




## Basic Geometrical Ideas DPP - 01

## Multiple Choice Questions

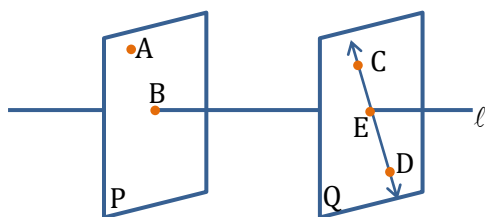
- What is the example of point?  
 (1) Sharpened end of pencil (2) The moon  
 (3) A wall (4) A white board
- The given figure is an example of \_\_\_\_ ?  
  
 (1) Ray (2) Line (3) Line segment (4) None of these
- How many points are enough to fix a line segment?  
 (1) 2 (2) 1 (3) 4 (4) Countless
- Where two walls and a ceiling meet known as  
 (1) Line (2) Plane (3) Point (4) None of these
- Which of the following is an example of plane?  
 (1) A white board (2) A desktop (3) A TV screen (4) All of these

## 6. Fill in the blanks :

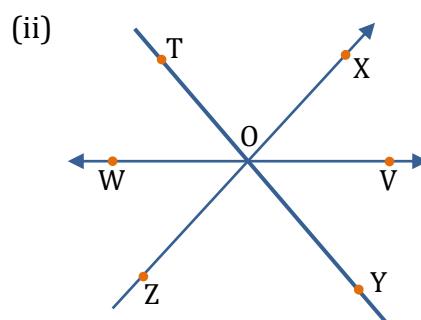
- \_\_\_\_\_ has no length, breadth, height or thickness.
- A line segment has a definite\_\_\_\_\_.
- Curves that do not intersect themselves are called \_\_\_\_\_ curves.
- An 'angle' is made up of \_\_\_\_\_ rays having a common end point.

## Subjective Questions:

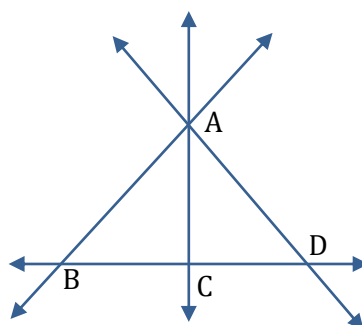
- Define the following terms: -  
 (i) Line segment  
 (ii) Line  
 (iii) Intersecting lines  
 (iv) Parallel lines
- Are point B and E collinear or Coplanar?



9. Write the names of segments, lines and rays in the diagram given below :



10. Look at the Figure and answer the following questions:



- (i) Name the collinear points.  
(ii) Name the concurrent lines and their point of concurrence.

## SOLUTIONS DPP-01

## 1. Option (1)

Sharpened end of a pencil is a point.

## 2. Option (1)

Ray is a part of a line that has a fixed starting point but no end point.

## 3. Option (1)

Two points are enough to fix a line segment.

## 4. Option (3)

Two walls and a ceiling meet at a point.

## 5. Option (4)

White board, TV screen and desktop all are plane surfaces.

6. (i) Point has no length, breadth, height or thickness.

(ii) A line segment has a definite length.

(iii) Curves that do not intersect themselves are called simple curves.

(iv) An 'angle' is made up of two rays having a common end point.

## 7. (i) Line segment: A straight line drawn from any point to any other point is called as line segment.

(ii) Line: Line is a straight path of points that goes on forever in two directions. It has infinite length, but no breadth and height.

(iii) Intersecting Lines: Intersecting lines are lines that pass through the same point.

(iv) Parallel Lines: Parallel Lines never cross and always stay at the same distance apart.

8. B and E lies on the same Line  $l$ . Therefore, they are collinear points.

## 9. (i) There are three line segments in the diagram : LM, MN, and ON.

(ii) There are three rays:  $\overrightarrow{OV}$ ,  $\overrightarrow{ZX}$  and  $\overrightarrow{OW}$ .

There are four line segments:  $\overline{OT}$ ,  $\overline{OZ}$ ,  $\overline{OY}$  and  $\overline{TY}$

There is one line:  $\overleftrightarrow{WV}$

## 10. (i) The collinear points are B, C and D because a single line can be drawn passing through these points.

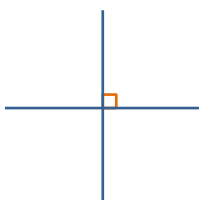
(ii) Lines AB, AC and AD are concurrent Lines; their point of concurrence is A.



## Basic Geometrical Ideas DPP-02

## Multiple Choice Questions

1. The given figure is an example of \_\_\_\_\_?



- (1) Parallel lines (2) Intersecting lines  
(3) Perpendicular lines (4) None of these

2. The given figure is an example of \_\_\_\_\_?



- (1) Parallel lines (2) Intersecting lines  
(3) Perpendicular lines (4) None of these

3. Which alphabet can be an example of perpendicular lines?

- (1) A (2) Q (3) R (4) L

4. Which alphabet can be an example of parallel lines?

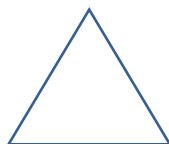
- (1) H (2) A (3) B (4) O

5. What is the location of point P in the given figure?



- (1) Interior (2) Exterior (3) On the figure (4) None of these

6. The given figure is an example of \_\_\_\_?



- (1) Open figure (2) Closed figure (3) Parallel lines (4) None of these

7. The given figure is an example of \_\_\_\_?

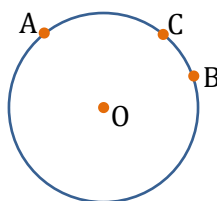


- (1) Intersecting Lines (2) Closed figure (3) Open figure (4) None of these

8. Which of the following alphabet is an example of open figure?

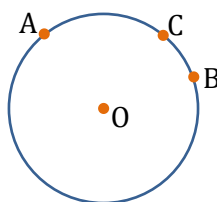
- (1) S (2) P (3) O (4) B

9. How many points are outside the figure ?



- (1) 4                      (2) 3                      (3) 2                      (4) 0

10. How many points are on the figure ?



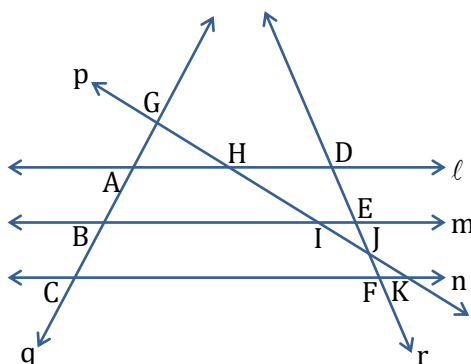
- (1) 1                      (2) 2                      (3) 3                      (4) 4

11. Intersecting lines cut each other at:

- (1) One point              (2) Two points              (3) Three points              (4) Null

### Subjective Questions:

17. In the Given figure, Find



- (i) All pairs of parallel lines.
- (ii) All pairs of intersecting lines.
- (iii) Lines whose point of intersection is I.
- (iv) Lines whose point of intersection is E.
- (v) Lines whose point of intersection is A.
- (vi) Collinear Points.

18. Draw rough diagram to illustrate the following;

- (i) Open Curve
- (ii) Closed Curve

19. Give three real life examples of each of the following :

- (i) intersecting lines
- (ii) parallel lines

20. What is the minimum number of points of intersection of three lines in a plane?

## SOLUTIONS DPP-02

## 1. Option (3)

Perpendicular lines are those lines that intersect each other at  $90^\circ$ .

## 2. Option (1)

Parallel lines are lines in a plane that are always the same distance apart. They never intersect each other.

## 3. Option (4)

L alphabet has a shape like perpendicular lines.

## 4. Option (1)

H alphabet has a shape like parallel lines.

## 5. Option (1)

Point P lies inside (interior) of the figure.

## 6. Option (2)

Triangle is an example of closed figure.

## 7. Option (3)

Given figure is an example of open figure.

## 8. Option (1)

S alphabet is an example of an open figure.

## 9. Option (4)

In the given figure no point lies outside the figure.

## 10. Option (3)

In the given figure three points lie on the figure are A, B, C.

## 11. Option (1)

Intersecting lines cut each other at one point

12. (i) All pairs of parallel lines are  $(\ell, m)$  ;  $(m, n)$  ;  $(\ell, n)$ 

(ii) All pairs of intersecting lines are  $(\ell, p)$  ;  $(m, p)$  ;  $(n, p)$  ;  $(\ell, r)$  ;  $(m, r)$  ;  $(n, r)$  ;  $(p, r)$  ;  $(\ell, q)$  ;  $(m, q)$  ;  $(n, q)$  ;  $(q, p)$  ,  $(q, r)$ .

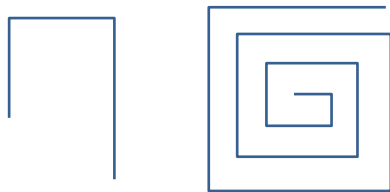
(iii) Lines whose point of intersection is I are m, p.

(iv) Lines whose point of intersection is E are m, r.

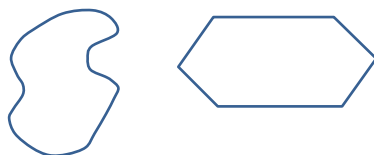
(v) Lines whose point of intersection is A are  $\ell$ , q.

(vi) Collinear points are  $(G, A, B, C)$  ;  $(D, E, J, F)$  ;  $(G, H, I, J, K)$  ;  $(A, H, D)$  ;  $(B, I, E)$  ;  $(C, F, K)$

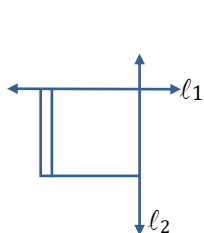
13. (i) Open curve :



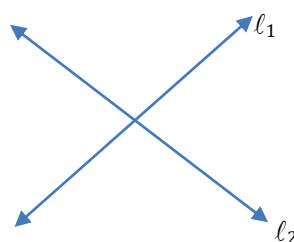
(ii) Closed curve:



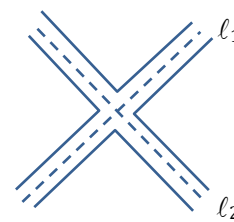
14. (i) Three examples of intersecting lines in our environment :



Two adjacent edges of a notebook.

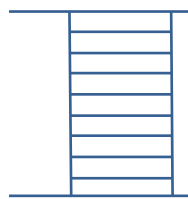


The letter X of the English alphabet

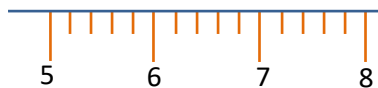


Crossing roads

(ii) Three examples of parallel lines in our environment.



The cross bars of a window

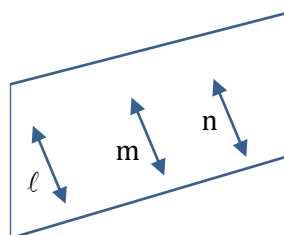


The opposite edges of ruler (Scale)



Rail lines

15. Minimum number of points of intersection of three lines in a plane will be zero.





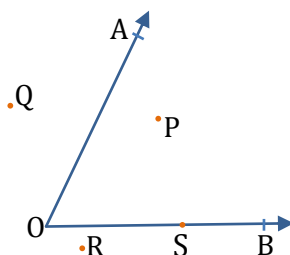
## Basic Geometrical Ideas DPP-03

## Multiple Choice Questions

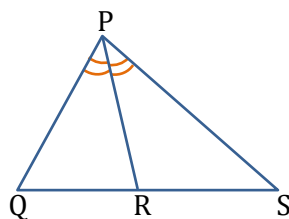
- How many vertices are there in a square?  
(1) 4 (2) 5 (3) 6 (4) 2
- How many sides are present in rectangle?  
(1) 2 (2) 4 (3) 5 (4) 3
- How many diagonals are present in square?  
(1) 2 (2) 1 (3) 4 (4) 3
- How many sides are present in the given figure?



- (1) 5 (2) 6 (3) 7 (4) 4
- The vertex of an angle lies  
(1) in its interior (2) in its exterior (3) on the angle (4) inside the angle
- The point that is in interior of angle AOB is?



- (1) C (2) R (3) Q (4) P
- How many triangles are present in a given figure?



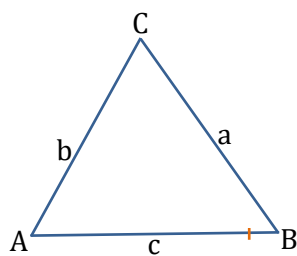
- (1) 2 (2) 3 (3) 4 (4) 5
- How many triangles are present in a given figure?



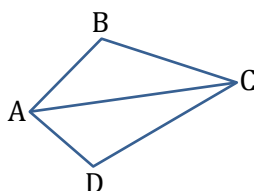
- (1) 3 (2) 4 (3) 5 (4) 6
- Total number of parts of a triangle is?  
(1) 3 (2) 6 (3) 9 (4) 1



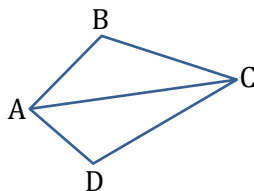
10. The vertex opposite to side AB is?



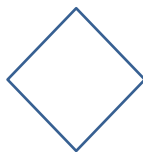
- (1) A (2) B (3) C (4) None of these
11. Sum of all the angles of a triangle is ?  
 (1)  $60^\circ$  (2)  $90^\circ$  (3)  $180^\circ$  (4)  $0^\circ$
12. The Point of intersection of medians is called \_\_\_\_\_.  
 (1) Centroid (2) Ortho center (3) Median (4) Altitude
13. In a quadrilateral ABCD, which one is a diagonal?



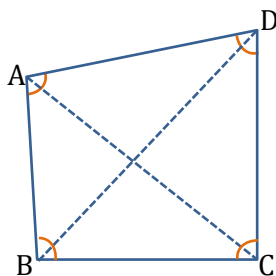
- (1) AB (2) AD (3) AC (4) BC
14. Which angle is opposite to  $\angle B$ ?



- (1)  $\angle A$  (2)  $\angle C$  (3)  $\angle D$  (4) none of these
15. How many vertices are there in the following figure?

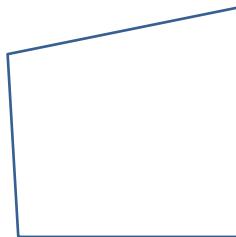


- (1) 2 (2) 4 (3) 3 (4) 5
16. How many diagonals are there in a following figure?



- (1) 2 (2) 4 (3) 3 (4) 1

17. Name this quadrilateral.



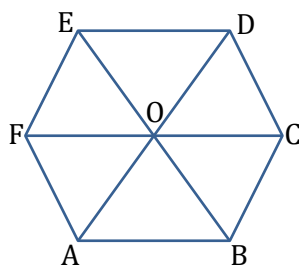
- (1) Concave quadrilateral (2) Convex quadrilateral  
(3) parallelogram (4) Triangle

18. **Fill in the Blanks**

- (i) The joint of two vertices of a polygon which are not adjacent is called as \_\_\_\_\_.  
(ii) An angle has \_\_\_\_\_ vertex and \_\_\_\_\_ arms.

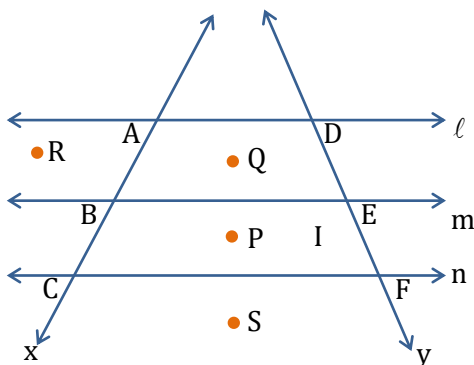
**Subjective Questions:**

19. Draw the medians of  $\triangle ABC$  and answer the following:  
(i) Name the three medians  
(ii) Do the medians intersect each other at the same point?  
(iii) What is that point called?  
(iv) Can this point be outside the triangle?
20. Look at the given figure and answer the following:



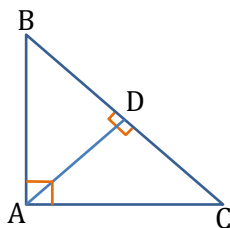
- (i) Name the sides of the polygon ABCDEF.  
(ii) Name any two pairs of adjacent sides.  
(iii) Name all the segments which intersect each other at one point.  
(iv) Name all the diagonals of the given polygon.

21. Look at the given figure and answer the following:

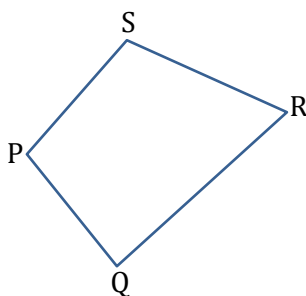


- (i) Name the points lying on the line x  
(ii) Name the points lying on the line y.  
(iii) Name the points inside the quadrilateral ABED  
(iv) Name the points outside the quadrilaterals ABED and BCFE.  
(v) Name the lines passing through three points.

22. Illustrate, if possible, each one of the following with a rough diagram.
- (i) A closed curve that is not a polygon.
  - (ii) An open curve made up entirely of line segments.
  - (iii) A polygon with three sides
23. How many right angles are present in the given figure. Name them  
 $AD \perp BC$  and  $\angle BAC = 90^\circ$ .



24. Draw an equilateral  $\triangle ABC$  of any size. Draw AD as its median and an altitude AM.
- (i) Does AD Coincide with AM?
  - (ii) Name the point on the median which divided it in the ratio 2 : 1.
  - (iii) What is the measure of  $\angle ADC$  and  $\angle ADB$ ?
  - (iv) Are D and M the same points?
25. Using the given figure, answer the following questions:-



- (i) How many pairs of adjacent sides are there in the figure ?
- (ii) Name the diagonals that can be formed in the figure.

## SOLUTIONS DPP-03

1. **Option (1)**

There are 4 vertices in a square.

2. **Option (2)**

Rectangle is a four-sided polygon.

3. **Option (1)**

In a square there are 2 diagonals.

4. **Option (2)**

In the given figure there are total 6 sides.

5. **Option (3)**

The vertex of an angle lies on the angle.

6. **Option (4)**

Point P lies inside  $\angle AOB$ .

7. **Option (2)**

Three triangles are present in the given figure.

8. **Option (3)**

Five triangles are present in the given figure.

9. **Option (2)**

A triangle has six parts three angles and three sides.

10. **Option (3)**

Vertex C is opposite to AB.

11. **Option (3)**

Sum of all the angles of a triangle is  $180^\circ$ .

12. **Option (1)**

The Point of intersection of medians is called centroid.

13. **Option (3)**

AC is diagonal in the given figure.

14. **Option (3)**

Angle D is opposite to angle B.

15. **Option (2)**

A given figure has 4 vertices.

16. **Option (1)**

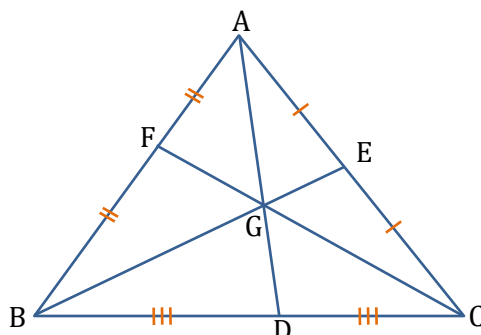
A quadrilateral has 2 diagonals.

17. **Option (2)**

A quadrilateral in which the measure of each angle is less than  $180^\circ$  is called a convex quadrilateral.

**18. Fill in the blanks**

- (i) The joint of two vertices of a polygon which are not adjacent is called as diagonal.  
 (ii) An angle has one vertex and two arms.

**19.**

- (i) Medians are AD, BE and CF.  
 (ii) Yes, the medians intersect each other at the same point G.  
 (iii) The point of intersection of the medians of a triangle is called 'Centroid'.  
 (iv) No, this point cannot be out of the triangle.

**20. (i) Sides of the polygon are**

AB, BC, CD, DE, EF and FA

- (ii) AB and BC, BC and CD are the pairs of adjacent sides.  
 (iii) AD, BE and CF intersect each other at O.  
 (iv) AD, BE and CF are the diagonals.

**21. (i) A, B and C lie on the line x.**

(ii) D, E and F lie on the line y.

(iii) Q is the point inside ABED.

(iv) Points R and S are outside the quadrilaterals ABED and BCFE.

(v) Lines x & y passes through the three points A,B,C and D,E,F respectively

**22.**

(i)



(ii)

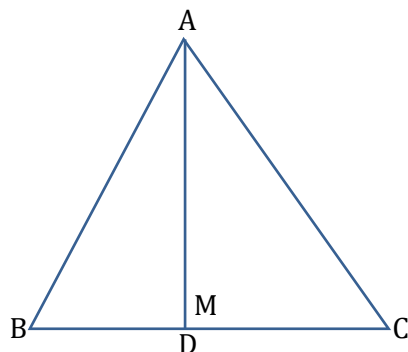


(iii)



23.  $\angle BAC$ ,  $\angle ADB$  and  $\angle ADC$  are right angles. There are 3 right angles

24. (i) Yes, AD coincides with AM.



(ii) The point on the median which divides it in the ratio 2 : 1 is called centroid of the triangle.

(iii)  $\angle ADC = \angle ADB = 90^\circ$

(iv) Yes, D & M are the same points.

25. (i) 4 pairs (PS & SR, SR & RQ, RQ & PQ, PQ & SP)

(ii) PR, QS



## Basic Geometrical Ideas DPP-04

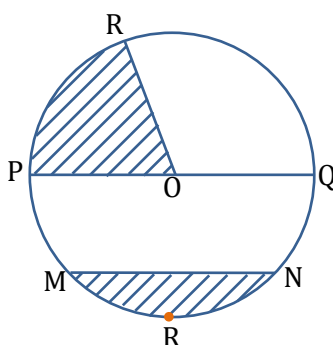
## Multiple Choice Questions

- How many circles can be drawn to pass through two given points ?  
(1) 2 (2) 0 (3) 1 (4) Infinite
- Total number of diameters of a circle is  
(1) 5 (2) 4 (3) 3 (4) Uncountable number
- Find radius of a circle having diameter of 16 cm?  
(1) 5 cm (2) 6 cm (3) 7 cm (4) 8 cm
- Area enclosed between chord and arc of a circle is called.  
(1) Sector (2) Segment (3) Arc (4) Diameter
- Radius of a circle is 5.5 cm find its diameter?  
(1) 10 cm (2) 11 cm (3) 12 cm (4) 13 cm
- Which of the following is the angle of a quadrant ?  
(1)  $60^\circ$  (2)  $90^\circ$  (3)  $180^\circ$  (4)  $360^\circ$
- Longest chord of the circle is.  
(1) Radius (2) Diameter (3) Arc (4) none of these
- The line segment joining the centre to any point on the circle is called the \_\_\_\_\_ of the circle.  
(1) centre (2) radius (3) diameter (4) chord
- An arc is a continuous part of the \_\_\_\_\_ of the circle.  
(1) Diameter (2) Major segment (3) Circumference (4) Chord
- All \_\_\_\_\_ of a circle are equal in measure  
(1) segment (2) Sector (3) Radii (4) Chords

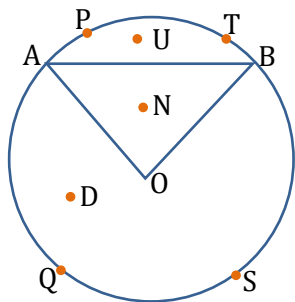
## Subjective Questions :

- Identify the following in the given figure.

- Chord
- Diameter
- Segment



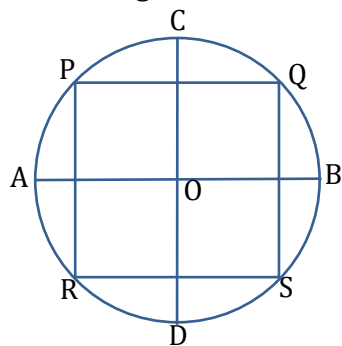
12.



Write the points which are:

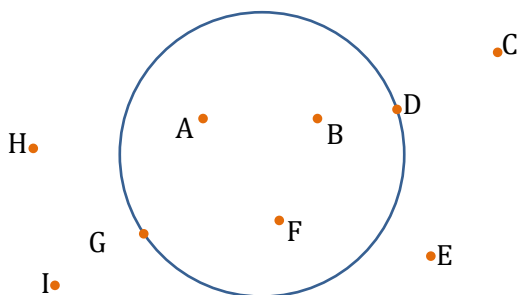
- (i) In the minor sector OAPB.
- (ii) In the minor segment ATB.
- (iii) In the Major sector OAQB.
- (iv) On the major arc AQB.
- (v) On the minor arc APB.

13. Look at the figure and answer the following:



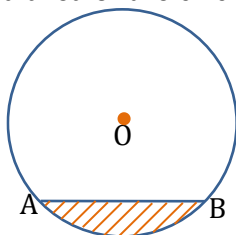
- (i) Name the diameters in the circle with centre O.
- (ii) Name the chords of the circle.
- (iii) Name all the points on the circumference of the circle.

14. Name the points



- (i) in the interior of the circle
- (ii) on the circle
- (iii) in the exterior of the circle.

15. What does the shaded area of the circle represent in the given figure?





## SOLUTIONS DPP-04

1. **Option (4)**

From two points infinite circles can pass and from three points only one circle can pass.

2. **Option (4)**

In a circle we can draw infinite diameters.

3. **Option (4)**

Diameter of circle is twice of its radius.

$$2(\text{radius}) = 16 \text{ cm}$$

$$\text{Radius} = 8 \text{ cm}$$

4. **Option (2)**

Area enclosed between chord and arc is called segment.

5. **Option (2)**

$$\text{Diameter} = 2(\text{radius}) = 2(5.5) = 11 \text{ cm}$$

6. **Option (2)**

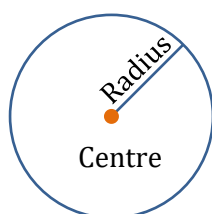
Angle of quadrant of a circle is  $90^\circ$  because quadrant is one fourth of circle.

7. **Option (2)**

Diameter is the longest chord of circle

8. **Option (2)**

Radius

9. **Option (3)**

Circumference

10. **Option (3)**

All Radii of a circle are equal in measure.

## 11. (i) MN is the chord

(ii) PQ is the diameter

(iii) MRN is the segment

## 12. (i) Points U and N are in the minor sector OAPB.

(ii) Point U is in the minor segment ATB.

(iii) Point D lies in major sector OAQB.

(iv) Points Q and S lies on major arc AQB.

(v) Points P and T lies on minor arc APB.

- 13.** (i) AB and CD are the diameters.  
(ii) RS, SQ, QP and PR are the chords.  
(iii) A, B, C, D, P, Q, R and S are the points on the circumference of the circle.
- 14.** (i) Point A, Point B and Point F  
(ii) Point D and Point G  
(iii) Point C, Point E, Point H and Point I.
- 15.** Minor Segment