



Question Bank ## Mathematics - II

Question No 1 SSC Board Examination Based on Grade IX Syllabus

- 1) Write down the properties of two congruent segments.
- 2) On the number line, points A, B, C are such that $d(A,C) = 10$, $d(C,B) = 8$, find the $d(AB)$ considering all possibilities.
- 3) Sketch proper figure and write the answers of the following question.
If $A - B - C$ and $l(AC) = 11$, $l(BC) = 6.5$, then $l(AB) = ?$
- 4) Draw a number line and denote the following points on number line. -3, 5, 7, -6
- 5) From the information given below find which of the point is between the other two.
- 6) If the points are not co linear, state so;
 - i) $d(DE) = 5$ $d(EF) = 8$ $d(DF) = 6$
 - ii) $d(PR) = 7$ $d(PQ) = 10$ $d(QR) = 3$
- 7) From fig. If $\angle AOD = 120^\circ$, then find i) $\angle COB$ ii) $\angle DOB$.
- 8) Points M, N, O are co-linear such that $d(M,N) = 10$, $d(N,O) = 18$. find $d(M,O) = ?$
- 9) Draw the labeled fig. Showing information in each of following statement and write antecedent and consequent. "Two equilateral triangles are similar".
- 10) Write answer to the following question from above fig.
 - a) 'Write intersection of ray NS and ray NM' .
 - b) State the rays of which seg RO is a subset.
- 11) Draw the fig.
 - a) 4 collinear points.
 - b) 4 non collinear points.
- 12) From the information given below, find which of the point is between the other two. If the Points are not collinear, state so. $d(S,V)=16$, $d(P,V)=9$, $d(S,P)=7$.
- 13) If $A-B-C$ and $l(AC) = 11$, $l(BC) = 6.5$, then sketch proper figure and find $l(AB)$.
- 14) Prove," the opposite angles formed by two intersecting lines are of equal measure."
- 15) Draw labeled figure showing information in statements," if angles in a linear pair are
- 16) Congruent, then each of them is a right angle." And write the antecedent and consequent.
- 17) With the help of the given figure, find the value of If $AB=5$, $BP=2$ & $AP=3.4$ cm compare the segment
- 18) observe the fig. write down the pair of congruent segment
- 19) U, V & A are three cities on a straight road, the distance between U & A is 215km between V & A is 140km & between U & V is 75 km which of them is between the other two?
- 20) Draw the fig & give the answer if $R-S-T$ & $l(ST) = 3.75$, $l(RS) = 2.15$ then $l(RT) = ?$
- 21) In fig. If line $l \parallel$ line m then Find the measure of angles 'm' and 'n'
- 22) In fig. Find the measure of angle 'd'?
- 23) In fig. If $\angle a + \angle b = 180^\circ$ then
- 24) prove that line 'l' \parallel line 'm'
- 25) From fig. Sides of angles $\angle PRN$ & $\angle QSM$ are Parallel to each other. Prove that $\angle PRN \cong \angle QSM$.
- 26) In $\triangle XYZ$, $\angle X = 68^\circ$, $\angle Y = 72^\circ$. Find $\angle Z$.
- 27) Line $L \parallel$ side QR , $\angle P = 72^\circ$, $\angle Q = 60^\circ$, $\angle R = 48^\circ$. find $\angle RPD$ and $\angle QPV$
- 28) Line $p \parallel$ line q , line l , line m are transversals measure of some angles are shown in fig. find. $\angle a$, $\angle b$, $\angle c$, $\angle d$.
- 29) In figure $x + y = w + z$ then prove that AOB is line.

- 30) In figure $\angle PQR \cong \angle QPR$ then prove that $\angle PRT = \angle PQR$
- 31) In the figure, Find the values of x and y. If $AB \parallel CD$ and line l is transversal.
- 32) In figure if $AB \parallel CD$, $EF \perp CD$ and $\angle GED = 126^\circ$. Find $\angle AGE$, $\angle GEF$.
- 33) If the line $q \parallel$ line p line m is transversal & if $a = 80^\circ$, find the value of 'f' and 'g' .
- 34) In figure if line $AB \parallel$ line CF & line $BC \parallel$ line ED , then, prove that $\angle ABC + \angle FDE = 180^\circ$
- 35) If line $AB \parallel CD \parallel$ line EF line QP is their transversal if $Y : Z = 4 : 5$, then find the measure of
- 36) $\triangle XYZ \sim \triangle LMN$, write the corresponding angles of the two triangles and also write the ratio of corresponding sides.
- 37) Point A is on the bisector of $\angle XYZ$. If $AX = 3$ cm, then, find AZ . Give the reason.
- 38) $\triangle FAN$, $\angle F = 80^\circ$, $\angle A = 40^\circ$, find out the greatest and smallest side of the triangle, state the reason.
- 39) In $\triangle PQR$, $\angle Q = 90^\circ$, $PQ = 12$, $QR = 5$ and QS is a median, find QS .
- 40) In fig. Point G is the point of concurrence of the medians of $\triangle PQR$ if $GT = 3.5$. Find the length of PG and PT .
- 41) The measure of triangle are x° , $(x+10)^\circ$, $(2x+10)^\circ$. Find the measure of each angle.
- 42) $\triangle XYZ$, $XY = 5$ cm, $YZ = 7$ cm, $XZ = 6$ cm. If $\triangle XYZ \sim \triangle SBH$ and $SB = 10$ cm. Find length of remaining side of $\triangle SBH$.
- 43) In quadrilateral $ABCD$, $AB = AD$ and AC bisects A . Show that $\triangle ABC = \triangle ADC$. What can you say about BC and DC ?
- 44) AD and BC are equal perpendicular to a line say AB , show that CD bisects AB . Prove that an equilateral triangle is equiangular.
- 45) AD is an altitude of an isosceles ABC , in which $AB = AC$, shows that AD bisects BC .
- 46) Show that in right angled triangle, the hypotenuse is the longest side.
- 47) The length of hypotenuse of right angle triangle is 15 .find the length of median of hypotenuse..
- 48) $\triangle PQR$, $\angle Q = 90^\circ$, $PQ = 12$, $QR = 5$, QS is a median find QS .
- 49) Observe the fig & state the test by which test the triangle in each pair is congruent.
- 50) $\angle ACD$ is an exterior angle of $\triangle ABC$, $\angle B = 40^\circ$, $\angle A = 70^\circ$, find the measure of $\angle ACD$.
- 51) In $\square IJKL$, side $IJ \parallel$ side KL , $\angle I = 108^\circ$, $\angle K = 53^\circ$ then find the measures of $\angle J$ and $\angle L$.
- 52) Adjacent sides of rectangle are 7 cm and 24 cm. Find the length of its diagonal.
- 53) If diagonal of a square is 13 cm then find its side.
- 54) If opposite angles of a rhombus are $3x^\circ$ and $(4x-20)^\circ$ then find the value of x .
- 55) If the diagonal of a square is $12\sqrt{2}$ cm. Then find perimeter of a square.
- 56) $\square ABCD$ is parallelogram if $\angle A = (4x+13)^\circ$, $\angle D = (5x-22)^\circ$. Then find $\angle B$, $\angle C$.
- 57) The measure of two adjacent sides of parallelogram is 75 cm, one of its side is greater than other side by 25 cm. Find length of all sides.
- 58) Diagonals of rhombus are 6cm, and 8cm respectively, then find sides of rhombus.
- 59) The angles of quadrilateral are in the ratio 3:5:9:13. Find the measure of all angles of quadrilateral.
- 60) If diagonals of parallelograms are equal, then show that it is a rectangle.
- 61) Diagonal AC of parallelogram $ABCD$ bisects $\angle A$, show that it bisects $\angle C$ also.
- 62) Adjacent sides of a rectangle are 7 cm. and 24 cm. find the length of diagonal.
- 63) Diagonals of a parallelogram intersect each other at point Q . if $AQ=5$, $BQ=12$ and $AB=13$. Then show that $ABCD$ is a rhombus.
- 64) The ratio of measure of two adjacent angle of parallelogram is 1:2 find the measure of all angles of the parallelogram.
- 65) The perimeter of parallelogram is 150cm .One of its side is greater then the other side by 25 cm, find the length of all side.
- 66) If the opposite angles of rhombus are $(2x)^\circ$ & $(3x-30)^\circ$ then find the value of x .
- 67) The ratio of two adjacent side of parallelogram is 3:4 and its perimeter is 112 cm find the length of its each side.
- 68) The diagonals of rhombus are 20cm & 48 cm find the length of side.
- 69) The measure of angle of Quadrilateral $3x$, $4x$, $5x$, $6x$ find the value of x .

- 70) The lengths of parallel chords which are on opposite sides of the center at a
71) Circles are 6 cm and 8 cm. If radius of the circle is 5 cm. Then find the distance between these chords.
- 72) Distance of chord AB from the center of a circle is 8 cm. Length of the chord
73) AB is 12 cm. Find the diameter of the circle.
- 74) In a circle with radius 13 cm, two equal chords are at a distance of 5 cm from the center. Find the length of the chord.
- 75) Construct $\triangle ABC$, $\angle B = 60^\circ$, $BC = 6.4$, $\angle C = 50^\circ$. Construct incircle.
76) Find area of circle whose diameter is 14 cm.
77) Radius of circle is 34 cm. And distance of chord from center is 24 cm. Find distance of chord from its center
- 78) Construct circumcircle, $\triangle DEF$, $DE = EF = 6\text{cm}$, $\angle F = 45^\circ$.
79) Recall that two circles are congruent if they have the same radii prove that Equal chords of congruent circle subtend equal angles at their centre.
80) Prove that if chords of congruent circle subtend equal angle at their centre then chords are equal.
- 81) If a line intersects two concentric circles with centre O at A, B, C and D. prove that $AB=CD$.
82) From the given information in figure find $m\angle ADC$. Where 'O' is centering circle.
83) Construct $\triangle DEF$ such that $DE= EF= 6\text{cm}$ $\angle F= 45^\circ$ construct circumcircle.
84) In the fig. 'O' is the center of circle & $AB=CD$.if $OP= 4$ cm .Find the length of OQ.
85) In fig center of two circle is O chord AB of bigger circle intersects the smaller circle in point P & Q show that $AP=BQ$.
- 86) The length of parallel chord which are on opposite sides of the center of circle are 6cm & 8 cm .if the radius of circle is 5cm. then what is the distance between the chord.
87) Draw the co-ordinate system on a plane and plot the following points? L(-2, 4) Q(6, -5)
88) In which quadrant are the following points: A(3, 5), B(-2, -7)
89) Write the equation of the line parallel to the y-axis at a distance of 7 units from it to its test.
90) The point Q(+3,-2), lie on a line parallel to the y-axis. Write the equation of the line and draw its graph.
- 91) How many lines are there which are parallel to x-axis and having distance 5 units?
92) Draw the coordinate system on a plane and plot the following points.
i) A (-2, 4) ii) B(6,-5) iii) C(0, -2) iv) D(-3, -4)
- 93) Complete the table for drawing the graph. $2x - y = 1$.
94) Which of equation given below has graph parallel to x-axis and which one have graph parallel to y-axis.
i) $x = 3$ ii) $y - 2 = 0$ iii) $x+6 = 0$ iv) $y = -5$
- 95) Draw the graph of equation; $x+y = 0$
96) Without plotting points on graph state in which quadrant or on which axis do the following point lie, (0,-3),(4,-5),(5,6),(-7,8)
97) How many lines are there which are parallel to x-axis and having a distance 5 units from it?
98) Prepare a table to draw graph of given equation $2x-y+1=0$.
99) What is the name of horizontal and the vertical lines draw to determine the position of any point in the contusion plane.
- 100) An graph paper plot the point A(3,0) B(3,3) C(0,3) join A, B and C what is the figure Formed?
101) In which quadrant are the following points?
(a) Whose both co-ordinates are positive.
(b) Whose both co-ordinates are negative?
- 102) Which of the equation given below have graphs parallel to the X-axis & which one have graphs Parallel to the Y-axis? 1) $X= -6$ 2) $Y-4=0$ 3) $Y=6$
103) Find the value of: $2\tan 45 + 3\sin 30 - \sin 45 = ?$
104) Find the value of: $\cot 60^\circ \sin 60^\circ + \cos 60^\circ = ?$
105) In right angled triangle $\triangle XYZ$, $\angle X = 90^\circ$, $XZ = 8\text{cm}$, $YZ = 17\text{cm}$. Then find $\cos Y$, and $\tan Y$
106) If $\cos \theta = 8/10$, then find $\sin \theta$
107) Find the value of; $2\tan 45 + \cos 30 - \sin 60$.

- 108) write the following ratios
 i) $\tan 40^\circ$ ii) $\cos 40^\circ$ iii) $\tan 60^\circ$
- 109) Find the value of: $\sin 60^\circ + \cos 60^\circ = ?$
- 110) If $\sin \theta = 15/17$, $\cos \theta = ?$
- 111) In right angled triangle XYZ if $\angle Z = \theta$, $\angle y = 90^\circ$, $\cos \theta = 24/25$. Find $\sin \theta$ and $\tan \theta$.
- 112) If $\tan \theta = 1/2\sqrt{2}$ then find $\sin \theta$ and $\cos \theta$
- 113) Find the value of: $\cos 60^\circ \times \cos 30^\circ + \sin 60^\circ \times \sin 30^\circ$
- 114) Find the value of: $2\sin 30^\circ \times \cos 0^\circ + \sin 90^\circ = ?$
- 115) In right angled ΔXYZ PQR, $\angle Q = 90^\circ$, $\angle R = \theta$ and $\cos \theta = 24/25$ find $\sin \theta$ and $\tan \theta$.
- 116) If $\tan \theta = 12/5$, then $5\sin \theta - 12\cos \theta = ?$
- 117) Find the surface area of a sphere having radius '7'. ($\pi = 22/7$)
- 118) If the radius of a solid hemisphere is 5 cm. Then find its curved surface area. ($\pi = 3.14$)
- 119) Find the volume of a sphere, if its surface area is 154.59 sq.cm.
- 120) If area of base of cone is 1386 sq.cm. Find its radius.
- 121) Curved surface area of cylinder is 1980 cm^2 and radius of its base is 15 cm. Find the height of the Cylinder. ($\pi = 22/7$)
- 122) Find the volume of cone if its total surface area is 7128 sq cm and radius of base is 28 cm. ($\pi = 22/7$)
- 123) Total surface area of cube is 5400 sq cm. Find surface area of all vertical faces of the cube.
- 124) Volume of hemisphere is $18000\pi \text{ cm}^3$, Find its diameter.
- 125) Find volume of sphere if its surface area is 154 sq cm.
- 126) Find the volume of a sphere if its surface area is 15459 cm^2 .
- 127) Find the volume of a cone if its total surface area is 712859 cm^2 and radius of base is
- 128) 28cm ($\pi = 22/7$)
- 129) What will be the volume of a cube having length of edge 7.5cm?
- 130) Find the surface area of circular plane having radius 7cm.
- 131) Find volume of a sphere whose surface area is 314.59 cm^2 (take $\pi = 3.14$).
- 132) $l=13 \text{ cm}$, $h=12 \text{ cm}$, find the radius of the cone?
- 133) The volume of the cylinder is 200 cm^3 . its heights is 10cm. find the area of the base.
- 134) Find the volume of the hemisphere with diameter is 6cm.
- 135) If $r=6 \text{ cm}$, $l=8 \text{ cm}$ then find the total surface area of the cone?

