IISEMESTER EXAMINATION 2017-2018

Std. : IX **Marks: 40**

Date: 09-04-18 **Sub: MATHS II [GEOMETRY]** **Time: 2 Hrs**

Q.1] A] Write the correct alternative for each of the following questions **(5)**

1. The total number of angles formed by a transversal of two lines is ……..

   a. 2 b. 4 c. 8 d. 16

2. Every point on the bisector of an angle is equidistant from the sides of the……..

   a. angle b. triangle c. square d. none of these

3. The point of concurrence of all angle bisector of a triangle is called the…….

   a. centroid b. circumcentre c. incentre d. orthocentre

4. Total surface area of a solid hemisphere is…….

   a. ðrh b. ðrl c. $3ðr^2$ d.3ðrh

5. The identity , $Sin^2è + cos^2è$ is

   a. 3 b. 2 c. 5 d. 1

B] Solve the following (Any 5) **(5)**

1. The Perpendicular height of a cone is 12 cm and its slant height is 13 cm find the radius of The base of the cone .
2. Find the value of 2tan45 + cos30 – sin 60.
3. In which quadrant are the following points ?

   Whose both co- ordinates are positive .

   Whose both co- ordinates are negative .

4. Points X,Y,Z are collinear such that d(X,Y) = 17 ,d(Y,Z) = 8 , find d(X , Z)
5. The measure of angles of a triangle are in the ratio 5:6:7 find the measures.

   Solution : Let the measure of the angles of a triangle be _____

   5x+6x+7x =_____

   _____

   the measure of the angles of a triangle are _____

6. The measure of angles of ABCD are in the ratio 4:5:7:8 find the measures .

   solution: Let the measure of the angles of a ABCD be _____

   4x + 5x+7x+8x = _____

   the measure of the angles of ABCD are _____

Q.2 Solve the following (Any 4) **(8)**

1. In figure ,Line AB line CD and line PQ is transversal .measure of one of the angles is given . Hence find the measure of angles∠ART ,∠CTQ, ∠DTQ, ∠PRB.

   m∠ART + m∠_____ (_____)

   m∠ART =_____

   line AB || line CQ and line PQ _____

   m∠CTQ =_____ (_____)

   m∠DTQ=_____ (_____)

   m∠PRB=_____ (_____)

2. If the measure of angles of the triangles are 45, 45 , 90 then find the length of each side containing the right angle is — hypotenuse.

   Ans : In , ∠B = 90 and ∠ A =_____

   BC =

   By _____

   AB^2 +_____

   AB^2 + (_____)

   AB = _____

3. If the radius of hemisphere is 5 cm, then find its curved surface area and total surface area (ð = 3.14)

   Solution : given , r = _____

   curved surface area =_____

   total surface area =_____

4. Find the value of,

$$\frac{60}{60 + 60}$$

5. The point (-3,-2) lies on a line parallel to the Y-axis. Write the equation of line and draw a graph.

Q.3 Solve the following (Any 3) **(9)**

1. In Figure seg PD is a median of PQR .Point T is the midpoint of segPD.Produced QT Intersects PR at M.Show that — = –

   Proof :

   In PDN ,Point T is the midpoint of seg PD and

   Seg TM segDN [Q-T-M]

   Point M is_____(_____ _)

   PM =_____

   In QMR

   Point D is the _____

   Seg DN

   Point N is the _____ (_____)

   RN =_____

   PM=_____

   PR =_____(_____)

   PR = 3

   PM = 1

2. Draw the graph of the following equation on the same system of co-ordinates. Write the co-ordinate of their point of intersection.

   X+4=0 ,Y-1=0, 2x+3=0, 3y-15=0

3. In right angled ACB, if ∠C=90, AC=3, BC=4 find the ratios sinA, sinB, cosA, cosB, tanA, tanB

   Answer; in right angled ACB, by_____

   AB=_____

   =25

AB=_____

sinA=BC=_____

sinB=_____ cosA=_____ cosB=_____

tanA=_____ tanB=_____

4. The Curved surface area of cylinder is 1980cm^2 and radius of its base is 15cm.find the height of cylinder and total surface area.

   Solution: given r =_____

   Curved surface area=_____

   2ðrh=_____

   Therefore h=_____

   And total surface area of cylinder =_____.

   _____

Q.4 Solve the following (Any 2) (8)

1. In LMN, LM=7.2cm, M=105, MN=6.4cm, then draw LMN and construct its circumcircle.
2. In right angled MJT, if ∠T= ,∠J= 90, cos =—, find sin and tan . Similarly, find (sin^2) and (cos^2).

   Solution:

   In LMN, ∠M= _____

   cos = _____

   —= _____

   MN= 24 k

   , LN^2 =_____(_____)

   (25k)^2= _____

   LM^2 = _____

   LM= _____

sin =_____

$\sin^2$ = _____

tan = _____

cos = _____

$\cos^2$ = _____

3. Volume of a hemisphere is 18000ð cubic cm.find its diameter,curved and total surface area.

.solution :

Volume of hemisphere = _____

18000ð = _____

_____

r =_____

diameter =_____

curved surface area =_____

_____

_____

total surface area =_____

_____

Q.5 Solve the following (Any 1) **(5)**

1. Prove that the chords of a circle equidistant from the center of a circle are congruent .

2. Prove that,Opposite sides and opposite angles of a parallelogram are congruent.