



**ST. ALPHONSA'S HIGH SCHOOL – TECHNO SECTION**

**VIII CLASS**

**On Line Assignment (Ch-1,3,4,5,6)**

**Mathematics**

**Conceptual Objectives**

1. Which of the following integers has most number of divisors? ( ).  
A. 176      B. 182      C. 99      D. 101
2. In a division sum, the divisor is 12 times the quotient and 5 times the remainder. If the remainder is 48, then what is the dividend? ( ).  
A. 240      B. 576      C. 4800      D. 4848
3. Which of the following is a prime number? ( ).  
A. 889      B. 997      C. 899      D. 1147
4. The number of natural numbers divisible by 5 between 1 and 1000 is \_\_\_\_\_.  
A. 197      B. 199      C. 198      D. 200 ( ).
5. Which of the following numbers is exactly divisible by 99? ( ).  
A. 114345      B. 135792      C. 3572404      D. 913464
6. Find the least number which when divided by 6,7,8,9 and 12 leaves the remainder '1' in each case. ( ).  
A. 550      B. 505      C. 500      D. None
7. "Product of any three numbers is not equal to the product of their L.CM and G.C.D". Is this statement true or false? (TRUE/FALSE).
8.  $25^{63} \times 63^{25}$  is an \_\_\_\_\_ number. (Even/Odd).
9. "Relative prime numbers need not be a prime numbers". Is this statement true or false? (TRUE/FALSE).
10. There is a remainder of 3 when a number is divided by 6. What will be the remainder if the square of the same number is divided by 6? ( ).  
A. 1      B. 0      C. 3      D. 2
11. Which of the following is a product of 17 and an interger? ( ).  
A. 171      B. 1712      C. 1724      D. 1734
12. The smallest number by which 3600 can be divided to make it a perfect cube?.  
A. 9      B. 50      C. 300      D. 450 ( ).

13. The least number having four digits which is a perfect square is \_\_\_\_\_. ( ).

- A. 1004      B. 1016      C. 1036      D. None

14. The largest four-digit number which is a perfect cube? ( ).

- A. 8000      B. 9261      C. 9999      D. None

15.  $\left[ \left( (625)^{\frac{-1}{2}} \right)^{\frac{-1}{4}} \right]^2 = \underline{\hspace{2cm}}$ . ( ).

- A. 4      B. 5      C. 2      D. 3

16.  $\left( 5 \left( 8^{\frac{1}{3}} + 27^{\frac{1}{3}} \right)^3 \right)^{\frac{1}{4}} = \underline{\hspace{2cm}}$ . ( ).

- A. 3      B. 6      C. 5      D. 4

17.  $(1^3 + 2^3 + 3^3 + 4^3)^{-3/2} = \underline{\hspace{2cm}}$ . ( ).

- A.  $10^{-3}$       B.  $10^{-2}$       C.  $10^{-4}$       D.  $10^{-1}$

18. If  $800 = 8 \times 10^8 \times x^{-3/2}$  then  $x = \underline{\hspace{2cm}}$ . ( ).

- A.  $10^2$       B.  $10^3$       C.  $10^4$       D.  $10^5$

19. If  $4^x - 4^{x-1} = 24$  then the value of  $(2x)^x$  is \_\_\_\_\_. ( ).

- A.  $5^{5/2}$       B.  $5^{1/3}$       C.  $4^{1/2}$       D.  $6^{1/2}$

20. If  $\sqrt{9^x} = \sqrt[3]{9^2}$  then the value of  $x$  is \_\_\_\_\_. ( ).

- A.  $\frac{2}{3}$       B.  $\frac{4}{3}$       C.  $\frac{1}{3}$       D.  $\frac{5}{3}$

21. If  $A \subset B$  and  $A \supset C$ , then  $A \cap B \cap C = \underline{\hspace{2cm}}$ .

22. If  $A = \{a, b, \{c, d\}, e, \{f\}\}$ , then  $\{a, b, e\} \in A$ . (True/False).

23. If  $A$  is a set of whole numbers and  $B$  is the set of natural numbers, then  $(B-A)$  is \_\_\_\_\_ set. (singleton/null)

24.  $(A \cup \phi^1)^1 = \underline{\hspace{2cm}}$ .

25. If  $A \cap \mu = \mu$  and  $B \cup \phi = \phi$ , then  $A \cup B = \underline{\hspace{2cm}}$ .

26. If  $A = \{\text{Whole numbers}\}$  and  $B = \{\text{Natural numbers}\}$  then  $A \Delta B = \underline{\hspace{2cm}}$ .

27. If  $n(A \times B) = 15$ , then the minimum possibility of  $n(B)$  is 3. (True/False).

28. If  $A - B = B - A$ , then  $A$  and  $B$  are \_\_\_\_\_ sets. (equal/equivalent).

29. If  $A$  and  $B$  are two non-empty sets, then  $n(A \times B)$  can be 17. (True/False).

30.  $[A - (B - A)] \cup [B - (A - B)] =$  \_\_\_\_\_.
31. If the length and width of a rectangular garden plot were each increased by 20%, then what would be the %increase in the area of the plot? ( ).  
 A. 20%      B. 24%      C. 36%      D. 44%
32. The sides of a rectangle are in the ratio  $\frac{1}{2} : \frac{1}{3} : \frac{1}{4}$ . If the perimeter is 52cm, then the length of the smallest side is \_\_\_\_\_. ( ).  
 A. 9cm.      B. 10cm      C. 11cm      D. 12cm.
33. A pond 100m in diameter is surrounded by a circular grass walk 2m wide. How many square meters of grass is there on the walk? ( ).  
 A.  $98\pi$       B.  $100\pi$       C.  $204\pi$       D.  $202\pi$
34. The length of a rectangle is increased by 60%. By what % would the width be decreased so as to maintain the same area? ( ).  
 A.  $37\frac{1}{2}\%$       B. 60%      C. 75%      D. 120%
35. A rectangular carpet has an area of  $60\text{m}^2$ . Its diagonal and longer side together equal 5 times the shorter side. The length of the carpet is \_\_\_\_\_. ( ).  
 A. 5m.      B. 12m.      C. 13m.      D. 14.5m
36. The opposite pairs of sides of a square are increased by 40% and 30% respectively. The area of the resulting rectangle exceeds the area of the square by \_\_\_\_ ( ).  
 A. 42%      B. 62%      C. 82%      D. 72%
37. The length of a rope by which cow must be tethered in order that it may be able to graze an area of 9856sq.mts is \_\_\_\_\_. ( ).  
 A. 56m      B. 64m      C. 88m      D. 168m.
38. A horse is placed for grazing inside a rectangular field of 70m by 52m and is tethered to one corner by a rope 21m long. On how much area can it graze? ( ).  
 A.  $386.5\text{m}^2$       B.  $325.5\text{m}^2$       C.  $346.5\text{m}^2$       D.  $246.5\text{m}^2$
39. How many squares are there in a 5inch by 5inch square grid, if the grid is made up of one inch by one inch squares? ( ).  
 A. 50      B. 150      C. 55      D. 25

40. The area of a Rhombus is 2016sqcm and its side is 65cm. The lengths of the diagonals respectively are\_\_\_\_\_ ( ).
- A. 125,35    B. 126, 32    C. 132, 26    D. 135, 25
41. If the radius of a circle is increased by 100%, then the area of the circle is increased by \_\_\_\_\_ ( ).
- A. 100%    B. 200%    C. 300%    D. 400%
42. If the perimeter of an isosceles right angled triangle is  $(6 + 3\sqrt{2})$  then the area of the triangle is \_\_\_\_\_ ( ).
- A.  $4.5m^2$     B.  $5.4m^2$     C.  $9m^2$     D.  $81m^2$
43. A triangle and a parallelogram are constructed on the same base such that their areas are equal. If the altitude of the parallelogram is 100m, then the altitude of the triangle is \_
- A. 100m    B. 200m    C.  $100\sqrt{2}$     D.  $10\sqrt{2}$
44. If  $\sqrt[4]{\sqrt[3]{x^2}} = x^k$  then k = \_\_\_\_\_.
45. Given that  $4^{n+1} = 256$  then n = \_\_\_\_\_.
46. Given that  $2^h \times 2^3 = 2^9$  then the value of h = \_\_\_\_\_.
47.  $\sqrt{x^{-1}y} \cdot \sqrt{y^{-1}z} \cdot \sqrt{z^{-1}x} =$  \_\_\_\_\_.
48.  $8^{4/3} \times 2^{-1} =$  \_\_\_\_\_.
49. If  $\sqrt{a} = 0.2$  then  $a^{3/2} =$  \_\_\_\_\_.
50. Which of the following has greater value? ( ).
- A.  $12^9$     B.  $10^{11}$     C.  $11^{10}$     D. All are same.

“WISH YOU A HAPPY HOLIDAYS”

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