**Question 1: Problems on Train**

Option B

Explanation:

Speed = 54 \* 5/18 = 15 m/sec.

Length of the train = 15 \* 20 = 300 m.

Let the length of the platform be x m . Then,

(x + 300)/36 = 15 => x = 240 m.

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**Question 2: Races and Games**

Option A

Explanation:

A scores 60 while B score 40 and C scores 30.  
The number of points that C scores when B scores 100 = (100 \* 30)/40 = 25 \* 3 = 75.  
In a game of 100 points, B gives (100 - 75) = 25 points to C.

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**Question 3: Partnership**

Option D

Explanation:

Because I have changed the question from 1.4 lakhs to 1.5 lakhs for Sagar.

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**Question 4: Boats and Streams**

Option D

Explanation:

Let the distance between A and B be x km.

Total time = x/(9 + 1) + x/(9 - 1) = 4.5

=> x/10 + x/8 = 9/2 => (4x + 5x)/40 = 9/2 => x = 20 km.

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**Question 5: Time and Distances**

Option B

Explanation:

1h ----- 5

? ------ 60

12 h

RS = 16 + 21 = 37

T = 12

D = 37 \* 12 = 444

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**Question 6: Time and Work**

Option C

Explanation:

Number of pages typed by Ronald in 1 hour = 32/6 = 16/3

Number of pages typed by Elan in 1 hour = 40/5 = 8

Number of pages typed by both in 1 hour = (16/3 + 8) = 40/3

Time taken by both to type 110 pages = (110 \* 3/40) = 8 1/4 = 8 hrs 15 min

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**Question 7: Numbers and Ages**

Option B

Explanation:

Let the present age of the person be x years.

Then, 3(x + 3) - 3(x - 3) = x

3x + 9 - 3x + 9 = x => x = 18

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**Question 8: Permutations and Combinations**

Option B

Explanation:

We know that, the number of straight lines that can be formed by the 11 points in which 6 points are collinear and no other set of three points, except those that can be selected out of these 6 points are collinear.

Hence, the required number of straight lines

= ¹¹C₂ - ⁶C₂ - ⁵C₂ + 1 + 1

= 55 - 15 - 10 + 2 = 32

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**Question 9: Pipes and Cistern**

Option C

Explanation:

Part filled in 2 hours = 2/6 = 1/3.

Remaining part = 1 - 1/3 = 2/3

(A + B)'s 1 hour work = 2/21

C's 1 hour work = [(A + B + C)'s 1 hour work - (A + B)'s 1 hour work]

= (1/6 - 2/21) = 1/14

C alone can fill the tank in 14 hours.

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**Question 10: Probability**

Option A

Explanation:

Number of ways of (selecting at least two couples among five people selected) = (⁵C₂ \* ⁶C₁)

As remaining person can be any one among three couples left.

Required probability = (⁵C₂ \* ⁶C₁)/¹⁰C₅

= (10 \* 6)/252 = 5/21

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