NMOT TEST PAPER_22-12-2017
PRIMARY GROUP_IV & V
ANSWER-KEY & SOLUTIONS

Ques	1	2	3	4	5	6	7	8	9	10
Ans.	C	C	C	C	C	A	C	B	C	D
Ques	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
Ans.	D	B	C	D	C	6	3	2	6	1

1. Clock strikes at 1 o'clock $\rightarrow$ one time
Clock strikes at 2 o'clock $\rightarrow$ two time
Clock strikes in 24 hours = $2\times\frac{12\times(12+1)}{2}=12\times13=156$

2. A is a square and its side is = 10 cm
B is a square and its side is = 5 cm
C is a square and its side is = 10 – 5 = 5 cm
So the area of figure is
Area = Area (square A) + Area (square B) + Area (square C)
$= 10^2 + 5^2 + 5^2 = 100 + 25 + 25 = 150\ cm^2$

3. Raju answer = (10 – 1) × 2 + 2 = 18 + 2 = 20
Vineet answer = (10 × 2) – 1 + 2 = 21
Bharat answer = 2[(10 – 1) + 2] = 22
$\therefore$ Bharat answer is largest one

4 40% of 120=48 mangoes are not ripe.

5. Cars are moving towards each other

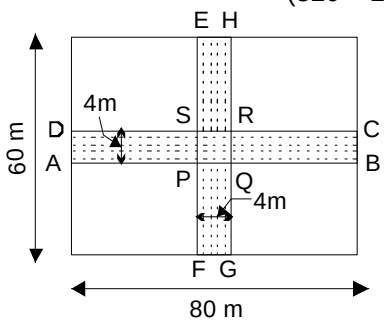
$\therefore$ time taken to meet each other

$= \frac{280}{30+40} = \frac{280}{70} = 4$ hrs.

$\therefore$ they will meel at 7 pm

6. Let ABCD and EFGH be the cross paths.

We have, AB = 80 m and BC = 4 m.
$\therefore$ Area of path ABCD = (80 × 4) m^2 = 320 m^2
Again, EF = 60 m and FG = 4 m
$\therefore$ Area of path EFGH = (60 × 4) m^2 = 240 m^2.
Clearly, area PQRS is common to both the paths.
We have, Area PQRS = (4 × 4) m^2 = 16 m^2.
$\therefore$ Total area used as path = Area of path ABCD + Area of path EFGH – Area PQRS
= (320 + 240 – 16) m^2 = 544 m^2



7. Total boxes = x

English books = $\frac{2}{3}x$

Remaining books = $x-\frac{2}{3}x=\frac{x}{3}$

Maths books = $\frac{3}{4}\text{of}\frac{x}{3}=\frac{3}{4}\times\frac{x}{3}=\frac{x}{4}$

Since books = $\frac{x}{3}-\frac{x}{4}=\frac{x}{12}$

$\frac{p}{q}$ of English books = Science books

$$\frac{p}{q}\times\frac{2x}{3}=\frac{x}{12}$$

$$\frac{p}{q}=\frac{x}{12}\times\frac{3}{2x}$$

$$\frac{p}{q}=\frac{1}{8}$$

By checking options :

(C) $\left[\frac{4}{3}\left\{\frac{1}{4}+\frac{1}{2}\right\}-\frac{1}{2}\right]\left[\frac{3}{4}-\frac{5}{4}\left\{\frac{1}{7}\times\frac{14}{5}\right\}\right]$

$=\left[\frac{4}{3}\left\{\frac{1+2}{4}\right\}-\frac{1}{2}\right]\left[\frac{3}{4}-\frac{5}{4}\times\frac{2}{5}\right]=\left[\frac{4}{3}\times\frac{3}{4}-\frac{1}{2}\right]\left[\frac{3}{4}-\frac{1}{2}\right]=\left[1-\frac{1}{2}\right]\left[\frac{3-2}{4}\right]=\frac{1}{2}\times\frac{1}{4}=\frac{1}{8}$

So option (C) is correct

8. Total sugar = 24 kg
Suppose the 1st type of containers are of x kg
Therefore sugar filled in such 24 containers = 24 x kg

Then 2nd type of containers size = $\frac{x}{2}$kg

Therefore sugar filled in such 22 contains size = 11x kg and 3rd type of containers size = $\frac{x}{4}$kg

Therefore sugar filled in such 52 contains = $52\times\frac{x}{4}=13x\,\text{kg}$

Now

$$24x + 11x + 13x = 24$$
$$48x = 24$$
$$x=\frac{24}{48}=\frac{1}{2}\text{kg}=500\,\text{g}$$

1st container size = 500g

2nd container size = $\frac{500}{2}=250\text{g}$

3rd container size = $\frac{500}{4}=125\text{g}$

Sugar in first type of containers = 500 × 24 = 12000 gm = 12 kg
Sugar in second type of containers = 250 × 22 = 5500 gm = 5.5 kg
Sugar in third type of containers = 125 × 52 = 6500 gm = 6.5 kg
Answer the correct answer is 12 kg, 5.5 kg, 6.5 kg.

11. $x + (x + 36) + y = 100 \Leftrightarrow 2x + y = 64$.

$\therefore$ y must be even prime, which is 2.

$\therefore$ $2x + 2 = 64 \Rightarrow x = 31$.

Third prime number = (x + 36) = (31 + 36) = 67.

13.

N	Factors (not including N)	Sum of factors (not including N)	Abundant
1	0	0	No
2	1	1	No
3	1	1	''
4	1, 2	3	''
5	1	1	''
6	1, 2, 3	6	''
7	1	1	''
8	1, 2, 4	7	''
9	1, 3	4	''
10	1, 2, 5	8	''
11	1	1	''
12	1, 2, 3, 4, 6	16	Yes

14. The possible routes are AFEDC, AGBC, AGHBC, AGEHC, AFEHC, AGHC, AFEHBC, AGEHBC, AGEDC, ABC and, AFEHB, AGEHB, AGHB, AGB, AB.

15. For the largest value Q should be a maximum possibility and P should be a minimum possibility.

So, $\frac{Q}{P} = \frac{800}{400} = 2$.

16. 06

Prime factors of $756 = 2^2 \times 3^3 \times 7$

Multiples of 27 which are factors of 756 are

2	756
2	378
3	189
3	63
3	21
7	7
	1

$= 3^3 \times 1$
$= 3^3 \times 2$
$= 3^3 \times 2^2$
$= 3^3 \times 7$
$= 3^3 \times 2 \times 7$
$= 3^3 \times 2^2 \times 7$

No of multiples of 27 = 6

17. Let the angle be x.

Complementary angle of $x = 90^\circ - x$

Supplementary angle of $x = 180^\circ - x$

Given :

=

$5(90^\circ - x) = 2(180^\circ - x)$

$450^\circ - 5x = 360^\circ - 2x$

$-3x = -90^\circ$

$3x = 90^\circ$

$x = 30^\circ$.

x/10=3

18. 2

19. 6

20. 211 is a prime number. So there is only one pair of distinct numbers possible whose LCM is 211, i.e. 1 and 211. HCF of 1 and 211 is 1.