Md. Yasir
X

Air Force Sr. Sec. School

Maths

Class X

Time : 3hr SA1 2017-18 M.M.- 80

General Instructions

(i)This question paper contain 30 questions

(ii) Each question of section A carry 1 mark.

(iii) Each question of section B carry 2 marks.

(iv) Each question of section C carry 3 marks.

(v) Each question of section D carry 4 marks.

Section A

Q.1.State the Euclid's division algorithm .

Q.2.How many zeroes can the polynomial $2x^2 - 3x + 4$ have?

Q.3. The graph of $x = 1$ is a line parallel to the which axis.

Q.4. Find the roots of the equation $2x^2 - 6x = 0$.

Q.5. For the AP : a , 5, 13 ,21 , 29 , ...write the value of a .

Q.6. If E be an event such that P (E) = $\frac{3}{5}$ find P (not E).

Section B

Q.7. Check whether 6^n can end with the digit 0 for any natural number n.

Q.8. Find the zeroes of the quadratic polynomial $3x^2 - x - 4$, and verify the relationship between zeroes and the coefficients.

Q.9. solve $2x + 3y = 11$ and $2x - 4y = -24$ and hence find the value of m for which $y = mx + 3$.

Q.10. find two numbers whose sum is 27 and product is 182.

Q.11. How many two -digit numbers are divisible by 3?

Q.12. The mean of the following data is 21.5 find the value of k.

X	5	15	25	35	45
y	6	4	3	k	2

Section C

Q.13. Prove that $\sqrt{5}$ is irrational .

Q.14. Explain why 7 x 6 x 5 x4 x 3 x 2 x 1 + 5 is composite numbers.

Q.15. If α and β be two zeroes of the quadratic polynomial $6y^2 - 7y + 2$ then evaluate $\frac{1}{\alpha} + \frac{1}{\beta}$

Q.16. If the zeroes of the polynomial $x^3 - 3x^2 + x + 1$ are $a - b$, a , $a + b$ find a and b.

Q.17. From the pair of linear equations and solve by substitution method , five year hence, the age of Jacob will be three times that of his son. Five years ago , Jacob's age was seven times that of his son what are their present age?

Q.18. $4x^2 + 4\sqrt{3}x + 3 = 0$, find the roots by the method of completing the square.

Q.19.Find the roots $\frac{1}{x+4} - \frac{1}{x-7} = \frac{11}{30}$, $(x \neq -4, 7)$

Q.20. Determine the sum of the first 35 terms of an AP if its second term is 2 and seventeen term is 22.

Q.21. Find the mode of the data

Marks	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50
Number of students	3	12	32	20	6

Q.22. Find the probability that Leap Year selected at random, will have 53 Sundays.

Section D

Q.23. Use Euclid's division lemma to show that the cube of any positive integer is of the form 9m , 9m +1 , 9m + 8 .

Q.24. On dividing $x^3 - 3x^2 + x + 2$ by a polynomial g (x), the Quotient and remainder were x – 2 and – 2x + 4 respectively find g (x).

Q.25. If 1 is a Zero of $x^3 - 3x^2 - x + 3$ then find all other zeroes.

Q. 26. The sum of the digit of a two digit number is 9. Also, Nine times this number is twice the number obtained by reversing the order of the digit. Find the number.

Q.27. Roohi travels 300km to her home partly by train and bus. She takes 4 hours if she travels 60km by train and the remaining by bus . If she travel 100km by train and the remaining by bus, she takes 10 min longer. Find the speed of the train and bus separately .

Q.28. A manufacturer of TV sets Produced 600 sets in the third year and 700 sets in the seventh year . assuming that the production increases uniformly by a fixed number of years find.

(i) The Production in the first year.

(ii) The total production in first 7 Years

Q.29. The height of 50 plants were recorded as below

Height in cm	135 - 140	140 - 145	145 - 150	150 - 155	155 - 160	160 - 165
No. of plants	4	7	18	11	6	4

Draw 'less than' ogive 'more than' ogive simultaneously on a graph and find the median of the data from the graph.

Q.30. All the three face cards of spades are removed from a well shuffled pack of 52 cards. A card is then drawn at random from the remaining pack. Find the probability of getting

(a) a black face card

(b) a queen

(c) a black card

(d) a jack of red card