RAMAGYA SCHOOL, NOIDA

VII/MATHS/2017-18

OLYMPIAD PRACTICE WORKSHEET

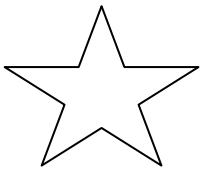
(Concept Based)

1. Which of the following alphabet has vertical line of symmetry?
   a. A b. B c. Q d. E

2. Which of the following alphabet has no line of symmetry?
   a. A b. B c. Q d. O

3. The circle has
   a. One line of symmetry
   b. Two lines of symmetry
   c. Three lines of symmetry
   d. Many lines of symmetry

4. The order of rotational symmetry for the given figure is
   a. 3 b. 4 c. 6 d. 12



(Application Based)

5. Express 0.0084 in scientific notation
   a. 84X 10^{-4} b. 8.4 X10^{-3} c. 0.84X10^{-2} d. None

6. The valve of $\sqrt{(1^3 + 2^3 + 4^3)}$=
   a. 5 b. 6 c. 8 d.12

7. The coefficient of x^2in $\frac{-3}{7}x^2yz$ is _____.
   a. $\frac{-3}{7}yz$ b. yz c. $\frac{-3}{7}$z d. $\frac{-3}{7}$y

8. Simplify 2a-$[3b - \{2a - (b - a)\}]$.
   a. 5a-4b b. -5a+4b c. 5a+4b d. -5a-4b

9. If $x^y = y^x, then\ (\frac{x}{y})^{\frac{x}{y}}$ is equal to
   a. $x^{\frac{x}{y}}$ b. $x^{\frac{x}{y}-1}$ c.$x^{\frac{x}{y}}$ d. $x^{\frac{y}{x}-1}$

10. Which of the following values are equal
    i. 1^4 ii 4^0 iii0^4 iv 4^1

    a. I and ii
    b. Ii and iii
    c. I and iii
    d. I and iv

(HOTS)

11. By what number should we multiply 4^{-3} so that the product may be equal to 64
    a. 4^5 b. 2^{12} c. 2^6 d. none

12. If $3^x = 500$ then the value of $3^{x-2}$is
    a. $\frac{100}{9}$b. $\frac{1000}{9}$c.$\frac{500}{3}$d. $\frac{500}{9}$

13. If $\frac{p}{q} = (\frac{2}{3})^3 \div (\frac{3}{2})^{-3}$ then the value of$(\frac{p}{q})^{-10}$=
    a. 1 b. 0 c. cannot be determined d. none

14. If $\sqrt{2}$ = 1.414 then the value of $\frac{5+\sqrt{2}}{5-\sqrt{2}}$ is
    a. 1.787 b. 1.525 c. 1.828 d. 1.326

15. The rationalizing factor of $a^2 + ab + b^2$ is
    a. a+b b. a-b c. $a^2 + b^2$ d. $a^2 - b^2$

16. The value of $(-2)^{(-2)^{(-3)}}$is =
    a. 64 b. 32 c. cannot be determined d. none of these

17. The length of a rectangle is 5cm more than its breadth. If the perimeter of the rectangle is 38cm, find its area.
    a. $28cm^2$ b. $12cm^2$ c. $36cm^2$ d. none

18. The value of $\left[\left((\frac{1}{4})^2\right) - \left((\frac{1}{2})^3\right)\right]$ X 2^6
    a. 1 b. 2 c. 3 d. 4

19. The sum of the powers of the prime factors in 108 X 192 is
    a. 5 b. 7 c. 8 d. 12

20. By what number should $(-25)^{-1}$be divided so that the quotient may be 5^{-1}
    a. $\frac{-1}{5}$ b. $\frac{1}{5}$ c.$\frac{1}{25}$ $d.\frac{-1}{25}$