

GREENLAWNS HIGH SCHOOL

TERMINAL EXAMINATION 2020

STD IX

SUBJECT –MATHEMATICS

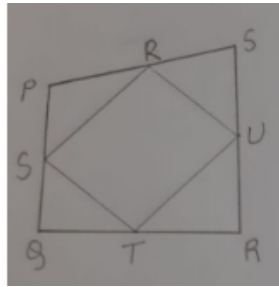
TIME 2 HOURS

MARKS -60

(Attempt all Questions)

QUESTION 1

- a) Expand the following $(4x-2y)^3$ (3)
- b) In the figure drawn below PQRS is a quadrilateral. S,T,U & R are midpoints of respective sides. Prove that quadrilateral STUR is a parallelogram. (3)



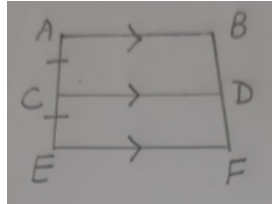
- c) Solve the following simultaneous equations by using the cross multiplication method (4)
- $$4x+5y=2$$
- $$7x-6y=33$$

QUESTION 2

- a) A person invests Rs7000 at 14% p.a compound interest for 2 years. Calculate (3)
- 1) The interest for the 1st Year
 - 2) The amount at the end of the 1st year
 - 3) Amount at the end of the 2nd year. Correct to the nearest whole number.
- b) Factorize $a^4 - 25b^2 + 30b - 9$ (3)
- c) If $\frac{5 + 5\sqrt{5}}{3 - 2\sqrt{5}} = a + b\sqrt{5}$. Find a & b (4)

QUESTION 3

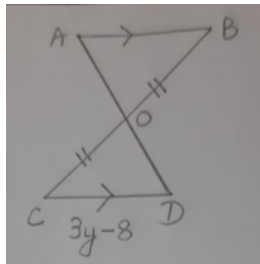
- a) In the figure drawn below $AB \parallel CD \parallel EF$ and $AC = CE$, find "x" if $BD = 4x+8$ & $DF = 5x-2$. Hence (3) find BF.



- a) If $A(3, 10)$ & $B(-2, y)$. Find y if $AB = \sqrt{41}$ units. (3)
- b) Plot $\sqrt{3}$ on a number line using a compass and ruler only. (4)

QUESTION 4

- a) In the figure drawn below if $AB \parallel CD$, $BO = CO$ & $AB = 4\text{cm}$, then find y . (3)



- b) Solve for x if $6^{2x+3} = 6^{2x+1} + 1260$ (3)
- c) A certain sum amounts to Rs 21,600 in 2 years and Rs 31,104 in 4 years at the same rate compounded annually. Find the rate and sum. (4)

QUESTION 5

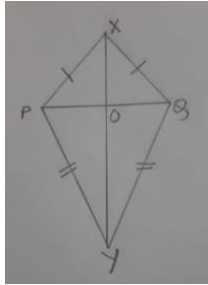
- a) Find "a" if $P(0, 2)$ is equidistant from $(3, a)$ & $(a, 5)$ (3)

b) In ΔABC , If M & N are midpoints of AB and AC respectively. If $MN = 2x+5$, $BC = x+16$. Find x (3)
Hence calculate length of BC.

c) In the figure drawn below $PX = QX$ and $PY = QY$. (4)

Prove 1) Angle $PXY =$ Angle QXY

2) XY is the perpendicular bisector of PQ



QUESTION 6

a) Factorise $y^3 - y^2 + by + y - b - 1$ (3)

b) If $2^a \times 3^b \times 5^c = 2160$ find a, b & c. Hence find the value of $3^a \times 2^{-b} \times 5^{-c}$ (3)

c) When 3 is added to the denominator & 2 is subtracted from the numerator a fraction it becomes $\frac{1}{4}$ & when 6 is added to the numerator and the denominator is multiplied by 3 (4)

The fraction becomes $\frac{2}{3}$. Find the fraction.