

Name of the Student:

Roll No:

Department:

Class:

EMPLOYABILITY TEST 4

I. Choose the correct alternative:

1. The H.C.F. of two numbers is 23 and the other two factors of their L.C.M. are 13 and 14. The larger of the two numbers is: []

- a. 276 b. 299 c. 322 d. 345

2. Let N be the greatest number that will divide 1305, 4665 and 6905, leaving the same remainder in each case. Then sum of the digits in N is: []

- a. 4 b. 5 c. 6 d. 8

3. The product of two numbers is 4107. If the H.C.F. of these numbers is 37, then the greater number is: []

- a. 101 b. 107 c. 111 d. 185

4. Three number are in the ratio of 3 : 4 : 5 and their L.C.M. is 2400. Their H.C.F. is: []

- a. 40 b. 80 c. 120 d. 200

5. The G.C.D. of 1.08, 0.36 and 0.9 is: []

- a. 0.03 b. 0.9 c. 0.18 d. 0.108

6. The product of two numbers is 2028 and their H.C.F. is 13. The number of such pairs is: []

- a. 1 b. 2 c. 3 d. 4

7. The least multiple of 7, which leaves a remainder of 4, when divided by 6, 9, 15 and 18 is []

- a. 74 b. 94 c. 184 d. 364

8. The least number which when divided by 5, 6, 7 and 8 leaves a remainder 3, but when divided by 9 leaves no remainder, is: []

- a. 1677 b. 1683 c. 2523 d. 3363

9. The ratio of two numbers is 3 : 4 and their H.C.F. is 4. Their L.C.M. is: []

- a.** 12 **b.** 16 **c.** 24 **d.** 48

10. 252 can be expressed as a product of primes as: []

- a.** $2 \times 2 \times 3 \times 3 \times 7$ **b.** $2 \times 2 \times 2 \times 3 \times 7$ **c.** $3 \times 3 \times 3 \times 3 \times 7$ **d.** $2 \times 3 \times 3 \times 3 \times 7$

11. The reflex angle between the hands of a clock at 10.25 is: []

- a.** 180° **b.** $192^\circ 67'$ **c.** 195° **d.** $197^\circ \frac{1}{2}$

12. A clock is started at noon. By 10 minutes past 5, the hour hand has turned through: []

- a.** 145° **b.** 150° **c.** 155° **d.** 160°

13. The angle between the minute hand and the hour hand of a clock when the time is 4.20, is: []

- a.** 0° **b.** 10° **c.** 5° **d.** 20°

14. At what angle the hands of a clock are inclined at 15 minutes past 5? []

- a.** $58^\circ \frac{1}{2}$ **b.** 64° **c.** $67^\circ \frac{1}{2}$ **d.** $72^\circ \frac{1}{2}$

15. At 3:40, the hour hand and the minute hand of a clock form an angle of: []

- a.** 120° **b.** 125° **c.** 130° **d.** 135°

II. True or False

16. H.C.F. = H.C.F. of Numerators/L.C.M. of Denominators []

17. L.C.M = L.C.M. of Numerators/H.C.F. of Denominators []

18. Two numbers are said to be co-primes if their H.C.F. is 1. []

19. Angle traced by hour hand in 12 hrs = 160° []

20. Angle traced by minute hand in 60 min. = 360° . []

ET4_Evaluators

1. Explanation:

Clearly, the numbers are (23×13) and (23×14) .

∴ Larger number = $(23 \times 14) = 322$.

2. Explanation:

$N = \text{H.C.F. of } (4665 - 1305), (6905 - 4665) \text{ and } (6905 - 1305)$

= H.C.F. of 3360, 2240 and 5600 = 1120.

Sum of digits in $N = (1 + 1 + 2 + 0) = 4$

3. Explanation:

Let the numbers be $37a$ and $37b$.

Then, $37a \times 37b = 4107$

$\Rightarrow ab = 3$.

Now, co-primes with product 3 are (1, 3).

So, the required numbers are $(37 \times 1, 37 \times 3)$ i.e., (37, 111).

∴ Greater number = 111.

4. Explanation:

Let the numbers be $3x, 4x$ and $5x$.

Then, their L.C.M. = $60x$.

So, $60x = 2400$ or $x = 40$.

∴ The numbers are $(3 \times 40), (4 \times 40)$ and (5×40) .

Hence, required H.C.F. = 40.

5. Explanation:

Given numbers are 1.08, 0.36 and 0.90. H.C.F. of 108, 36 and 90 is 18,

H.C.F. of given numbers = 0.18.

6. Explanation:

Let the numbers $13a$ and $13b$.

Then, $13a \times 13b = 2028$

$ab = 12$.

Now, the co-primes with product 12 are (1, 12) and (3, 4).

[Note: Two integers a and b are said to be co prime or relatively prime if they have no common positive factor other than 1 or, equivalently, if their greatest common divisor is 1]

So, the required numbers are $(13 \times 1, 13 \times 12)$ and $(13 \times 3, 13 \times 4)$.

Clearly, there are 2 such pairs.

7. Explanation:

L.C.M. of 6, 9, 15 and 18 is 90.

Let required number be $90k + 4$, which is multiple of 7.

Least value of k for which $(90k + 4)$ is divisible by 7 is $k = 4$.

∴ Required number = $(90 \times 4) + 4 = 364$.

8. Explanation:

L.C.M. of 5, 6, 7, 8 = 840.

∴ Required number is of the form $840k + 3$

Least value of k for which $(840k + 3)$ is divisible by 9 is $k = 2$.

∴ Required number = $(840 \times 2 + 3) = 1683$.

9. Explanation:

Let the numbers be $3x$ and $4x$. Then, their H.C.F. = x . So, $x = 4$.

So, the numbers 12 and 16.

L.C.M. of 12 and 16 = 48.

10. Explanation:

Clearly, $252 = 2 \times 2 \times 3 \times 3 \times 7$.

11. Explanation:

Angle traced by hour hand in $\frac{125}{12}$ hrs = $\left(\frac{360}{12} \times \frac{125}{12}\right)^\circ = 312\frac{1}{2}^\circ$.

Angle traced by minute hand in 25 min = $\left(\frac{360}{60} \times 25\right)^\circ = 150^\circ$.

∴ Reflex angle = $360^\circ - \left(312\frac{1}{2} - 150\right)^\circ = 360^\circ - 162\frac{1}{2} = 197\frac{1}{2}^\circ$.

12. Explanation:

Angle traced by hour hand in 12 hrs = 360° .

Angle traced by hour hand in 5 hrs 10 min. i.e., $\frac{31}{6}$ hrs = $\left(\frac{360}{12} \times \frac{31}{6}\right)^\circ = 155^\circ$.

13. Explanation:

Angle traced by hour hand in $\frac{13}{3}$ hrs = $\left(\frac{360}{12} \times \frac{13}{3}\right)^\circ = 130^\circ$.

Angle traced by min. hand in 20 min. = $\left(\frac{360}{60} \times 20\right)^\circ = 120^\circ$.

∴ Required angle = $(130 - 120)^\circ = 10^\circ$.

14. Explanation:

Angle traced by hour hand in $\frac{21}{4}$ hrs = $\left(\frac{360}{12} \times \frac{21}{4}\right)^\circ = 157\frac{1}{2}^\circ$

Angle traced by min. hand in 15 min. = $\left(\frac{360}{60} \times 15\right)^\circ = 90^\circ$.

∴ Required angle = $\left(157\frac{1}{2}\right)^\circ - 90^\circ = 67\frac{1}{2}^\circ$

15. Explanation:

Angle traced by hour hand in 12 hrs. = 360° .

Angle traced by it in $\frac{11}{3}$ hrs = $\left(\frac{360}{12} \times \frac{11}{3}\right)^\circ = 110^\circ$.

Angle traced by minute hand in 60 min. = 360° .

Angle traced by it in 40 min. = $\left(\frac{360}{60} \times 40\right)^\circ = 240^\circ$.

Required angle $(240 - 110)^\circ = 130^\circ$.

16. T 17. T 18. T 19. F 20. T