VI Class
Multples and Factors
Teaching Task

1. The number itself = 13

2. a = the number it self = 7

3. Conceptual

4. 9 x 14 = 126

5. 1+6 = 7

    3+4 = 7   7 is prime number

    ∴ Option (D) correct

6. Conceptual

7. $\dfrac{1995}{19} = 105$

8. Conceptual

9. Conceptual

10. Write all factors of 192

    we will get option (D)

11. Conceptual

12. Conceptual

13. Conceptual

14. Conceptual

15. Conceptual

16. The number it self = 31

17. $11\underline{|143}$

    $\quad 13$

    Prime factors of 143 are 11 and 13 sum of prime factors = 11+13 = 24

18. a) 99 = 11 x 9

    11 is odd prime factor

    b) 100 = 2 x 50

    2 is even prime factor

    c) 6 is perfect number

    since sum of factors   = 6+3+2+1   = 12

                                        = 2(6)

    d) sum of factors   28   = 28+14+7+4+2+1

                              = 56   = 2(28)

    28 is double digit perfect number

Learner's Task

1. Conceptual option A - correct

2. Conceptual option C - correct

3. Conceptual option D- correct

4. Conceptual

5. Conceptual

6. Check Q.No : 18 in teaching task

7. Conceptual

8. 2 x 16 = 32

    4 x 8 = 32

    8 x 4 = 32

    But, 32 is not multiple of 6

9. Factors of 100 are = 100,50,25,,20,10,5,4,2,1

    sum of factors   = 100+50+25+20+10+5+4+2+1

    = 217

10. No of multiples of a number = infinite

    $\therefore$ Sum of multiples of 9 = infinite

    largest multiple doesn't exists.

JEE MAIN LEVEL

1. Check from options

    1533 = 73 x 11

2.
    $2\underline{|1024}$
    $2\underline{|512}$
    $2\underline{|256}$
    $2\underline{|128}$
    $2\underline{|64}$
    $2\underline{|32}$
    $2\underline{|16}$
    $2\underline{|8}$
    $2\underline{|4}$
    $2\underline{|2}$
    1

    $1024 = 2^{10} = a^P$

    $\therefore$ Number of factors = P+1

    = 10+1

    = 11

3. 100th multiple of 10 = 1000

    least factor of 10 = 1

    $\therefore$ 1000+1 = 1001

    Option (A) correct

4. Conceptual

5. Conceptual

6. Conceptual

7. Conceptual

8. x = ab, y = bc, z = ca

$$\frac{xyz}{abc} = \frac{ab.bc.ca}{abc} = abc$$

ab, bc, ca, a,b,c are fuctors of abc

9. $1 \times x = x$
Conceptual

10. Conceptual

11. Let Given number = n
multiples of n are n x 1 = n = a
$\qquad\qquad\qquad$ n x 2 = 2n = b
$\qquad\qquad\qquad$ n x 3 = 3n = c
$\qquad\qquad\qquad$ n x 4 = 4n = d
$\qquad\qquad\qquad$ n x 5 = 5n = e
given sum of multiples = 45
n + 2n + 3n + 4n + 5n = 45
$\qquad\qquad\qquad$ 15n = 45

$$n = \frac{45}{15} = 3$$

next multiple = n x 6 = 3 x 6 = 18

12. Conceptual

Advanced level questions

1. from options A, B we can check

2. from options
factors of 16 = 16, 8, 4, 2, 1
sum of factors = 31
factors of 28 = 28, 14,7,4,2,1
sum of factors = 56
factors of 18 = 18, 9, 6,3,2,1
sum of fators = 39 = multiple of 3
factors of 10 = 10, 5,2,1
sum of factors =18 = multiple of 3
$\therefore$ C, D are correct

3. from options A,B,C
check the relation b^2 = ad

4. Conceptual

5. Conceptual

6. from statement I, Let it be '16' not '6'
   factors of 12 = 12, 6,4,3,2,1
   sum of factors except 12 is '16'
   statement II is true
   then option A is correct

7. $18 = 3^2 \times 2^1$
   no. of factors = $(2+1)(1+1) = 3(2) = 6$

8. $180 = 5^1 \times 3^2 \times 2^2$
   no.of factors $=(1+1)(2+1)(2+1)$
   $= 2 . 3. 3. = 18$

9. Write the given numbers in the prime factorisation
   A) $16 = 2^4$
   no.of factors $4 +1 = 5$

   B) $68 = 17^1 \times 2^2$
   no.of factors $(1+1)(2+1)=2(3)=6$

   C)$102 = 17^1 \times 3^1 \times 2^1$
   no.of factors = $(1+1)(1+1)(1+1)=2\times 2\times 2=8$

   D)$127 = 127^1$
   no.of factors = 2
   option (c) correct answer

10. No.of factors of y = 3+1 =4

11. $x = a^2 \times b^p$
    no.of factors = 24
    $\therefore (2+1)(p+1) = 24$

    $p+1 = \dfrac{24}{3} = 8$

    p=8-1 = 7

12. Conceptual