

# CLAT 2019

## TEST SERIES PLAN

BY NLU & NUJS TOPPERS

**35**  
FULL LENGTH  
TESTS

**₹999**

**JOIN NOW**

by

# TestZone

INDIA'S LEAST PRICED TEST SERIES

- Brilliant Test Analysis
- Excellent Content
- Unmatched Explanations

**JOIN NOW**

## Maths Questions for CLAT Exam.

### CLAT Maths Quiz 3

Directions: Kindly study the following Questions carefully and choose the right answer:

1. Out of two numbers, 4 times the smaller one is less than 3 times the larger one by 5, If the sum of the numbers is larger than 6 times their difference by 6, find the two numbers.

A. 55 and 58

B. 23 and 28

C. 59 and 43

D. 65 and 67

2. Acid and water are mixed in a vessel A in the ratio of 5 : 2 and in the vessel B in the ratio 8 : 5. In what proportion should quantities be taken out from the two vessels so as to form a mixture in which acid and water will be in the ratio of 9 : 4?

A. 7 : 2

B. 2 : 7

C. 7 : 4

D. 2 : 3

3. Two trains, A and B start from the stations X and Y towards each other. They take 4 hours 48 mins and 3 hours 20 mins to reach Y and X respectively after they meet. If train A is moving at 45 km/hr, then the speed of train B is

A. 60 km/hr

B. 64.8 km/hr

C. 54 km/hr

D. 37.5 km/hr

4. A shopkeeper deals in milk and 45 litre mixture is to be distributed in Milk & Water in the ratio of 4 : 1. If 4 litre milk & 3 litre water will be added in the mixture then what will be the new ratio of water and milk?

A. 5 : 6

B. 3 : 10

C. 4 : 5

D. 7 : 8

5. There are 4 cotton kurties, 3 woolen kurties and 5 nylon kurties. If 3 kurties are selected at random, what is the probability that none of them are nylon kurties?

A.  $\frac{9}{3.2}$

B.  $\frac{11}{40}$

C.  $\frac{7}{44}$

D.  $\frac{12}{47}$

6. A single person takes 10 minutes to stitch a bag. If from 10.00 a.m. to 12.30 p.m., 1245 bags are to be stitched how many persons should be employed on this job?

A. 81

B. 82

C. 83

D. 84

7. Some students decided to go to a picnic. They expected the expenditure to be Rs 500. They added some more students along with them and the number of students who actually went to the picnic increased by 5 and the expenditure per head came down by five rupees. How many children finally went to the picnic?

A. 20

B. 15

C. 30

D. 25

8. Two equal circles of radius 4 cm intersect each other such that each passes through the centre of the other. The length of the common chord is :

- A.  $2\sqrt{3}$  cm                      B.  $4\sqrt{3}$  cm                      C.  $2\sqrt{2}$  cm                      D. 8 cm

9. The angle of elevation of the top of an unfinished pillar at a point 150 m from its base is  $30^\circ$ . If the angle of elevation at the same point is to be  $45^\circ$ , then the pillar has to be raised to a height of how many metres?

- A. 59.4 m                      B. 61.4 m                      C. 62.4 m                      D. 63.4 m

10. Speed of a boat in still water is 8 kmph and speed of stream is 1.5 kmph. A man rows to a place at a distance of 61.75 km and come back to starting point. The total time taken by him.

- A. 6 hrs                      B. 8 hrs                      C. 16 hrs                      D. 22 hrs

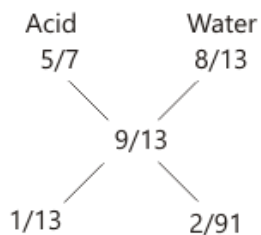
**Correct Answers:**

1	2	3	4	5	6	7	8	9	10
C	A	C	B	C	C	D	B	C	C

**Explanations:**

1. Let the number be  $x$  and  $y$ , such that  $x > y$ .  
 Then,  $3x - 4y = 5$  .....(1) and  $(x + y) - 6(x - y) = 6$   
 $\Rightarrow -5x + 7y = 6$  .....(2)  
 Solving (1) and (2), we get :  $x = 59$  and  $y = 43$ .  
 Hence, the required numbers are 59 and 43.  
 Hence, option C is correct.

2. By allegation method:



$\therefore$  Required ratio =  $\frac{1}{13} : \frac{2}{91} = 7 : 2$

Hence, option A is correct.

3. Let the speed of Train A be  $S_A = 45$  kmph and that of Train B be  $S_b$

Then, time taken by Train A =  $T_A = 4$  hrs 48 min =  $4 + \frac{48}{60} = \frac{24}{5}$  hrs

Time taken by Train B =  $T_B = 3$  hrs 20 min =  $3 + \frac{20}{60} = \frac{10}{3}$  hrs

Using formula  $\frac{S_A}{S_B} = \sqrt{\frac{T_B}{T_A}}$

**Note:** If two trains (or bodies) start at the same time from points A and B towards each other and after crossing they take a and b sec in reaching B and A respectively, then

(A's speed) : (B's speed) = ( $v_b$  :  $v_a$ ).

$$\therefore \frac{45}{S_B} = \sqrt{\frac{10}{3} \times \frac{5}{24}} = \sqrt{\frac{25}{36}} = \frac{5}{6}$$

$$\text{or, } S_B = \frac{45 \times 6}{5} = 54 \text{ kmph}$$

Hence, option C is correct.

4. In the mixture of 45 litre,

$$\text{Milk} = \frac{45}{5} \times 4 = 36 \text{ litre, Water} = \frac{45}{5} \times 1 = 9 \text{ litre}$$

$$\text{New ratio} = 9 + 3 : 36 + 4 = 12 : 40 = 3 : 10$$

Hence, option B is correct.

5. 3 kurties out of 12 kurties can be chosen in  ${}^{12}C_3$  ways

As given in the question above that we don't have to choose any nylon kurti

$\therefore$  we have to select 3 kurties out of the remaining 7 kurties.

This can be done in  ${}^7C_3$  ways

$$\therefore \text{Reqd. probability} = \frac{{}^7C_3}{{}^{12}C_3}$$

$$= \frac{7 \times 6 \times 5}{12 \times 11 \times 10} = \frac{7}{44}$$

Hence, option C is correct.

6. To solve this question, we can apply a short trick approach

$$M_1 D_1 W_2 = M_2 D_2 W_1$$

Given,

$$M_1 = 1, D_1 = 10 \text{ mins}, W_2 = 1245$$

$$M_2 = X, D_2 = 2\text{h} + 30 \text{ mins} = 150 \text{ mins}, W_1 = 1$$

By the short trick approach, we get

$$= 1 \times 10 \times 1245 = X \times 150 \times 1$$

$$x = \frac{1245 \times 10}{150} = 83 \text{ Persons}$$

Hence, option C is correct.

7. Let the no. of students initially be  $x$

$$\text{Per head expenditure} = \frac{500}{x}$$

Now,

$$\text{No. of student went to picnic} \Rightarrow x + 5$$

$$\text{New Per head expenditure} = \frac{500}{x + 5}$$

According to the question,

Per head expenditure is decreased by 5

$$\Rightarrow \frac{500}{x} - \frac{500}{x + 5} = 5$$

$$\Rightarrow x^2 + 5x - 500 = 0$$

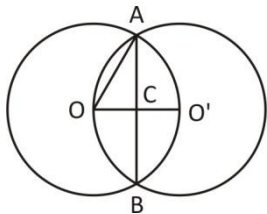
$$\Rightarrow x = 20, -25 \text{ (neglected as no. of students cannot be negative)}$$

$$x = 20$$

$$\text{Hence no. of children went to the picnic} = 20 + 5 = 25$$

Hence, option D is correct.

8.



Radius,  $OA = 4 \text{ cm}$

$$\therefore OC = 2 \text{ cm}$$

By Pythagoras theorem in  $\Delta AOC$ ,

$$\therefore AB = \sqrt{4^2 - 2^2} = \sqrt{12} = 2\sqrt{3} \text{ cm}$$

$$\therefore AB = 2\sqrt{3} + 2\sqrt{3} = 4\sqrt{3} \text{ cm}$$

Hence, option B is correct.

9.

Given,  $BC = 150 \text{ m}$

$$\angle ACB = 30^\circ$$

And,  $\angle DCB = 45^\circ$

Then,  $AD = ?$

$$\text{In } \triangle ABC, \tan 30^\circ = \frac{AB}{BC}$$

$$\frac{1}{\sqrt{3}} = \frac{AB}{150}$$

$$\therefore AB = \frac{150}{\sqrt{3}} = 86.6 \text{ m}$$

$$\text{In } \triangle DBC, \tan 45^\circ = \frac{DB}{BC}$$

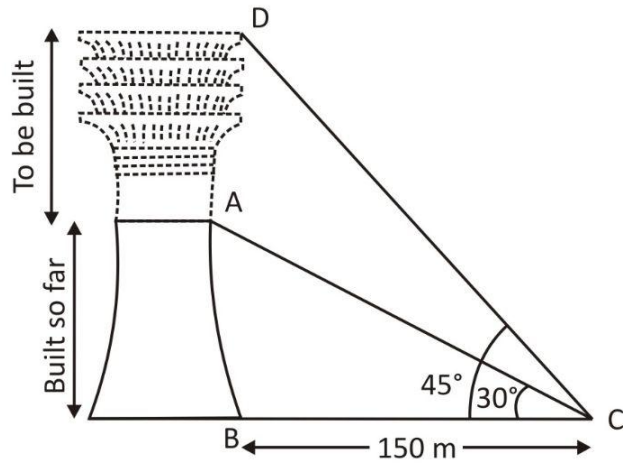
$$1 = \frac{DB}{150}$$

$$DB = 150$$

$$AD + AB = 150 \quad [\because DB = AD + AB]$$

$$\begin{aligned} \therefore AD &= 150 - AB \\ &= 150 - 86.6 = 63.4 \text{ m} \end{aligned}$$

Hence, option C is correct.



10. Rate upstream =  $8 - 1.5 = 6.5 \text{ kmph}$

Rate downstream =  $8 + 1.5 = 9.5 \text{ kmph}$

Time taken to go upstream =  $\frac{61.75}{6.5} = 9.5 \text{ hr.}$

Time taken to go downstream =  $\frac{61.75}{9.5} = 6.5 \text{ hr.}$

Total time =  $9.5 + 6.5 = 16 \text{ hrs.}$

Hence, option C is correct.

# CLAT 2019

## TEST SERIES PLAN

BY NLU & NUJS TOPPERS

**35**  
FULL LENGTH  
TESTS

**₹999**  
**JOIN NOW**

by

# TestZone

INDIA'S LEAST PRICED TEST SERIES

- Brilliant Test Analysis
- Excellent Content
- Unmatched Explanations

**JOIN NOW**