Greenlawns School, Worli
Mathematics

STD: VIII **Marks: 60**
Date: 24/09/2020 **Time: 2hrs**

Question 1

a. Simplify : $\frac{a^{7+2n}\,(a^2)^{3n+2}}{(a^4)^{2n+3}}$ **[3]**

b. Find the least number which must be subtracted from 1104 to obtain a perfect square. Find this perfect square and its root. **[3]**

c. show that: $\frac{x^{m+n}Xx^{n+l}Xx^{l+m}}{\left(x^mXx^nXx^l\right)^2}$ = 1 **[4]**

Question 2

a. Find the cube root of **:** $6\frac{139}{343}$ **[3]**

b. Let A is the set of latters in the word, 'green'. Find i. A ii. n(A) iii. Number of proper subsets. **[3]**

c. Let A = { 2,4,6}, B = {1,2,3,5} and U = {1,2,3,4,5,6,7,8}.
Verify that (AUB)' = (A'∩ B') **[4]**

Question 3

a. In an intra-state transaction, goods worth Rs.20,000 are bought at 40% discount . If GST rate is 28%, find the amount bill. **[3]**

b. Find the simple interest and amount on Rs. 4500 for the 2½ years and at rate 7½% per annum **[3]**

c. Find the amount and compound interest on Rs. 5000 at 6%per annum, for 3 years, compounded annually. **[4]**

Question 4

a. Multiply**: (**$4x^2 + xy + 9y^2$) by $(2x – 3y)$. **[3]**

b. Factorize: $4x^2 + 12x + 9$. **[3]**

c. Subtract the sum of $4x^2 + 7xy + 3y^2 + 1$ and $2x^2 – 5xy – 2y^2 + 8$ from $9x^2 – 8xy + 11y^2$. **[4]**

Question 5

a. $(3x + 2y)^2 – (2x – 3y)^2$ **[3]**

b. **Divide** : $(x^3 – 9x^2 + 26x – 24)$ by $(x – 4)$ **[3]**

c. Group of 180 people were asked to mention their favourite TV program . The finding are listed below . Represent the same by pie chart. **[4]**

TV program	Sports	Cartoon	News	Serials	others
NO. of persons	54	36	27	45	18

Question 6

a. Find the amount of Rs, 25000 after 2 years , compounded annually , the rate of interest being 8% per annum during the first year and 9% per annum during the second year. Also find the compound interest. **[3]**

b. Find the smallest number by which 26364 must be multiplied so that number become a perfect cube **[3]**

c. Find the least number that to be added to 7348 to obtain a perfect square. Find the perfect square and its square root. **[4]**

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