of the cone, then the resulting conic section is called as a hyperbola. If the plane cuts the cone at an angle

with respect to the axis of the cone then the resulting conic sections are called as ellipse and parabola.

7. Which of the following is not a conic section?
a) Apex
b) Hyperbola
c) Ellipse
d) Parabola
View Answer
Answer: a
Explanation: Conic sections are formed when a plane cuts through the cone at an angle with respect to the axis of the cone. If the angle is right angle then the conics is a circle, if the angle is oblique then the resulting conics are parabola and ellipse.

8. The locus of point moving in a plane such that the distance between a fixed point and a fixed straight line is constant is called as _____
a) Conic
b) Rectangle
c) Square
d) Polygon
View Answer
Answer: a
Explanation: The locus of a point moving in a plane such that the distance between a fixed point and a fixed straight line is always constant. The fixed straight line is called as directrix and the fixed point is called as the focus.

9. The ratio of the distance from the focus to the distance from the directrix is called as eccentricity.
a) True
b) False
View Answer
Answer: a
Explanation: The ratio of the distance from the focus to the distance from the directrix is called eccentricity. It is denoted as e. The value of eccentricity can give information regarding which type of conics it is.

10. Which of the following conics has an eccentricity of unity?
a) Circle
b) Parabola
c) Hyperbola
d) Ellipse
View Answer
Answer: b
Explanation: Eccentricity is defined as the ratio of the distance from the focus to the distance from the directrix. It is denoted as e. The value of eccentricity can give information regarding which type of conics it is. The eccentricity of a parabola is the unity that is 1.

11. Which of the following has an eccentricity less than one?
a) Circle
b) Parabola
c) Hyperbola
d) Ellipse
View Answer
Answer: d
Explanation: Eccentricity is defined as the ratio of the distance from the focus to the distance from the directrix. It is denoted as e. The value of eccentricity can give information regarding which type of conics it is. The eccentricity of an ellipse is less than one.

12. If the distance from the focus is 10 units and the distance from the directrix is 30 units, then what is the eccentricity?
a) 0.3333
b) 0.8333
c) 1.6667
d) 0.0333
View Answer
Answer: a
Explanation: Eccentricity is defined as the ratio of the distance from the focus to the distance from the directrix. Hence from the formula of eccentricity, e = 10 ÷ 30 = 0.3333. Since the value of eccentricity is less than one the conic is an ellipse.

13. If the value of eccentricity is 12, then what is the name of the conic?
a) Ellipse
b) Hyperbola
c) Parabola

d) Circle
View Answer
Answer: b
Explanation: Eccentricity is defined as the ration of the distance from the focus to the distance from the directrix. It is denoted as e. If the value of eccentricity is greater than unity then the conic section is called as a hyperbola.

14. If the distance from the focus is 3 units and the distance from the directrix is 3 units, then how much is the eccentricity?
a) Infinity
b) Zero
c) Unity
d) Less than one
View Answer
Answer: c
Explanation: Eccentricity is defined as the ration of the distance from the focus to the distance from the directrix and it is denoted as e. Hence from the definition, e = 3 ÷ 3 = 1. Hence the value of eccentricity is equal to unity.

15. If the distance from the focus is 2 mm and the distance from the directrix is 0.5 mm then what is the name of the conic section?
a) Circle
b) Ellipse
c) Parabola
d) Hyperbola
View Answer
Answer: d
Explanation: The eccentricity is defined as the ratio of the distance from the focus to the distance from the directrix. It is denoted as e. If the value of the eccentricity is greater than unity then the conic section is called as a hyperbola.

Engineering Drawing Questions and Answers – Construction of Evolutes and Helix

This set of Engineering Drawing Multiple Choice Questions & Answers (MCQs) focuses on “Construction of Evolutes and Helix”.

1. Steps are given to determine the centre of curvature at a given point on a conic. Arrange the steps. Let P be the given point on the conic and F is the focus.
Join P with F.
Draw a line NR perpendicular to PN and cutting PF or PF-extended at R.
Draw a line RO perpendicular to PR and cutting PN-extended at O which is centre of curvature.
At P, draw a normal PN, cutting the axis at N.
a) i, iv, ii, iii
b) iv, i, iii, ii
c) iii, i, iv, ii
d) ii, iv, i, iii
View Answer
Answer: a
Explanation: The centre O of the circle of curvature lies on the normal to the curve at P. This centre is called center of curvature at P. So for that, we first found normal and accordingly the curve we found center of curvature.

2. Steps are given to determine the centre of curvature at a given point on an Ellipse. Arrange the steps. Let P be the given point on the conic and F and F1 are the foci.
i. Produce F1G to H so that GH = VF. Join H with F.
ii. Then O is the required centre of curvature.
iii. Draw a line GO parallel to HF and intersecting the axis at O.
iv. Draw a line F1G inclines to the axis and equal to VF1.
a) i, iv, ii, iii
b) iv, i, iii, ii
c) iii, i, iv, ii
d) ii, iv, i, iii
View Answer
Answer: b
Explanation: First we just took the arbitrary line passing through one of the foci and then extended up to the length from that focus to opposite vertex and then extended further up to the length of the distance between the vertex and respective focus. Drawing parallel lines on to the focus gave us O.

3. Steps are given to determine the centre of curvature at a given point on an Ellipse. Arrange the steps. Let P be the given point on the conic and F is one of the focus.
i. Join A with C.
ii. Then O1 and O2 are the centres of curvature when the point P is at A and C respectively.
iii. Draw a rectangle AOCE in which AO = ½ major axis and CO = ½ minor axis.
iv. Through E, draw a line perpendicular to AC and cutting the major axis at O1 and the minor axis O2.
a) i, iv, ii, iii
b) iv, i, iii, ii
c) iii, i, iv, ii
d) ii, iv, i, iii
View Answer
Answer: c
Explanation: First we just took the arbitrary line passing through one of the foci and then extended up to the length from that focus to opposite vertex and then extended further up to the length of the distance between the vertex and respective focus. Drawing parallel lines on to the focus gave us O.

4. Steps are given to determine the centre of curvature at a given point on a hyperbola. Arrange the steps. Let P be the given point on the conic, V is vertex and F and F1 are the foci.
i. Draw a line GO parallel to HF and cutting the axis at O.
ii. Draw a line F1G inclined to the axis and equal to FV1.
iii. Then O is the centre of curvature at the vertex V.
iv. On F1G, mark a point H such that HG = VF. Join H with F.
a) i, iv, ii, iii
b) iv, i, iii, ii
c) iii, i, iv, ii
d) ii, iv, i, iii
View Answer
Answer: d
Explanation: First we just took the arbitrary line passing through one of the foci and then extended up to the length from that focus to opposite vertex and then extended further up to the length of the distance between the vertex and respective focus. Drawing parallel lines on to the focus gave us O.

5. Steps are given to draw the evolute of a cycloid. Arrange the steps.
i. Mark a point P on the cycloid and draw the normal PN to it.
ii. Similarly, mark a number of points on the cycloid and determine centres of curvature at these points.
iii. The curve drawn through these centres is the evolute of the cycloid. It is an equal cycloid.

iv. Produce PN to Op so that NOp = PN. Op is the centre of curvature at the point P.
a) i, iv, ii, iii
b) iv, i, iii, ii
c) iii, i, iv, ii
d) ii, iv, i, iii
View Answer
Answer: a
Explanation: Evolute is generally the locus of center of curvature from point on any curve. So for center of curvature we first need to draw normals at the point on curve and then center of curvature and then similarly other center of curvatures and joining the whole gives us the evolute.

6. Steps are given to draw the evolute of a hypocycloid. Arrange the steps.
i. Draw the diameter PQ of the rolling circle. Join Q with O, the centre of the directing circle.
ii. Mark a number of points on the hypocycloid and similarly, obtain centres of curvature at these points. The curve drawn through these centres is the evolute of the hypocycloid.
iii. Produce PN to cut OQ- produced at Op, which is the centre of curvature at the point P.
iv. Mark a point P on the hypocycloid and draw the normal PN to it.
a) i, iv, ii, iii
b) iv, i, iii, ii
c) iii, i, iv, ii
d) ii, iv, i, iii
View Answer
Answer: b
Explanation: Evolute is generally the locus of the center of curvature from a point on any curve. So for that we first found the center of curvature of a point and then similarly other joining the whole gives us the evolute.

7. The evolute of the involute of a circle is the circle itself.
a) True
b) False
View Answer
Answer: a
Explanation: In the involute of a circle, the normal NM at any point N is tangent to the circle at the point of contact M. M is the centre of curvature at the point N. Hence, the evolute of the involute is the circle itself.

8. The difference between two consecutive crest/root of a screw is called _____
a) Helix
b) Mean diameter
c) Pitch
d) Revolution
View Answer
Answer: b
Explanation: Mean diameter is the average of maximum diameter and the minimum diameter which is caused by the crest and root of screws, bolts etc. revolution is the one complete turn of helix around its own axis.

9. Pitch of the given bolt is 10 mm. The bolt completed the ½ revolution in the forward direction. How much the bolt advances through axis?
a) 10 mm
b) 5 mm
c) 2.5 mm
d) 20 mm
View Answer
Answer: b
Explanation: The axial advance of the point during one complete revolution is called the pitch of the helix. So here pitch is 10 mm and the point starts upwards from the base of the cylinder, in ½ revolutions, the point will move up to a distance of 5mm from the base.

10. Helix angle can be expressed as tanϴ = _____
a) $\frac{Pitch}{circumference\ of\ the\ circle}$
b) $\frac{circumference\ of\ the\ circle}{pitch}$
c) $\frac{Pitch}{mean\ diameter}$
d) $\frac{outer\ diameter}{inner\ diameter}$
View Answer
Answer: a
Explanation: The helix is seen as a straight line and is the hypotenuse of a right-angled triangle having base equal to the circumference of the circle and the vertical side equal to the pitch of the helix. The angle ϴ which it makes with the base, is called the helix angle.

11. Number of revolutions are 10 and the pitch is 2mm. Find the length of spring.
a) 10
b) 40
c) 30
d) 20
View Answer
Answer: d
Explanation: Here there is mention the type of edges of spring so there would be no additional length. Length of the bolt = pitch x number of revolutions, L = 2 mm x 10, L = 20 mm.

12. Length of spring is 5cm and the pitch measured is 4mm. Find the number of revolutions.
a) 20
b) 12.5
c) 13
d) 12
View Answer
Answer: d
Explanation: Here there is mention the type of edges of spring so there would be no additional length. Length of the bolt = pitch x number of revolutions, 5cm = 50 mm =4 x (r), r = 50/4 =12.5 mm

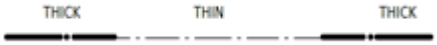
Engineering Drawing Questions and Answers – Basics of Section of Solids

This set of Engineering Drawing Multiple Choice Questions & Answers (MCQs) focuses on “Basics of Section of Solids”.

1. To understand some of the hidden geometry of components an imaginary plane is used to cut the object which is called _____
a) auxiliary plane
b) picture plane
c) section plane
d) additional plane
View Answer
Answer: c
Explanation: To understand some of the hidden geometry of components an imaginary plane is used to cut the object which is called section plane or cutting plane. The new imaginary face generated on the object is called the section.

2. Which of the following is not the purpose of using cutting (section) plane?
a) Interpretation of object
b) Visualizing of object
c) Cutting the objects
d) Invisible features
View Answer
Answer: c
Explanation: Section plane or cutting plane is an imaginary plane which is used to cut the object to visualize the geometry which is hidden inside the object and interpret it which plays an important role in designing many machine parts.

3. To find the true shape of the section, it must be projected on a plane parallel to the _____
a) Profile plane
b) Vertical plane
c) Auxiliary plane
d) Section plane
View Answer
Answer: d
Explanation: As we know true shape and size is obtained only when an object is projected on to the plane parallel to it. Likewise, as section always be plane surface to know its true shape it should be projected on to plane parallel to section plane only.

4. The type of line used to represent the cutting plane in drawing is.
a)
b)
c) 

d)
View Answer
Answer: c
Explanation: Continuous thick line is used for visible out-lines, dashed lines are used for line showing permissible surface treatment, long-dashed dotted lines are used for indication of surfaces for which a special requirement applies.

5. A section plane is parallel to V.P the top view gives _____ which is _____ to xy line.
a) true shape, parallel
b) straight line, parallel
c) straight line, perpendicular
d) true shape, perpendicular
View Answer
Answer: b
Explanation: The projection of section plane on the plane to which it is perpendicular gives a straight line which is parallel, perpendicular, inclined as due to section if it is parallel, perpendicular, inclined to reference planes.

6. The projection of a section plane, on the plane to which it is perpendicular is a straight line.
a) True
b) False
View Answer
Answer: a
Explanation: The projection of a section plane, on the plane to which it is perpendicular is a straight line. The projection of a section on the reference plane to which the section plane is perpendicular will be a straight line coinciding with the trace of the section plane of it.

7. The projection of section surface on the other plane to which it is inclined is called auxiliary section.
a) True
b) False
View Answer
Answer: b
Explanation: No it is not auxiliary plane but apparent section. This is obtained by projecting on the other plane, the points at which the trace of the section plane intersects the edges of the solid and drawing lines joining these points in proper sequence.

8. The section plane is perpendicular to H.P and inclined to V.P the front view of section if section is a line. It _____ xy line.
a) is perpendicular to
b) is parallel to
c) is inclined to V.P
d) crosses
View Answer

Answer: b
Explanation: The projection of section plane on the plane to which it is perpendicular gives a straight line. It is given the section is line and also from front view the section lies parallel to xy reference line.

9. The section plane is perpendicular to H.P and inclined to V.P the top view of section if section is a line. It _____ xy line.
a) is perpendicular to
b) is parallel to
c) is inclined to V.P
d) crosses
View Answer
Answer: c
Explanation: The projection of section plane on the plane to which it is perpendicular gives a straight line. Here it is given section plane is inclined with V.P so top view gives a line inclined to xy reference line.

10. A section is perpendicular to both the reference planes the true shape and size is obtained by taking projection of section on to _____ plane.
a) horizontal
b) vertical
c) profile
d) auxiliary
View Answer
Answer: c
Explanation: Given the section is perpendicular to both horizontal and vertical plane that is it is parallel to profile plane which is otherwise called as picture plane. Always remember the true shape and size will be trace if projections are drawn on to the plane parallel to section plane.

11. A section is parallel to horizontal plane the true shape and size is obtained by taking projection of section on to _____ plane.
a) horizontal
b) vertical
c) profile
d) auxiliary
View Answer
Answer: a
Explanation: Always remember the true shape and size will be trace if projections are drawn

on to the plane parallel to section plane. So here as the section is parallel to horizontal plane the projection is to be taken on horizontal plane.

12. A section is parallel to vertical plane the true shape and size is obtained by taking projection of section on to _____ plane.
a) horizontal
b) vertical
c) profile
d) auxiliary
View Answer
Answer: b
Explanation: Always remember the true shape and size will be trace if projections are drawn on to the plane parallel to section plane. So here as the section is parallel to a vertical plane the projection is to be taken on vertical plane.

Engineering Drawing Questions and Answers – Sections of Prisms

This set of Engineering Drawing Multiple Choice Questions & Answers (MCQs) focuses on "Sections of Prisms".

1. A regular triangular prism is resting on H.P and section plane is parallel to H.P and cutting the prism the section would be a _____
a) triangle
b) rectangle
c) trapezium
d) parallelogram
View Answer
Answer: b
Explanation: Prisms are obtained by extruding required shape up to some appreciable length so there exist same cross-section along the length perpendicular to axis. If the cutting plane parallel to axis we get rectangle.

2. A cube is rested on H.P on one of its base such that base's diagonal is perpendicular to V.P and section plane is parallel to V.P the section will be a _____
a) triangle

b) rectangle
c) trapezium
d) parallelogram
View Answer
Answer: b
Explanation: Prisms are obtained by extruding required shape up to some appreciable length so there exist same cross-section along the length perpendicular to axis. If the cutting plane parallel to axis we get rectangle.

3. A cube is rested on H.P on one of its base such that base's diagonal is perpendicular to V.P and section plane is making 45 degrees with both H.P and V.P and section plane is not intersecting more than 3 edges the section will be a _____
a) triangle
b) rectangle
c) trapezium
d) parallelogram
View Answer
Answer: a
Explanation: Prisms are obtained by extruding required shape up to some appreciable length so there will be same cross-section along the length perpendicular to axis. If the cutting plane is parallel to axis we get rectangle if inclined to axis the section depends on the position where it is cutting.

4. A cube is rested on H.P on one of its base such that base's diagonal is perpendicular to V.P and section plane is making 45 degrees with V.P and perpendicular to H.P the section will be a _____
a) triangle
b) rectangle
c) trapezium
d) parallelogram
View Answer
Answer: b
Explanation: Prisms are obtained by extruding required shape up to some appreciable length so there exist same cross-section along the length perpendicular to axis. If the cutting plane parallel to axis we get rectangle.

5. A cube is placed on H.P on its base and vertical face is making 30 degrees with V.P, section plane is perpendicular to V.P the section will give a shape of a _____
a) triangle
b) rectangle
c) trapezium
d) parallelogram
View Answer
Answer: c
Explanation: Prisms are obtained by extruding required shape up to some appreciable length so there will be same cross-section along the length perpendicular to axis. If the cutting plane is parallel to axis we get rectangle if inclined to axis the section depends on the position where it is cutting.

6. A square prism has its base on H.P and its faces equally inclined to V.P is cut at most critical place by a plane which is perpendicular to V.P and inclined 60 degrees with H.P the section will have shape like a _____
a) irregular pentagon
b) rectangle
c) trapezium
d) parallelogram
View Answer
Answer: a
Explanation: Prisms are obtained by extruding required shape up to some appreciable length so there will be same cross-section along the length perpendicular to axis. If the cutting plane is parallel to axis we get rectangle if inclined to axis the section depends on the position where it is cutting.

7. A triangular prism resting on one of its longest faces on H.P and axis of prism is parallel to V.P, the section plane is perpendicular to both V.P and H.P the section will be a _____
a) triangle
b) rectangle
c) trapezium
d) parallelogram
View Answer
Answer: a
Explanation: Prisms are obtained by extruding required shape up to some appreciable length so there exist same cross-section along the length perpendicular to axis. If the cutting plane parallel to axis we get a rectangle.

8. A pentagonal prism resting on one of its longest faces on H.P and axis of prism is parallel to V.P, the section plane is perpendicular to both V.P and H.P the section will be a ____
a) pentagon
b) irregular pentagon
c) rectangle
d) trapezium
View Answer
Answer: a
Explanation: Prisms are obtained by extruding required shape up to some appreciable length so there exist same cross-section along the length perpendicular to axis. If the cutting plane parallel to axis we get a rectangle.

9. A pentagonal prism resting on one of its longest faces on H.P and axis of prism is parallel to V.P, the section plane is parallel to both V.P/ H.P the section will be a _____
a) pentagon
b) irregular pentagon
c) rectangle
d) trapezium
View Answer
Answer: c
Explanation: Prisms are obtained by extruding required shape up to some appreciable length so there exist same cross-section along the length perpendicular to axis. If the cutting plane parallel to axis we get a rectangle.

10. A pentagonal prism resting on one of its longest faces on H.P and axis of prism is parallel to V.P, the section plane is perpendicular to V.P and inclined H.P the section will be a _____
a) pentagon
b) irregular pentagon
c) rectangle
d) trapezium
View Answer
Answer: b
Explanation: Prisms are obtained by extruding required shape up to some appreciable length so there will be same cross-section along the length perpendicular to axis. If the cutting plane is parallel to axis we get rectangle if inclined to axis the section depends on the position where it is cutting.

11. A hexagonal prism is resting on H.P on one of its longest faces, axis is perpendicular to V.P the section plane is perpendicular to H.P and inclined to V.P and cutting solid at approximately middle. The section will be like a _____
a) hexagon
b) irregular hexagon
c) rectangle
d) trapezium
View Answer
Answer: b
Explanation: Prisms are obtained by extruding required shape up to some appreciable length so there will be same cross-section along the length perpendicular to axis. If the cutting plane is parallel to axis we get rectangle if inclined to axis the section depends on the position where it is cutting.

12. A hexagonal prism is resting on H.P on one of its longest faces, axis is perpendicular to V.P the section plane is parallel to V.P and perpendicular to H.P. The section will be like a _____
a) hexagon
b) irregular hexagon
c) rectangle
d) trapezium
View Answer
Answer: a
Explanation: Prisms are obtained by extruding required shape up to some appreciable length so there exist same cross-section along the length perpendicular to axis. If the cutting plane parallel to axis we get a rectangle.

Engineering Drawing Questions and Answers – Sections of Cylinders

This set of Engineering Drawing Multiple Choice Questions & Answers (MCQs) focuses on “Sections of Cylinders”.

1. A cylinder is placed on H.P on its base and section plane is parallel to V.P cutting the solid the section gives _____
a) parabola
b) circle
c) rectangle
d) ellipse
View Answer
Answer: c
Explanation: Cylinder is formed by rotating the rectangle about one of its sides which is said

to axis further. So if the cutting plane is parallel to axis the section formed is rectangle and if plane is perpendicular to axis it gives circle.

2. A cylinder is placed on H.P on its base and section plane is parallel to H.P cutting the solid the section gives _____
a) parabola
b) circle
c) rectangle
d) ellipse
View Answer
Answer: b
Explanation: Cylinder is formed by rotating the rectangle about one of its sides which is said to axis further. So if the cutting plane is parallel to axis the section formed is rectangle and if plane is perpendicular to axis it gives circle.

3. A cylinder is placed on H.P on its base and section plane is inclined to V.P and perpendicular to H.P cutting the solid the section gives _____
a) parabola
b) circle
c) rectangle
d) ellipse
View Answer
Answer: c
Explanation: Cylinder is formed by rotating the rectangle about one of its sides which is said to axis further. So if the cutting plane is parallel to axis the section formed is rectangle and if plane is perpendicular to axis it gives circle.

4. A cylinder is placed on H.P on its base and section plane is inclined to H.P and perpendicular to V.P cutting only less than half of the generators of the solid the section gives _____
a) parabola
b) circle
c) rectangle
d) ellipse
View Answer
Answer: a
Explanation: If a cylinder is been cut by plane which is inclined to base or axis if it cuts all the generator the section formed will be ellipse and if the plane cuts less than half of generators the section formed will be parabola.

5. A cylinder is placed on V.P on its base and section plane is inclined to V.P and perpendicular to H.P cutting all the generators of the solid the section gives _____

a) parabola
b) circle
c) rectangle
d) ellipse
View Answer
Answer: d
Explanation: If a cylinder is been cut by plane which is inclined to base or axis if it cuts all the generator the section formed will be ellipse and if the plane cuts less than half of generators the section formed will be parabola.

6. A cylinder is placed on V.P on its base and section plane is inclined to H.P and perpendicular to V.P cutting the solid the section gives _____

a) parabola
b) circle
c) rectangle
d) ellipse
View Answer
Answer: c
Explanation: Cylinder is formed by rotating the rectangle about one of its sides which is said to axis further. So if the cutting plane is parallel to axis the section formed is rectangle and if plane is perpendicular to axis it gives circle.

7. A cylinder is been cut by a plane parallel to its base the section will be _____

a) parabola
b) circle
c) rectangle
d) ellipse
View Answer
Answer: b
Explanation: Cylinder is formed by rotating the rectangle about one of its sides which is said to axis further. So if the cutting plane is parallel to axis the section formed is rectangle and if plane is perpendicular to axis it gives circle.

8. A cylinder is been cut by a plane parallel to axis the section will be _____
a) parabola
b) circle
c) rectangle
d) ellipse
View Answer
Answer: c
Explanation: Cylinder is formed by rotating the rectangle about one of its sides which is said to axis further. So if the cutting plane is parallel to axis the section formed is rectangle and if plane is perpendicular to axis it gives circle.

9. A cylinder is been cut completely by a plane inclined to base then the section will be_____
a) parabola
b) circle
c) rectangle
d) ellipse
View Answer
Answer: d
Explanation: If a cylinder is been cut by plane which is inclined to base or axis if it cuts all the generator the section formed will be ellipse and if the plane cuts less than half of generators the section formed will be a parabola.

10. A cylinder is kept in such a way its axis is parallel to both the reference planes and cut completely by a section plane is perpendicular to V.P and inclined to H.P then the section will be _____
a) parabola
b) circle
c) rectangle
d) ellipse
View Answer
Answer: d
Explanation: Given a cylinder is placed on profile plane or picture plane and is been cut by a cutting plane inclined to axis as per conditions that is cutting all generators which definitely give ellipse as a section.

11. A cutting plane cut the cylinder into half diagonally touching both the bases at corners the section and side view of 1 part of cylinder is _____
a) ellipse, circle

b) ellipse, rectangle
c) ellipse, triangle
d) closed figure formed by 2 parallel line bounded by 2 similar arcs, triangle
View Answer
Answer: c
Explanation: Given a cylinder is been cut diagonally from one corner of 1st base to other corner of 2nd base as we can imagine it is just cutting a plane inclined to axis that is cutting all generators which definitely give ellipse as section and side view will be triangle, top view will be a circle.

12. A cylinder is placed on V.P and the section plane is parallel to H.P cutting the solid into two equal parts the front view of the 1st part of cylinder will be _____
a) circle
b) ellipse
c) rectangle
d) semi-circle
View Answer
Answer: d
Explanation: Given the cylinder is placed on V.P on its base and the section plane is parallel to H.P cutting the solid into two equal parts. In this case the side view, front view shows the section plane as line cutting the cylinder into 2 halves and show rectangle and semicircle.

13. A cylinder is placed on V.P on its base and the section plane is parallel to H.P cutting the solid into two equal parts the top view of the 1st part of cylinder will be _____
a) rectangle of width equal to half of diameter of cylinder
b) rectangle of width equal to diameter of cylinder
c) circle of diameter equal to that of cylinder
d) semicircle with diameter equal to that of cylinder
View Answer
Answer: b
Explanation: Given the cylinder is placed on V.P on its base and the section plane is parallel to H.P cutting the solid into two equal parts. In this case the side view, front view shows the section plane as line cutting the cylinder into 2 halves and show rectangle and semicircle but top view shows the rectangle of width equal to diameter of the cylinder

Engineering Drawing Questions and Answers – Development of Surfaces

This set of Engineering Drawing Multiple Choice Questions & Answers (MCQs) focuses on “Development of Surfaces”.

1. Which method of development is employed in case of prisms?
a) Parallel-line development
b) Approximation method
c) Triangulation development
d) Radial-line development
View Answer
Answer: a
Explanation: Parallel-line method is employed in case of prisms and cylinders in which stretch out-line principle is used. Radial-line development is used for pyramids and cones in which the true length of the slant edge or the generator is used as a radius.

2. Which method of development is employed in case of cones?
a) Parallel-line development
b) Approximation method
c) Triangulation development
d) Radial-line development
View Answer
Answer: d
Explanation: Parallel-line method is employed in case of prisms and cylinders in which stretch out-line principle is used. Radial-line development is used for pyramids and cones in which the true length of the slant edge or the generator is used as a radius.

3. Which method of development is employed in case of double curved objects?
a) Parallel-line development
b) Approximation method
c) Triangulation development
d) Radial-line development
View Answer
Answer: b
Explanation: Approximation method is used to develop objects of double curved or warped surfaces as sphere, paraboloid, ellipsoid, hyperboloid and helicoid. Triangulation method is used for transition pieces. This is simply a method of dividing a surface into number of triangles and transferring them into the development.

4. Which method is used to develop transition pieces?
a) Parallel-line development
b) Approximation method
c) Triangulation development
d) Radial-line development
View Answer
Answer: c
Explanation: Approximation method is used to develop objects of double curved or warped surfaces as sphere, paraboloid, ellipsoid, hyperboloid and helicoid. Triangulation method is used for transition pieces. This is simply a method of dividing a surface into number of triangles and transferring them into the development.

5. Which method of development is employed in case of sphere, ellipsoid?
a) Parallel-line development
b) Approximation method
c) Triangulation development
d) Radial-line development
View Answer
Answer: b
Explanation: Approximation method is used to develop objects of double curved or warped surfaces as sphere, paraboloid, ellipsoid, hyperboloid and helicoid. Triangulation method is used for transition pieces. This is simply a method of dividing a surface into number of triangles and transferring them into the development.

6. Developments of the lateral surface of a prism consist of the same number of _____ in contact as the number of the sides of base of the prism.
a) squares
b) rectangles
c) triangles
d) parallelograms
View Answer
Answer: b
Explanation: Developments of the lateral surface of a prism consist of the same number of rectangles in contact as the number of the sides of base of the prism. One side of the rectangle is equal to the length of the axis and the other side equal to the length of the side of the base.

7. The development of the lateral surface of a cylinder is a rectangle having one side equal to the _____ of its base-circle and the other equal to its length.
a) circumference
b) area
c) diameter
d) radius
View Answer
Answer: a
Explanation: The development of the lateral surface of a cylinder is a rectangle having one side equal to the circumference of its base-circle and the other equal to its length. Length is the distance between the two bases.

8. The development of lateral surface of a pyramid consists of a number of equal _____triangle in contact.
a) equilateral
b) isosceles
c) scalene
d) right angled
View Answer
Answer: b
Explanation: The development of lateral surface of a pyramid consists of a number of equal isosceles triangles in contact. The base and sides of each triangle are respectively equal to the edge of the base and slant edge of the pyramid.

9. The development of the curved surface of a cone is a _____ of a _____
a) sector, circle
b) segment, circle
c) segment, ellipse
d) arc, parabola
View Answer
Answer: a
Explanation: The development of the curved surface of a cone is a sector of a circle, the radius and the length of the arc of which are respectively equal to the slant height and the circumference of the base-circle of the cone.

10. The development of the surface of a cube consists of ____ equal squares, the length of the side of the squares being equal to the length of the edge of the cube.
a) 4
b) 6
c) 12
d) 8
View Answer
Answer: b
Explanation: The development of the surface of a cube consists of 6 equal squares, the length of the side of the squares being equal to the length of the edge of the cube. It is 6 squares because the cube is bounded by equal squares and only 6 faces are there.

11. A zone is portion of the sphere enclosed between two planes parallel to the axis.
a) True
b) False
View Answer
Answer: b
Explanation: A zone is portion of the sphere enclosed between two planes perpendicular to the axis. A lune is the portion between the two planes which contain the axis of the sphere. A sphere is approximately developed by these two methods.

12. Which method of development is employed in case of pyramids?
a) Parallel-line development
b) Approximation method
c) Triangulation development
d) Radial-line development
View Answer
Answer: d
Explanation: Parallel-line is employed in case of prisms and cylinders in which stretch out-line principle is used. Radial-line development is used for pyramids in which the actual length of the slant edge or the generator is used as a radius

Engineering Drawing Questions and Answers – Intersection of Surfaces

This set of Engineering Drawing Multiple Choice Questions & Answers (MCQs) focuses on "Intersection of Surfaces".

1. The surfaces of which intersect one another in lines which are called line of intersection.
a) True
b) False
View Answer
Answer: a
Explanation: In engineering practice, objects constructed may have constituent parts, the surfaces of which intersect one another in line which are called line of intersection. A dome fitted on a boiler is one such example. The surface of the dome extends up to the line of intersection only.

2. The plane surfaces intersect in a _____ the line of intersection between two curved surfaces is _____ and between a plane surface and curved surfaces is a _____
a) straight line, curve, curve
b) straight line, straight line, curve
c) straight line, curve, straight line
d) curve, curve, curve
View Answer
Answer: a
Explanation: The plane surfaces (faces of prisms and pyramids) intersect in a straight line. The line of intersection between two curved surfaces (of cylinders and cones) or between a plane surface and curved surfaces is a curve.

3. Drawing straight lines on both the surfaces of solids and then pointing the points where they intersect and drawing lines which forms the line of intersection this process of finding the line of intersection is termed as _____ method.
a) assumption
b) line
c) removing material
d) cutting- plane
View Answer
Answer: b
Explanation: A number of lines are drawn on the lateral surface of one of the solids and in the region of the line of intersection. Points of intersection of these lines with the surface of

the other solid are then located. These points will obviously lie on the required line of intersection.

4. Selecting of a particular plane in a series of planes drawn cutting the solid either parallel, perpendicular or oblique which cut the surface of one of the solids in straight lines and that of the other in straight lines or circles. This is called _____method.
a) assumption
b) line
c) removing material
d) cutting- plane
View Answer
Answer: d
Explanation: The two solids are assumed to be cut by a series of cutting planes. The cutting planes may be vertical, edgewise or oblique. The cutting planes are so selected as to cut the surface of one of the solids in straight lines and that of the other in straight lines or circle.

5. When a solid completely penetrates another solid, there will be two lines of intersection. These lines are called_____
a) line of interpenetration
b) concyclic curves of lines
c) hidden lines
d) inside line
View Answer
Answer: a
Explanation: When a solid completely penetrates another solid, there will be two lines of intersection. These lines are called lines of interpenetration. The portion of the penetrating solid which lies hidden within the other solid is shown by dotted lines.

6. The line of intersection formed is straight line while two solids are intersecting the solids may be _____
a) prism, cylinder
b) prism, cone
c) pyramid, cone
d) prism, pyramid
View Answer
Answer: d
Explanation: If any of the solid in two of intersecting solids is having curves surface that is

cylinder, cone, sphere etc the line of intersection will give curve only but not straight line for getting line of intersection straight line both the solids should not have curved surfaces.

7. The line of intersection formed is straight line while two solids intersect the solids may be _____
a) cube, cylinder
b) pentagonal prism, cone
c) triangular pyramid, cone
d) triangular prism, square pyramid
View Answer
Answer: d
Explanation: If any of the solid in two of intersecting solids is having curves surface that is cylinder, cone, sphere etc the line of intersection will give curve only but not straight line for getting line of intersection straight line both the solids should not have curved surfaces.

8. The line of intersection formed is curve while two solids intersect the solids may be _____
a) cube, triangular prism
b) pentagonal prism, cone
c) triangular pyramid, cube
d) triangular prism, square pyramid
View Answer
Answer: b
Explanation: If any of the solid in two of intersecting solids is having curves surface that is cylinder, cone, sphere etc the line of intersection will give curve only but not straight line for getting line of intersection straight line both the solids should not have curved surfaces.

9. The line of intersection formed is curve while two solids intersect the solids may be _____
a) cone, cylinder
b) cube, prism
c) pyramid, cube
d) pyramid, cuboid
View Answer
Answer: a
Explanation: If any of the solid in two of intersecting solids is having curves surface that is cylinder, cone, sphere etc the line of intersection will give curve only but not straight line for getting line of intersection straight line both the solids should not have curved surfaces.

10. A prism and cylinder got intersected at 90 degrees the line of intersection will be _____ and parallel to axis of _____
a) straight line, prism
b) curve, prism
c) straight line, cylinder
d) curve, cylinder
View Answer
Answer: b
Explanation: As here a prism and cylinder are intersected in which the prism has plane surface and cylinder has curved surface and we know the curved surface is perpendicular to axis of cylinder and also given the solids intersect at 90 degrees so the curve formed will be parallel to axis of a prism.

11. A prism and cone got intersected at 90 degrees the line of intersection will be _____ and parallel to axis of _____
a) straight line, prism
b) curve, prism
c) straight line, cone
d) curve, cone
View Answer
Answer: b
Explanation: As here a prism and cone are intersected in which the prism has plane surface and cone has curved surface and we know the curved surface is perpendicular to axis of cone and also given the solids intersect at 90 degrees so the curve formed will be parallel to axis of a prism.

12. The line of intersection formed is straight line while two solids are intersecting the solids may be _____
a) cube, cylinder
b) prism, cone
c) pyramid, cuboid
d) cube, cone
View Answer
Answer: c
Explanation: If any of the solid in two of intersecting solids is having curves surface that is cylinder, cone, sphere etc the line of intersection will give curve only but not straight line for getting line of intersection straight line both the solids should not have curved surfaces.

13. The line of intersection formed is curve while two solids are intersecting the solids may be _____
a) cylinder, sphere
b) prism, prism
c) cuboid, cube
d) prism, pyramid
View Answer
Answer: a
Explanation: If any of the solid in two of intersecting solids is having curves surface that is cylinder, cone, sphere etc the line of intersection will give curve only but not straight line for getting line of intersection straight line both the solids should not have curved surfaces.

Engineering Drawing Questions and Answers – Types of Perspective

This set of Engineering Drawing Multiple Choice Questions & Answers (MCQs) focuses on "Types of Perspective".

1. When an object has its one or more faces parallel to the picture plane, its perspective is called _____ perspective also called one point perspective.
a) parallel
b) oblique
c) vanishing
d) angular
View Answer
Answer: a
Explanation: When an object has its one or more faces parallel to the picture plane, its perspective is called parallel perspective also called one point perspective as the edges converge to a single vanishing point of the parallel faces.

2. When an object has its two faces inclined to the picture plane, its perspective is called _____ perspective also called two point perspectives.
a) parallel
b) oblique
c) vanishing
d) angular
View Answer
Answer: d
Explanation: When an object has its two faces inclined to the picture plane, its perspective is called angular perspective also called two point perspectives as the edges of the object converge to two vanishing points.

3. When an object has its three faces inclined to the picture plane, its perspective is called _____ perspective also called 3 point perspective.
a) parallel
b) oblique
c) vanishing
d) angular
View Answer
Answer: b
Explanation: When an object has its three faces inclined to the picture plane, its perspective is called oblique perspective also called 3 point perspective as edges of the object converge to three vanishing points.

4. Vanishing points for all horizontal lines are inclined at 45 degrees to the picture plane are given special name of _____ points.
a) vanishing
b) far
c) distance
d) distant
View Answer

Answer: c
Explanation: Vanishing points for all horizontal lines are inclined at 45 degrees to the picture plane are given special name of distance points on account of their definite positions. They are equidistant from the center of vision.

5. Which are equidistant from the center of vision?
a) Station point
b) Ground point
c) Distance point
d) Vanishing point
View Answer
Answer: c
Explanation: The distance points are equidistant from the center of vision the distance of each from the centre of vision being equal to the distance of the station point from the picture plane the perspectives of all horizontal lines inclined at 45 degrees to the picture plane converge to a distance points on the horizon line.

6. The distance of which points from the centre of vision being equal to the distance of the station point from the picture plane?
a) Station point
b) Ground point
c) Distance point
d) Vanishing point
View Answer
Answer: c
Explanation: The distance points are equidistant from the center of vision the distance of each from the centre of vision being equal to the distance of the station point from the picture plane the perspectives of all horizontal lines inclined at 45 degrees to the picture plane converge to a distance points on the horizon line.

7. The perspectives of all horizontal lines inclined at ___ degrees to the picture plane converge to a distance points on the horizon line.
a) 30
b) 45
c) 60
d) 90
View Answer
Answer: b
Explanation: The distance points are equidistant from the center of vision the distance of each from the centre of vision being equal to the distance of the station point from the picture plane the perspectives of all horizontal lines inclined at 45 degrees to the picture plane converge to a distance points on the horizon line.

8. The perspectives of all horizontal lines inclined at 45 degrees to the picture plane converge to a distance points on the _____
a) ground line
b) perpendicular axis
c) horizon line

d) center of vision
View Answer
Answer: c
Explanation: The distance points are equidistant from the center of vision the distance of each from the centre of vision being equal to the distance of the station point from the picture plane the perspectives of all horizontal lines inclined at 45 degrees to the picture plane converge to a distance points on the horizon line.

9. The perspectives of all horizontal lines inclined at 45 degrees to the picture plane converge to a _____ points on the horizon line.
a) vanishing
b) far
c) distance
d) distant
View Answer
Answer: c
Explanation: The distance points are equidistant from the center of vision the distance of each from the centre of vision being equal to the distance of the station point from the picture plane the perspectives of all horizontal lines inclined at 45 degrees to the picture plane converge to a distance points on the horizon line.

10. The measuring line or the line of heights is the trace or the line of intersection with the _____ plane, of the vertical plane containing the point or points whose heights are to be determined.
a) ground plane
b) picture plane
c) horizontal plane
d) central plane
View Answer
Answer: b
Explanation: The measuring line or the line of heights is the trace or the line of intersection with the picture plane, of the vertical plane containing the point or points whose heights are to be determined. Heights of points lying in the different vertical plane can be measured from their respective line of heights.

11. Heights of points lying in different _____ can be measured from their respective line of heights.
a) ground plane
b) picture plane
c) vertical plane
d) central plane
View Answer
Answer: c
Explanation: The measuring line or the line of heights is the trace or the line of intersection with the picture plane, of the vertical plane containing the point or points whose heights are to be determined. Heights of points lying in different vertical plane can be measured from their respective line of heights.

12. The measuring line or the line of heights is the trace or the line of intersection with the picture plane, of the _____ plane containing the point or points whose heights are to be determined.
a) ground plane
b) picture plane
c) vertical plane
d) central plane
View Answer
Answer: c
Explanation: The measuring line or the line of heights is the trace or the line of intersection with the picture plane, of the vertical plane containing the point or points whose heights are to be determined.

Engineering Drawing Questions and Answers – Isometric Drawings

This set of Engineering Drawing Multiple Choice Questions & Answers (MCQs) focuses on "Isometric Drawings".

1. If isometric projection of an object is drawn with true lengths the shape would be same and size is how much larger than actual isometric projection?
a) 25%
b) 29.5%
c) 22.5%
d) 33.3%
View Answer
Answer: c
Explanation: If the foreshortening of the isometric lines in an isometric projection is disregarded and instead, the true lengths are marked, the view obtained will be exactly of the same shape but larger in proportion than that obtained by the use of the isometric scale.

2. If an isometric projection is drawn with true measurements but not with isometric scale then the drawings are called _____
a) Isometric projection
b) Isometric view
c) Isometric perception
d) Orthographic view
View Answer
Answer: b
Explanation: Due to the ease of construction and the advantage of measuring the dimensions directly from the drawing, it has become a general practice to use the true scale instead of the isometric scale.

3. If an isometric drawing is made use of isometric scale then the drawings are called _____
a) Isometric projection
b) Isometric view
c) Isometric perception

d) Orthographic view
View Answer
Answer: a
Explanation: To avoid confusion, the view drawn with the true scale is called isometric drawing or isometric view, while that drawn with the use of isometric scale is called isometric projection