KD EDUCATION ACADEMY [9582701166]

Time : 3 hour | STD 9 Maths | Total Marks : 110

KD Sir 90+ Question chapter - 5 Euclid's geometry

* **Choose the right answer from the given options. [1 Marks Each]** **[46]**

1. The boundaries of the solids are:

   (A) Curves. (B) Points. (C) Surfaces. (D) Lines.

2. Euclid's Postulate 1 is:

   (A) A straight line may be drawn from any point to any other point. (B) A terminated line can be produced indefinitely. (C) All right angles are equal to one another. (D) None of these.

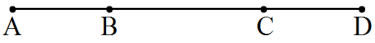
3. A pyramid is a solid figure, whose base is:

   (A) Only a triangle. (B) Only a square. (C) Only a rectangle. (D) Any polygon.

4. Which of the following is not a solid?

   (A) Cube. (B) Cone. (C) Cylinder. (D) Circle.

5. In this figure, if AC = BD, then:

   (A) AB ≠ CD (B) BC = CD (C) AB = BC (D) AB = CD

6. Which of the following statements are true?

   (A) Only one line can pass through a single point. (B) There is an infinite number of lines that pass through two distinct points. (C) A terminated line can be produced indefinitely on both sides. (D) If two circles are equal, then their radii are unequal.

7. If two line segments are equal then they are called:

   (A) Line segment (B) Ray (C) Congruent (D) None of these

8. The side faces of a pyramid are:

   (A) Triangles. (B) Squares. (C) Trapeziums. (D) Polygons.

9. Write the correct answer in the following:
   The number of dimensions, a surface has:

   (A) 1 (B) 2 (C) 3 (D) 0

10. Which of the following is a solid?

    (A) Rectangle. (B) Circle. (C) Cylinder. (D) Square.

11. How many points can be common in two distinct straight lines?

    (A) One (B) Two (C) Three (D) None

12. Write the correct answer in the following:
    It is known that if x + y = 10 then x + y + z = 10 + z. The Euclid's axiom that illustrates this statement is:

    (A) First Axiom. (B) Second Axiom. (C) Third Axiom. (D) Fourth Axiom.

13. The number of end points a ray has:

(A) 0 (B) 2 (C) 1 (D) None of these

14. A point has:

(A) One part (B) Two parts (C) More than two parts (D) No parts

15. The basic facts which are taken for granted, without proof, are called:

(A) Theorems. (B) Propositions. (C) Lemmas. (D) Axioms.

16. The edges of the surface are:

(A) Points (B) Curves (C) Lines (D) None of the above

17. The shape of base of Pyramid is:

(A) Triangle (B) Square (C) Rectangle (D) Any polygon

18. If two circles are equal, then their radii are _____.

(A) Equal (B) Diminished (C) Different (D) None of these

19. 'Lines are parallel if they do not intersect' – is stated in the form of:

(A) A postulate (B) An axiom (C) A definition (D) A proof

20. Which one of the following statements is true?

(A) A point determines always a unique line. (B) Three lines are concurrent when they have only one point in common. (C) A ray has two end points. (D) A line has definite length.

21. **Directions:** In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following:

Assertion: a sequence finite or infinite list of numbers

Reason: 1, 2, 3, 4 ——– is the sequence an infinite sequence of natural no.

(A) Both Assertion and reason are correct and reason is correct explanation for Assertion. (B) Both Assertion and reason are correct but reason is not correct explanation for Assertion (C) Assertion is true but reason is false. (D) Both Assertion and reason are false.

22. If the point P lies in between M and N, C is the mid-point of MP then:

(A) CP + CN = MN (B) MC + CN = MN (C) MC + PN = MN (D) MP + CP = MN

23. A and B have the same weight. If they gain weight by 3kg, then:

(A) Weight of A < Weight of B. (B) Weight of A = Weight of B. (C) Weight of A > Weight of B. (D) None of these.

24. Axioms are assumed:

(A) Universal truths specific to geometry. (B) Universal truths in all branches of mathematics. (C) Theorems. (D) Definitions.

25. Euclid belongs to the country:

(A) India. (B) Greece. (C) Japan. (D) Egypt.

26. If a straight line falling on two straight lines makes the interior angles on the same side of it taken together less than 180∘, then the two straight lines, if produced indefinitely,

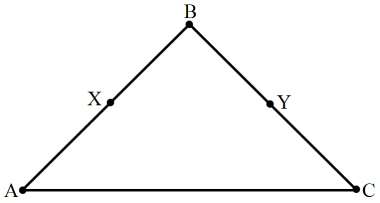
meet on that side on which the angles taken together are:

(A) 180º (B) < 180º (C) = 180º (D) None of these

27. Euclid divided his famous treatise "The Elements" into:

(A) 12 chapters. (B) 11 chapters. (C) 9 chapters. (D) 13 chapters.

28. In the figure, if AX = CY and BX = BY, then:



(A) AB = BC (B) AB < BC (C) AB > BC (D) None of these

29. In Indus Valley Civilisation (about BC 3000), the bricks used for construction work were having dimensions in the ratio of:

(A) 5 : 3 : 2 (B) 4 : 2 : 1 (C) 4 : 3 : 2 (D) 6 : 4 : 2

30. Theorems are statements which are proved using definitions, _____, previously proved statements and deductive reasoning.

(A) Definitions (B) Axioms (C) Theorems (D) Statements

31. The two lines which are parallel to the same line are _____ to each other.

(A) Perpendicular. (B) Equal. (C) Parallel. (D) None of these.

32. A line segment, when extended indefinitely in one direction is called a:

(A) Line. (B) Ray. (C) Line segment. (D) None of these.

33. A point C is said to lie between the points A and B if.

(A) AC = CB. (B) AC + CB = AB. (C) Point A, C and B are collinear. (D) None of these.

34. Two distinct lines:

(A) Always intersect (B) Either intersect or parallel (C) Always have two common points (D) Always parallel

35. The number of dimension, a point has:

(A) 2 (B) 3 (C) 1 (D) 0

36. If p, q and t are three straight lines such that p || q and p || t, then.

(A) q || t (B) q = t (C) q $\perp$ t (D) None of these

37. Euclid's fifth postulate implies the existence of:

(A) Perpendicular lines. (B) Parallel lines. (C) Intersecting lines. (D) None of these.

38. In ancient India, the shapes of altars used for household rituals were:

(A) Squares and rectangles. (B) Squares and circles. (C) Triangles and rectangles. (D) Trapeziums and pyramids.

39. Write the correct answer in the following:

The three steps from solids to points are:

(A) Solids - surfaces - lines - points. (B) Solids - lines - surfaces - points. (C) Lines - points - surfaces - solids. (D) Lines - surfaces - points - solids.

40. The things which are double of same things are:

(A) Halves of same thing (B) Double of the same thing (C) Equal (D) Unequal

41. It is known that if a + b = 4 then a + b - c = 4 - c. The Euclid's axiom that illustrates this statement is:

(A) III axiom. (B) II axiom. (C) I axiom. (D) IV axiom.

42. Two lines are said to be _____ if they intersect at right angles.

(A) Concurrent. (B) Parallel. (C) Perpendicular. (D) None of these.

43. The Sri yantra consists of _____ interwoven isosceles triangles.

(A) Three. (B) One. (C) Six. (D) Nine.

44. "Lines are parallel if they do not intersect" is stated in the form of:

(A) A proof. (B) A postulate. (C) A definition. (D) An axiom.

45. The number of lines passing through one point.

(A) Infinite (B) 1 (C) 2 (D) 3

46. Two intersecting lines cannot be parallel to the same line is stated in the form of:

(A) A theorem. (B) A postulate. (C) A definition. (D) None of these.

*** A statement of Assertion (A) is followed by a statement of Reason (R). [6]**

Choose the correct option.

47. **Directions:** In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following:

Assertion: Euclid's fifth postulate imply the existence of parallel lines.

Reason: The sum of the interior angles will be equal to sum of the two right angles then two lines will not meet each other on either sides and therefore they will be parallel to each other.

a. Both Assertion and Reason are correct and Reason is the correct explanation for Assertion.
b. Both Assertion and Reason are correct and Reason is not the correct explanation for Assertion.
c. Assertion is true but the reason is false.
d. Both assertion and reason are false.

48. **Directions:** In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following:

Assertion: Boundaries of surfaces are curves.

Reason: Surfaces are dimensional figures and their boundaries are one - dimensional which curves are.

a. Both Assertion and Reason are correct and Reason is the correct explanation for Assertion.
b. Both Assertion and Reason are correct and Reason is not the correct explanation for Assertion.
c. Assertion is true but the reason is false.
d. Both assertion and reason are false.

49. **Directions:** In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following:

Assertion: It is given that AD = BC. Then AC = BD.

Reason: Above line we can prove by Euclid axiom 3 If equals are subtracted from equals, the remainders are equal."

a. Both Assertion and Reason are correct and Reason is the correct explanation for Assertion.
b. Both Assertion and Reason are correct and Reason is not the correct explanation for Assertion.
c. Assertion is true but the reason is false.
d. Both assertion and reason are false.

50. **Directions:** In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following:

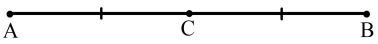
Assertion: Given two distinct points, there is a unique line that passes through them.

Reason: If A, B and C are three points on a line and B lies between A and C then AB + BC = AC.

a. Both assertion and reason are true and reason is the correct explanation of assertion.
b. Both assertion and reason are true but reason is not the correct explanation of assertion.
c. Assertion is true but reason is false.
d. Assertion is false but reason is true.

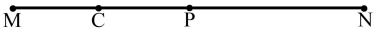
51. **Directions:** In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following:

Assertion: If a point C be the mid-point of a line line segment AB, then the relation among AC, BC and AB



is $\mathrm{AC} = \mathrm{CB} = \left(\frac{1}{2}\right)\mathrm{AB}$.

Reason: If a point P be the mid-point of MN and C is the mid - point of MP, then the relation between MC and MN



is $\mathrm{MC} = \left(\frac{1}{4}\right)\mathrm{MN}$.

a. Both Assertion and Reason are correct and Reason is the correct explanation for Assertion.
b. Both Assertion and Reason are correct and Reason is not the correct explanation for Assertion.
c. Assertion is true but the reason is false.
d. Both assertion and reason are false.

52. **Directions:** In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following:

Assertion: According to Euclid's 1st axiom- "Things which are equal to the same thing are also equal to one another".

Reason: If AB = PQ and PQ = XY, then AB = XY.

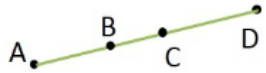
a. Both Assertion and Reason are correct and Reason is the correct explanation for Assertion.
b. Both Assertion and Reason are correct and Reason is not the correct explanation for Assertion.

c. Assertion is true but the reason is false.
d. Both assertion and reason are false.

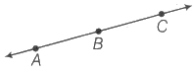
*** Answer the following questions in one sentence. [1 Marks Each]** **[6]**

53. Point C is called a mid point of line segment AB, prove that every line segment has one and only one mid-point.

54. In fig., if AC = BD, then prove that AB = CD

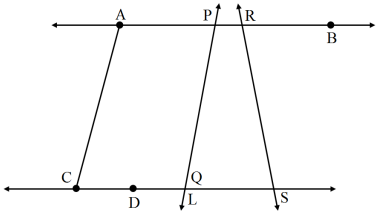


55. In the given figure, if A, B and C are three points on a line and B lies between A and C, then prove that AB + BC = AC.



56. Name the line segments determined by the three collinear points P. Q and R.

57. In the below figure. Name the following:



Four collinear points.

58. At how many points can two lines at the most intersect?

*** Answer the following short questions. [2 Marks Each]** **[6]**

59. In how many points two distinct lines can intersect?

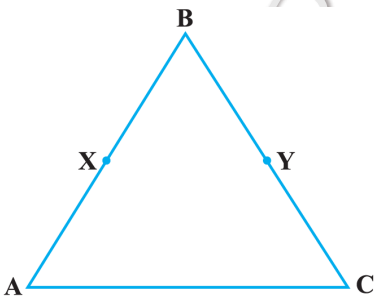
60. How many planes can be made to pass through three distinct points?

61. Define the following terms:
Half line.

*** Answer the following questions. [3 Marks Each]** **[9]**

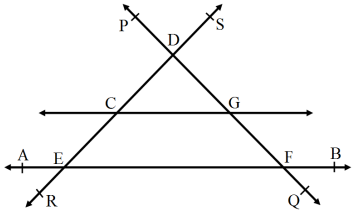
62. Solve the following question using appropriate Euclid's axiom:
Two salesmen make equal sales during the month of August. In September, each salesman doubles his sale of the month of August. Compare their sales in September.

63. In the we have $\mathrm{BX} = \frac{1}{2}\mathrm{AB},\ \mathrm{BY} = \frac{1}{2}\mathrm{BC}$ and AB = BC. Show that BX = BY.



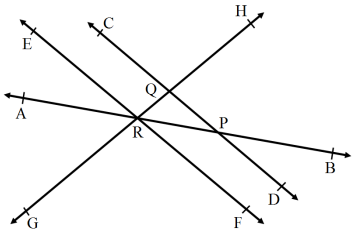
64. From the given figure, name the following:
a. Three lines.

b. One rectilinear figure.
c. Four concurrent points.

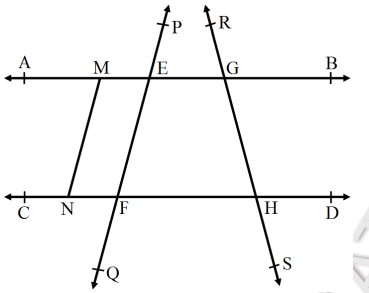


*** Questions with calculation. [4 Marks Each]** **[16]**

65. In the adjoining figure, name:
   i. Two pairs of intersecting lines and their corresponding points of intersection.
   ii. Three concurrent lines and their points of intersection.
   iii. Three rays.
   iv. Two line segments.

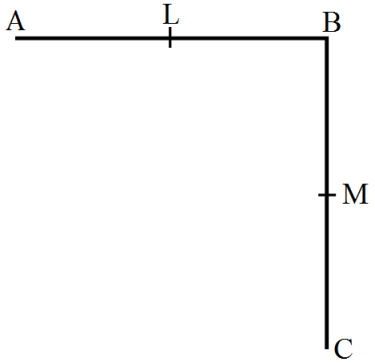


66. In the adjoining figure, name:
   i. Six points.
   ii. Five lines segments.
   iii. Four rays.
   iv. Four lines.
   v. Four collinear points.



67. What is the difference between a theorem and an axiom?

68. In the given figure, L and M are the mid-points of AB and BC respectively.



   i. If AB = BC, prove that AL = MC.
   ii. If BL = BM, prove that AB = BC.

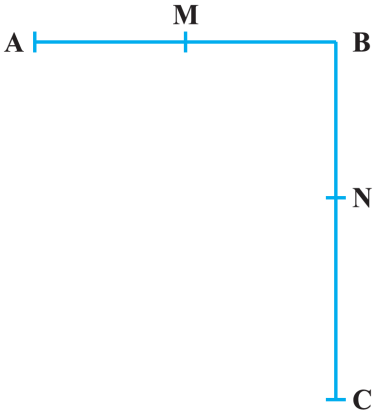
Hint:

i. $AB = BC \Rightarrow \frac{1}{2}AB = \frac{1}{2}BC \Rightarrow AL = MC.$

ii. $BL = BM \Rightarrow 2BL = 2BM \Rightarrow AB = BC.$

*** Answer the following questions. [5 Marks Each]** **[5]**

69. In the:



i. AB = BC, M is the mid-point of AB and N is the mid- point of BC. Show that AM = NC.

ii. BM = BN, M is the mid-point of AB and N is the mid-point of BC. Show that AB = BC.

*** Case study based questions.** **[16]**

70. 1. Highways 20A and 56C run parallel to each other for 20 km in a state.
Which of the following statements is most likely to be true regarding them?

A. Both highways are of the same length.

B. There can be no link road between them.

C. The highways make an angle 90° with each other.

D. The distance between the two highways remains almost the same in the state.

71. Karan marks his city on the map as point A.

2. Savita says, 'A dot is dimensionless, so your city is also dimensionless.' Why is Savita wrong? Justify your answer.

3. Which of the following is not true?

A. A line has one dimension.

B. A plane has two dimensions.

C. A circle can be drawn with any radius and at any point.

D. Two distinct lines can pass through a point in the same direction.

72. The map shows three cities Conlen ©, Stratford (S), and Texhoma (T) on a straight highway.

4. Which of the following is true for the length of the highway between them?

A. The length of the highway between C and S is equal to the length of the highway between S and T.

B. The length of the highway between C and S is three-fourth of the length of the highway between S and T.

C. The length of the highway between S and T is the sum of the lengths of the highway between CT and CS.

D. The length of the highway between C and T is the sum of the lengths of the highway between CS and ST.

5. A number Y is greater than a number X and another number $Z < 0$.

Which of the following relations can be true for a unique value of Z?

A. $X \times Z = Y \times Z$

B. $X \div Z = Y \div Z$

C. $X - Z = Y$

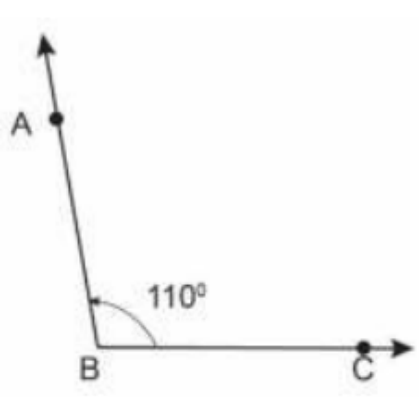
D. $X + Z = Y$

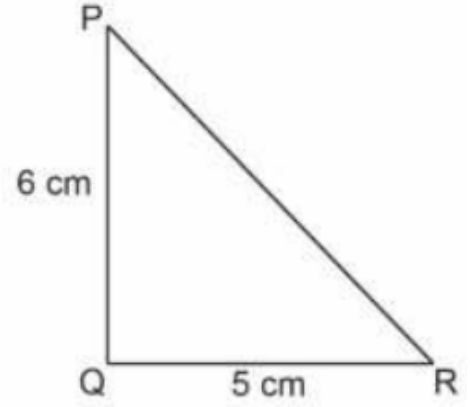
6. The area of a triangle is equal to the area of a rectangle.

The area of the rectangle is equal to the area of a parallelogram.

What is the relation between the area of the triangle and the area of the parallelogram?

73. Raghvan claims that the magnitude of the angle ABC is greater than the magnitude of the area of the right triangle PQR.





7. Is his claim correct? Why?

8. Two lines intersect at a point P.
Which of the following is true for the distance between the two lines as they travel beyond point P?

A. The distance becomes constant.
B. The distance increases continuously.
C. The distance decreases continuously.
D. The distance increases and decreases depending upon the intersection point.

9. Balan says, 'The measure of all right angles cannot be equal as their arms can be of different lengths.'
Why is Balan's statement not true?

A. The measure of an angle depends upon its orientation.
B. The measure of an angle depends upon the instrument used to measure it.
C. The measure of an angle depends on the length of its angle arms.
D. The measure of an angle depends upon the rotation of one arm on another.

10. TAB is a straight line. C is the mid-point of AB. D is the mid-point of AC.
Which of the following shows the relation between the line segments?

A. $AD = \frac{1}{2}AB$
B. $AD = \frac{1}{2}CB$
C. $AD = 2AC$
D. $AD = 2DC$

----- if talent doesn't work hard then hardwork beat the talent -----