Maheshwari Public School, Ajmer

Pre -Mid ; SESSION: 2018-2019

Class: lX; Subject: Mathematics

Time Allowed: 45 Min **Maximum Marks: 20**

General instructions

All questions are compulsory. Marks are indicated against each question.

Q.1 Find the rationalizing factor for the denominator of expression $\frac{1}{3\sqrt{5}-4}$. (1)

Q.2 Find the value of $\frac{2^0+7^0}{5^0}$. (1)

Q.3 Simplify $(3+\sqrt{3})(3-\sqrt{3})$. (1)

Q.4 Find the coefficient of a^3 in the expansion of $(2a-5)^3$. (1)

Q.5 What is the remainder, when x^3-2x^2+x+1 is divided by $(x-1)$. (1)

Q.6 Represent geometrically $\sqrt{5.6}$ on the number line. (2)

Q.7 If a, b, c are all non-zero and a+b+c =0, (2)
Prove that $\frac{a^2}{bc}+\frac{b^2}{ca}+\frac{c^2}{ab}=3$.
OR
Find the value of x^2+y^2 if x+y=-14 & xy=84.

Q.8 If $x+\frac{1}{x}=4$,then find the value of $x^2+\frac{1}{x^2}$ (2)

Q.9 Find the values of 'a' and 'b': $\frac{7+\sqrt{5}}{7-\sqrt{5}} - \frac{7-\sqrt{5}}{7+\sqrt{5}} = a+\frac{7\sqrt{5}}{11}b$. (3)

Q.10 Factorise : $x^3+13x^2+32x+20$. (3)

Q.11 If a+b+c =5 and ab + bc + ca = 10. (3)
Then prove that $a^3+b^3+c^3-3abc=-25$.
OR
Without actual division,
Prove that $2x^4-5x^3+2x^2-x+2$ is exactly divisible by (x^2-3x+2).