Half Yearly Examination 2016-2017

Std. : VII **Full Marks : 80**

Subject : MATHS **Time : 2 Hrs.+15mins.**

SECTION A

I. Fill in the blanks :— **[10]**

1. $(5p - 4)^2$ = _____
2. If a person can complete a work in 18 days how much he will do in 6 days.
3. $(a - 1)(a + 1)(a^2 + 1)$ = _____
4. Find the value of $(\frac{2}{5})^{-2}$
5. $(3x - \text{——})^2 + 9x^2 - 12xy + 4y^2$
6. If 11 is subtracted from a number it becomes 45. Find the number.
7. $100 \times 10^2 = 10^x$ find the value of x
8. $2x^2yz \times 8xy^2z^2 \times \frac{-1}{95} \frac{x^2z}{y5}$ = _____
9. By what number must a given number be multiplied to increase it by 8%.
10. One side of a square is $12x - 5y$ then its perimeter is _____

II. True or False : **[5]**

1. The value of $5^6 \times 5^3 \div 5^9$ is zero.
2. If a person can type 3000 words in an hour then he can type 750 words in 15 minutes.
3. $(x^2\ y^{-3})^2 = x^4y^9$
4. $(4x - ½y)(4x + ½y) = 16x^2 + \frac{1}{4} y^2$
5. $\sqrt{1.96} = 1.4$

III. Mental Maths. **[5]**

1. Subt : –10xy from 20xy.
2. $(0.2)^2 \div 0.02$ = _____
3. $3 - 0.09 - 0.91$ = _____
4. One fifth of a number increased by 7 is equal to 15. Find the number.
5. $(x-7)(x+2)$ = _____

SECTION B [2 marks each] [20]

1) $Q = \frac{1}{20} ab^2$ Find Formula for b.

2) Simplify $(\frac{5}{a} - \frac{7}{b})(\frac{5}{a} + \frac{7}{b})$

3) Solve the equation $\frac{2x + 3}{x + 3} = \frac{3}{2}$

4) Find the value of $P^2 - 4(p - 1)$ when $P = 2.5$

5) Simplify $(2^{-1} \div 5^{-1})^2 \times (\frac{-5}{8})^{-2}$

6) A number when reduced by 10% becomes 360. Find the number.

7) Find $\sqrt{61009}$

8) What must be added to $3a^2 - 2a+1$ to get $5a^2 + a - 2$.

9) A car goes 576 km in 8 hours. How much time will it take to go 792 km.

10) Multiply $(a^2 + a + 1)$ by $(a - 1)$

SECTION C

1) A student has to score 40% of maximum marks to pass. He gets 112 marks and fails by 8 marks. Find maximum marks. [3]

2) Divide $3x^3 + 8x^2 - 2x + 4$ by $(x + 3)$ [4]

3) Solve the equn. : $\frac{x - 1}{5} - \frac{x}{3} = 1 - \frac{x - 2}{2}$ [4]

4) The perimeter of a triangle is $20x^2 - 5x + 3$ Find III^d side of 2 of its sides are $-3x^2+8x-5$ and $5x^2 - 17x + 10$. [4]

5) If $x - \frac{1}{x} = 6$ find $x^2 + \frac{1}{x^2}$ and $x^4 + \frac{1}{x^4}$ [4]

6) Simplety $\frac{24.52 \times 24.52 - 16.24 \times 16.24}{24.52 - 16.24}$ [4]

7) The cost of 7 pens and 4 pencils is Rs. 186. If a pens costs Rs. 14 more than a pencil find the cost of each.[4]

SECTION D [13 MARKS]

1) Construct a right Δ PQR right angled at Q with PQ = 6cm and QR = 6.5 cm. [5]

2. Draw a line segment AB = 5 cm. Mark a point x out side AB. Draw a perpendicular from x to AB. [5]

3.) Find the value of x from the following figure. (write Reason)