Subjective Ans.

ST.LAWRENCE HIGH SCHOOL

A Jesuit Christian Minority Institution

2nd Term Examination

Sub: Algebra-Geometry **Class: 7** **F.M.: 80**

Duration: 2 Hours 30 Mins **Model answer** **Date: 09/08/2019**

Group-A

1. Multiple Choice Questions: 1x5=5

i) (a+b) (a-b) equals

a) a^2-b^2, b)

ii) The sum of a+b+ab, -b+c-bc and -c-a+ac is

c)ab-bc+ac

iii) Which of the following is a binomial?

d) $12(a^3 + a)$

iv) The length and breadth of a rectangle are (x+8) and (x-9) Units respectively. Then area of the rectangle is

b) x^2-x-72

v) If 3x+2=14 then value of x is

c)4

2. Fill in the blanks: 1x5 = 5

i) A _trinomial is the sum or difference of three monomials.

ii) $(a-b)^2 + 4ab$ equals $(a+b)^2$

iii) The coordinates of the origin are (0,0).

iv) The number of letters in the word SNAIL that have symmetry is 2.

v) A rotation turns a shape through an angle about a fixed point, called the Rotational symmetry.

3.State True or False: 1x5=5

i) The point (2,3) lies in second quardrant. (False)

ii) Y = a is a line parallel to x axis.(True)

iii) $(x+2)(x+7) = x^2 + 9x + 14$. (True)

iv) 6,8 and 10 are the sides of a right angled triangle. (True)

v) A triangle can have two right angles. (False)

4. Match the column : 1x5= 5

i) three equal sides	e) equilateral
ii) the side of opposite to right angle	a) hypotenuse
iii) No line of symmetry	b) 69
iv) The sum of the angles of a quadrilateral	c) 360^0
v) Flat surface	d) plane

5. Answer in one word : 1x5 = 5

i) The point (-3,-5) lies in Third quadrant.

ii) Through a given point infinite number of lines can be drawn.

iii) When three or more lines pass through the same point then the common point is called the point of concurrency.

iv) The point where the x axis and y axis cross each is called the origin.

v) The sum of the angles round a point is 360 degree.

Group- B

5. Very short answer type questions: 2x4 = 08

i) Multiply: (5x-9y) and (3x+11y) Ans- $15x^2+28xy-99y^2$.

ii) Subtract : a-b+c from 2a+b-c Ans- a+2b-2c.

iii) Define obtuse triangle. Ans- Any one angle is obtuse (>90 but < 180).

iv) Find the complementary angle of 64^o. Ans- $(90-64)= 26^0$.

6. Short answer type questions : 3x4 = 12

i) Simplify: (a+1)(a+2)(a+3)
Ans- $a^3+6a^2+11a+6$.

ii) Evaluate $(97)^2$ by using the identity $(a-b)^2=a^2-2ab+b^2$
Ans- $(100-3)^2=9409$.

iii) In a right angled triangle, the two acute angles are in the ratio 2: 3. Find these angles.
Ans-2x+3x+90=180. Hence,x=18. Therefore the required angles are $36^0$and 54^0.

Or

Find the length of the hypotenuse of right angled triangle having other sides of lengths 3 and 4 units.
Ans- Let the length of hypotenuse be x.
BTP. $X^2=3^2+4^2$or x=5 units.

iv) Simplify: $(5m - \frac{1}{5m})^2$ Ans-$25m^2-2+1/25m^2$.

Or

Find the continued product (x+3) (x-3) (x^2+9) Ans-$(x^2-9)(x^2+9)=x^4-81$.

Group – C

7. Long answer type questions: 5x7 = 35

i) Divide $6x^3 - x + 19x^2 - 29$ by 2x + 3. Ans- Q-$3x^2+5x-8$ and R= -5.

ii) Simplify : $(3P^9+ \frac{1}{P^9})^2$ **Ans-**$9p^{18}+6+1/p^{18}$.

OR

Simplify : $(x^2-4xy-4y^2)(2x^2+8xy+2y^2)$
Ans-$2x^4-38x^2y^2-40xy^3-8y^4$.

iii) Draw the line on a graph paper for the given equation Y = x +2
Ans- Draw x-axis and y-axis as horizontal and vertical axis respectively. Plot three points and the reqd. straight line.

OR

Draw a line on a graph paper for the equation $Y = 3x - 5$

Ans- Same instructions as above.

iv) The angles of a triangle are in the ratio 3:7:8. Find the measure of each angle of the triangle.

Ans- BTP. $3x+7x+8x=180^0$. Or $x=10^0$. Hence the required angles are $30^0, 70^0, 80^0$.

v) Draw a line segment 6.8 cm long and draw its perpendicular bisector using compasses and ruler.

Ans – Perpendicular bisector should be drawn showing traces of construction.

vi) Prove that the sum of the angles measure of a triangle is 180^o

Ans- Refer text book page 203.

vii) Draw a line segment PQ=5cm. Mark a point O above it. Through O draw a line parallel to PQ. Ans- Parallel line to PQ should be drawn showing traces of constructions.