(4)

GREENLAWNS HIGH SCHOOL
FINAL EXAMINATION 2016-17

SUBJECT: MATHEMATICS **CLASS: VIII**
TIME: 2 HOURS **MARKS: 80**

NOTE-

1) The first ten minutes are meant for reading this question paper. The time given at the head of this paper is the time allotted for writing this paper.
2) Section A is compulsory. Attempt all the questions from this section.
3) In Section B, attempt any four questions out of five questions.
4) All answers to be written in the answer booklet. Show working and calculation wherever required (on the same page).

SECTION A (40 marks)
(Attempt all the questions)

Question-1 ***(10)***

i) Raj was supposed to give 30% of Rs. 1,50,000 to Nikhil but he gave Rs. 54,000. Find out the percentage error done by Raj. (3)

ii) One angle of a decagon is 270° and remaining angles are equal. Find the measure of each equal angle. (3)

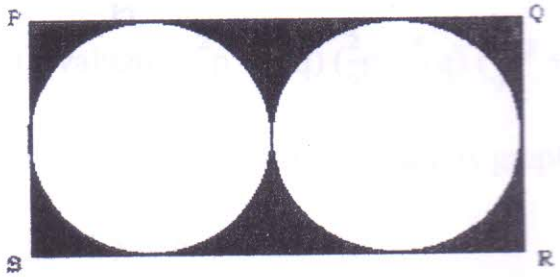
iii) Construct a square if its diagonal is 5.6 cm. (4)

Question-2 ***(10)***

i) $x + \frac{42}{x} = 13$ (3)

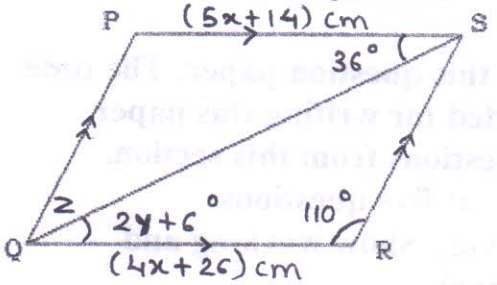
ii) By selling a laptop for Rs. 36,000, a man loses 10%. At what price should he sell it in order to gain 15%? (3)

iii) A rectangle PORS encloses two circles. Find the area of shaded portion if PQ= 56cm and QR= 28cm. ($\pi = \frac{22}{7}$) (4)



Question-3 ***(10)***

i) In the adjoining figure, PQRS is a parallelogram. (3)
Find the values of x, y, and z.



ii) Solve: $\frac{3x-1}{2x-3} = \frac{3x+1}{2x+4}$ (3)

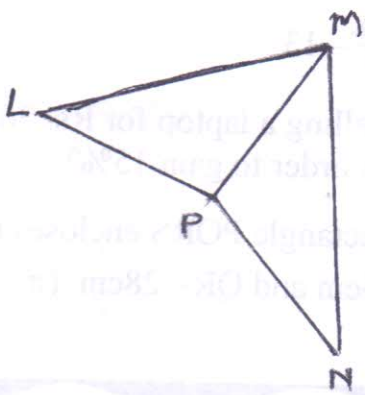
iii) Solve the following equations simultaneously - (4)
$15x - 8y = 29$
$17x + 12y = 75$

Question-4 ***(10)***

i) Factorise: $18\,(x + y)^2 - 32\,(x - y)^2$ (3)

ii) Simplify: $\frac{x^2+3x}{4x^2-9} \div \frac{x^2-9}{2x-3}$ (3)

iii) In the adjoining figure, PM bisects angle LMN, if angle LPM = angle NPM (4)
Prove that: a) Δ LMP $\approx \Delta$ NMP
b) angle LPM = angle NPM



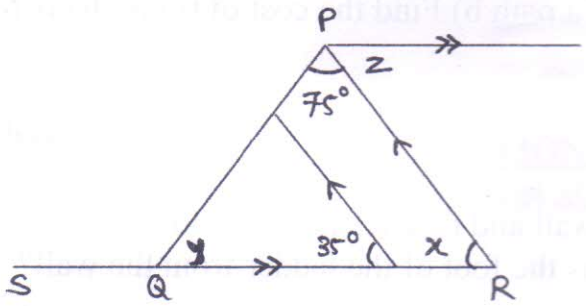
SECTION B (40 marks)

(Attempt any 4 questions)

Question-5 ***(10)***

i) A shirt costs Rs. 650 and t-shirt costs Rs. 450. The vendor allows successive discount of 25% and 8%. What is the total amount to be paid? (3)

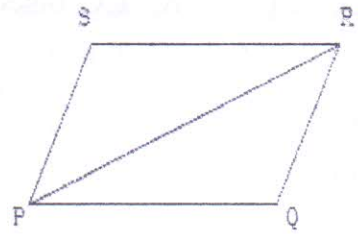
ii) Find the values of x, y and z. (3)



iii) The triangle PQR of vertices P (-4, 7), Q (-8, 5) and R (-2, 3) is reflected in Y-axis to the triangle P'Q'R', which is further reflected in X-axis to the triangle P"Q"R". Plot these triangles on graph paper and write their co-ordinates. What single transformation maps triangle PQR to triangle P"Q"R"? (4)

Question-6 ***(10)***

i) Calculate the area of a parallelogram where PQ = 21cm, QR=20 cm and PR= 29cm (3)



ii) Evaluate: $(\frac{2}{3}p + \frac{4}{5}q)(\frac{2}{3}p - \frac{4}{5}q)(\frac{4}{9}p^2 + \frac{16}{25}q^2)$ (3)

iii)Solve the following equations graphically- (4)

$3x - y = 0$

$x + y = 8$

Question - 7 **(10)**

i)Construct an equilateral triangle of side = 4.8 cm. Draw the circumcircle of the triangle. Measure its radius. (3)

ii) Simplify: $\frac{2}{p+4q} - \frac{1}{p-4q} + \frac{9p}{p^2-16q^2}$ (3)

iii) A path of uniform width 3m runs around outside of rectangular field of dimensions 60m × 40m. a) Find the area of a path b) Find the cost of tiling the path at the rate of Rs. 8.75 per sq.m. (4)

Question - 8 **(10)**

i) A 26m long ladder rests against vertical wall and reaches to the window. If the window is 10m above the ground, how far is the foot of the ladder from the wall? (3)

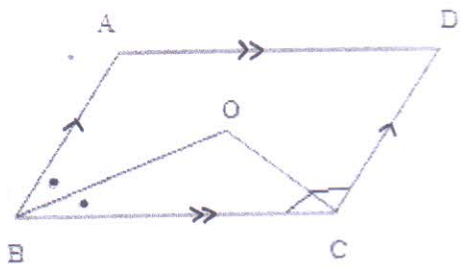
ii) Construct a parallelogram PQRS if PQ = 5.6 cm, QR = 4cm and angle PQR = 75°. (3)

iii) Nikita's age is $\frac{1}{5}$ of her father's age. After 6 years her age will be $\frac{1}{3}$ of her father's age. What are their present ages? (4)

Question - 9 **(10)**

i) Factorise: $10(a+2b)^2 + 3(a+2b) - 4$. (3)

ii) ABCD is a parallelogram, angle ABC = 60°. BO bisects angle ABC, CO bisects angle DCB.
Prove that: ΔBOC is a right-angled triangle. (3)



iii) Evaluate using $(a+b)^2$ or $(a-b)^2$ or $(a+b)(a-b)$ (4)

a) 40.6×39.4

b) $(491)^2$