

KENDRIYA VIDYALAYA GACHIBOWLI, HYDERABAD
MODEL PAPER 01 FOR FA – 1 (2016 – 17)
CLASS – IX
MATHEMATICS

T.T. 1:30

M.M. 40

General Instructions:

1. All questions are compulsory.
2. Question paper is divided into four sections: Section A contains 4 questions each carry 1 mark, Section B contains 4 questions each carry 2 marks, Section C contains 4 questions each carry 3 marks and Section D contains 4 questions each carry 4 marks.

SECTION – A

1. Rationalize the denominator : $\frac{1}{\sqrt{3}-\sqrt{2}}$
2. Find the remainder when $x^3 + 3x^2 + 3x + 1$ is divided by x .
3. Find a zero of the polynomial $p(x) = 2x + 1$.
4. Simplify: $(125)^{\frac{1}{3}}$

SECTION – B

5. Rationalize the denominator of $\frac{3-\sqrt{2}}{3+\sqrt{2}}$.
6. Find five rational numbers between $\frac{3}{5}$ and $\frac{4}{5}$
7. If k is the number of honest persons so that $x + 6$ is a factor of $x^3 + 3x^2 + 4x + k$. Find k . Do you prefer the value shown here and why?
8. If the number of apples distributed to poor children are the zeroes of the polynomial $(x - 1)(x - 2)$, find its zeroes. Which value depicted from this?

SECTION – C

9. Show that $1.272727\dots\dots$ can be expressed in the form of $\frac{p}{q}$, where p and q are integers and $q \neq 0$.
10. If the work of Cancer Aid Society is represented by $p(x) = x^3 - 3x^2 - 9x - 5$ then factorize $p(x)$. Which values depicted from this?
11. If a point C lies between two points A and B such that $AC = BC$, then prove that $AC = \frac{1}{2}AB$. Explain by drawing the figure.
12. Find the value of each of the following polynomials at the indicated value of variables:
 - (i) $p(x) = 5x^2 - 3x + 7$ at $x = 1$.
 - (ii) $q(y) = 3y^3 - 4y + \sqrt{11}$ at $y = 2$.

SECTION – D

13. Simplify the following expressions:

$$(i) 2^{\frac{2}{3}} \cdot 2^{\frac{1}{5}} \quad (ii) \left(\frac{1}{3^3}\right)^7 \quad (iii) \frac{11^{\frac{1}{2}}}{11^{\frac{1}{4}}} \quad (iv) 7^{\frac{1}{2}} \cdot 8^{\frac{1}{2}}$$

14. A School has decided to give 2 prizes for punctuality, 3 prizes for honesty and 5 prizes for obedience. Represent the real number $\sqrt{2}, \sqrt{3}, \sqrt{5}$ on a single number line. Which value you prefer to be rewarded most and why?

15. Write all five postulates of Euclid's. Explain with diagram.

16. Use the Factor Theorem to determine whether $g(x)$ is a factor of $p(x)$ in each of the following cases:

(i) $p(x) = 2x^3 + x^2 - 2x - 1, g(x) = x + 1$

(ii) $p(x) = x^3 + 3x^2 + 3x + 1, g(x) = x + 2$

.....