VIVEK TUTORIALS

IX (English)

(Final Examination)

Mathematics Part - 1-(4 to7)

DATE: 16-03-19

TIME: 2 hour

MARKS: 40

SEAT NO:

Q.1 A) Solve the following questions. (Any four) (4)

1) Fill in the blanks.

$\dfrac{15}{100}$ = _____ percent = _____%

2) Simplify- $7^8 \div 7^3$

3) Use the formula to expand: $(3b - 6 + m)^2$

4) Use the formula to expand : $(7m + 4n)^3$

5) Classify the following expressions as monomials, binomials or trinomials. $13 - 8y^3$

6) Find the values- 14^3

B) Solve the following questions. (Any two) (4)

1) y varies in inverse proportion to x. When x = 12, y = 15, find the proportionality constant and write the equation for this variation.

2) The denominator of a fraction is greater than the numerator by 5. If 2 is added to both the numerator and the denominator, the value of the

fraction so obtained is $\dfrac{1}{2}$. Find the original fraction.

3) Factorise: $(2x - 3)^3 + 125$

Q.2 A) Choose the correct alternative. (4)

1) Ajay is younger than Vijay by 5 years. Sum of their ages is 25 years. What is Ajay's age ?
(A) 20   (B) 15   (C) 10   (D) 5

2) Which of the following data is not primary?
a. By visiting a certain class, gathering information about attendance of students.
b. By actual visit to homes, to find number of family members.
c. To get information regarding plantation of soya bean done by each farmer from the village Talathi.
d. Review the cleanliness status of canals by actually visiting them.

3) The mean of five numbers is 50 out of which the mean of 4 number is 46, find the 5th number :
a. 44   b. 20   c. 434   d. 66

4) A person has earned his income during the financial year 2017-18. Then his assessment year is ....
a. 2016 - 17   b. 2018 - 19   c. 2017 - 18   d. 2015 - 16

B) Solve the following questions. (Any two) (4)

1) Write down the following percentage in the simplest form of the ratio : 60 %

2) Write the ratio of first quantity to second quantity in the reduced form.
   1.5 kg, 2500 gm

3) Check whether the following numbers are in continued proportion.
   2, 4, 8

Q.3 A) Complete the following Activities. (Any two) (4)

1) Find the following ratios.
   The ratio of circumference of circle with radius r to its area.

   $$\underline{\quad\quad} = \frac{2}{r} = \underline{\quad\quad}$$

2) $(x + 3) : (x + 11) = (x - 2) : (x + 1)$ then find the value of x.

   $\therefore \quad \dfrac{x + 3}{x + 11} = \dfrac{x - 2}{x + 1}$

   $\therefore \quad (x+3) \underline{\quad\quad} = \underline{\quad\quad} (x+11)$

   $\therefore \quad x^2 + 4x + 3 = x^2 + 9x - 22$

   $\therefore \quad \underline{\quad\quad} = 9x - 22$

   $\therefore \quad 5x = \underline{\quad\quad}$

   $\therefore \quad x = \underline{\quad\quad}$

3) In a basket there are 10 tomatoes. The weight of each of these tomatoes in grams is as follows :
   60, 70, 90, 95, 50, 65, 70, 80, 85, 95.
   Find the median of the weight of tomatoes.
   Write the given data in the ascending order.
   50, 60, 65, 70, 70, 80, 85, 90, 95, 95
   n = _____ (Even number)
   ∴ median is the average of the middle two numbers.
   ∴ median is average of 70 and 80.

   $\therefore$ median = $\underline{\quad\quad}$ = $\dfrac{150}{2}$ = $\underline{\quad\quad}$

   Ans. : The median weight of tomatoes is _____

B) Solve the following questions. (Any two) (4)

1) The ratio of two numbers is 5 : 7. If 40 is added in each number, then the ratio becomes 25 : 31, Find the numbers.

2) Find the ratio of the first quantity with the second in its simplest form.
   3 min. 54 sec., 2 min. 6 sec.

3) Solve x + y = 14 and x - y = 2

Q.4 Solve the following questions. (Any three) (9)

3) Solve the following sets of simultaneous equations 2x+ y = 5 : 3x - y = 5

1) Solve the following equations : $\dfrac{x^2+12x-20}{3x-5} = \dfrac{x^2+8x+12}{2x+3}$

2) $\dfrac{x}{3} = \dfrac{y}{5} = \dfrac{z}{4} = \dfrac{5x - 3y + 4z}{\text{..............}}$

4) If $\dfrac{15a^2+4b^2}{15a^2-4b^2}=\dfrac{47}{7}$ then find the values of the following ratios : $\dfrac{a}{b}$

Q.5   Solve the following questions. (Any one)   (4)

1) If a, b, c, d and in proportion, then prove that.

$$\dfrac{11a^2+9ac}{11b^2+9bd}=\dfrac{a^2+3ac}{b^2+3bd}$$

2) Mr. Ahmed, a 62 year old senior citizen is employed in a private company. His total annual income is Rs.6,20,000. He has contributed Rs. 1,00,000 to the Public Provident Fund and paid a premium of Rs. 80,000 for the year for health insurance and a donation of Rs. 10,000 to CM's Relief Fund. What is tax payable ?

Q.6   Solve the following questions. (Any one)   (3)

1) The measures of the angles of the quadrilateral ABCD are in the ratio 2 : 3 : 4 : 1 Determine the type of the quadrilateral.

2) Solve: $\dfrac{12x^2+18x+42}{18x^2+12x+58}=\dfrac{2x+3}{3x+2}$