Greenlawns School, Worli
First Term Examination
Mathematics

STD: VIII | Marks: 80
Date: /09/2015 | Time: 2½hrs

Section A
(Attempt all questions of this section)

Question 1

a. Find the amount and compound interest for Rs.16000 for 3 years at 5% per annum **[3]**

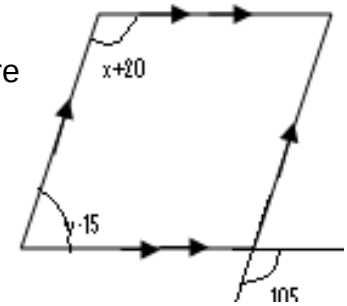
b. The diagonals of a rhombus are 12 cm and 16 cm. Find (i) the length of its one side (ii) its perimeter **[3]**

c. **i.** Use the formula to find the value of 103 x 97 **[2]**

ii. If a+b = 5 and ab = 6 , find $a^2 + b^2$ **[2]**

Question 2

a. Find the value of x and y in the given figure **[3]**



b. Factorize i. $1 - 2a - 2a^2 + 4a^3$ **[1]**

ii. $32\ (x\ +\ y)^2 - 2x - 2y$ **[2]**

c. Solve algebraically: $\frac{2}{x} + \frac{2}{3y} = \frac{1}{6}$, $\frac{3}{x} + \frac{2}{y} = 0$ **[4]**

Question3

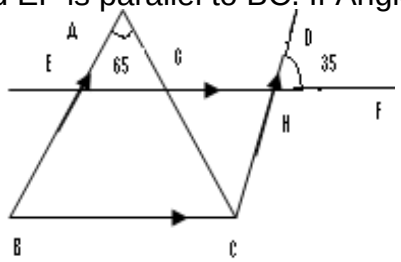
a. Solve the inequation: $12 + 1\frac{5}{6}x \leq 5 + 3x$ & $x \in R$. **[3]**

b. Plot the points A (2, 1), B (-1, 3), C (-3, 0), D (0, -2) on the graph paper and join the points to make the figure ABCD and state the name of the figure? **[3]**

c. Find the square root of 67 correct to three places of decimal. **[4]**

Question 4

a. In the adjoining figure, AB is parallel to CD and EF is parallel to BC. If Angle ABC = 65 and angle DHF = 35, Find the angle AGH **[3]**



b. **I** If a + b + c = 9, $a^2 + b^2 + c^2 = 29$ find ab + bc + ca **[2]**

ii. Find the product of $(x + \frac{3}{4})\ (\ x - \frac{3}{4})$ **[1]**

c. Solve & graph the solution set of:

i) $2x - 9 < 7$ and $-3x + 9 \leq 25$, $x \in R$. **[4]**

Section II

(Attempt any four questions from this section)

Question 5

a. Find the value of $\sqrt{\frac{36}{1.17} \times 0.49 \times 4\frac{17}{25}}$ **[2]**

b. Solve graphically the equations: x + y = 3, 3x - 2y = 4. **[4]**

c. The sum of the digits of two digit number is 8. The number obtained by interchanging the two digits exceeds the given numbers by 36. Find the number. **[4]**

Question 6

a. Factorize $(x + 2y - 5z)^2 - (x - 2y + 5z)^2$ **[3]**

b. The width of the Sudha's garden is 2/3 of its length. If its perimeter is 40m, find its dimensions **[3]**

c. A motor boat covers certain distance downstream in a river in five hours, it cavers the same distance upstream in five and half hours. Find the speed of boat in still water. **[4]**

Question 7

a. If $3x + 2y = 9$ and $xy = 3$, find $27x^3 + 8y^3$ **[3]**

b. Find the time in which Rs.1200 will amount to Rs.1536 at 3.5% per year **[3]**

c. Find L.**C.**M of $8x2y(x^4 - y^4)$, $12x^3y^2(x^2 + 2xy - 3y^2)$ & $24x^4y^3(x^3 + xy^2 + x^2y - y^3)$ **[4]**

Question 8

a. Find the least number which must be subtracted from 5607 to make it a perfect square **[3]**

b. Find the cube root of the following:

i. – 216 x 729 **[2]**

ii. – 0. 512 **[1]**

c. **I.** Δ ABC is right angled at vertex A. Calculate the length of BC if AB=12 cm ,AC=9 cm **[2]**

ii. In Δ PQR, $\angle P = 40^0$, $\angle Q = 60^0$. Name the smallest and largest sides of the triangle **[2]**

Question 9

a. solve $\frac{7}{x} = 9 - 2x$. **[3]**

b. Find the H.C.F of $6X^2 - 11X + 3$ and $3X^2 - 26X - 9$ **[3]**

c. Simplify: $\frac{1}{4X^2+8X+3} + \frac{1}{4X^2+16X+15} + \frac{1}{4X^2+12X+5}$ **[4]**

Question 10

a. What is the smallest number by which 3584 should be divided so that the quotient will be a perfect cube? **[3]**

b. Solve for a: $2a^2 - 15a + 27 = 0$ **[3]**

c. If $m - 1/m = 5$, find the value of $m^2 + 1/m^2$ and $m^4 + 1/m^4$ **[4]**

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