IndiaBIX

Online Aptitude Test :: Aptitude Test - Random

Marks : 6/20

Total number of questions	:	20
Number of answered questions	:	6
Number of unanswered questions	:	14

Test Review : View answers and explanation for this test.

1. What is the unit digit in $(4137)^{754}$?

- [ ] (A) 1
- [ ] (B) 3
- [ ] (C) 7
- [x] (D) 9

Your Answer: Option (D)

Correct Answer: Option (D)

Explanation:

Unit digit in $(4137)^{754}$ = Unit digit in $\{[(4137)^4]^{188} \times (4137)^2\}$

=Unit digit in { 292915317923361 × 17114769 }

= (1 × 9) = 9

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[#]

2. Which one of the following is a prime number ?

- [ ] Ⓐ 161
- [ ] Ⓑ 221
- [x] Ⓒ 373 ✓
- [ ] Ⓓ 437
- [ ] Ⓔ None of these

Your Answer: Option Ⓒ

Correct Answer: Option Ⓒ

Explanation:

437 > 22

All prime numbers less than 22 are : 2, 3, 5, 7, 11, 13, 17, 19.

161 is divisible by 7, and 221 is divisible by 13.

373 is not divisible by any of the above prime numbers.

∴ 373 is prime.

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[#]

3. The greatest number which on dividing 1657 and 2037 leaves remainders 6 and 5 respectively, is:

- [ ] Ⓐ 123
- [x] Ⓑ 127 ✓
- [ ] Ⓒ 235

Ⓓ 305

Your Answer: Option Ⓑ

Correct Answer: Option Ⓑ

Explanation:

Required number = H.C.F. of (1657 - 6) and (2037 - 5)

= H.C.F. of 1651 and 2032 = 127.

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[#]

4. The expression (11.98 × 11.98 + 11.98 x x + 0.02 × 0.02) will be a perfect square for x equal to:

Ⓐ 0.02

Ⓑ 0.2

Ⓒ 0.04 ✓

Ⓓ 0.4

Your Answer: Option (Not Answered)

Correct Answer: Option Ⓒ

Explanation:

Given expression = $(11.98)^2 + (0.02)^2 + 11.98 \times x$.

For the given expression to be a perfect square, we must have

11.98 x x = 2 × 11.98 × 0.02 or x = 0.04

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[#]

5. $\left(3 - \frac{1}{3}\right)^2$ simplifies to:

Ⓐ $\frac{3}{4}$

- Ⓑ $\frac{4}{3}$
- Ⓒ $\frac{4}{3}$ ✓
- Ⓓ None of these

Your Answer: Option Ⓒ

Correct Answer: Option Ⓒ

Explanation:

$$\left(3 - \frac{1}{3}\right)^2 = (3)^2 + \left(\frac{1}{3}\right)^2 - 2 \times 3 \times \frac{1}{3}$$

$$= 3 + \frac{1}{3} - 2$$

$$= 1 + \frac{1}{3}$$

$$= \frac{4}{3}$$

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[#]

6. The sum of the squares of three numbers is 138, while the sum of their products taken two at a time is 131. Their sum is:

- Ⓐ 20 ✓
- Ⓑ 30
- Ⓒ 40
- Ⓓ None of these

Your Answer: Option Ⓐ

Correct Answer: Option Ⓐ

Explanation:

Let the numbers be a , b and c .

Then, $a^2 + b^2 + c^2 = 138$ and $(ab + bc + ca) = 131$.

$(a + b + c)^2 = a^2 + b^2 + c^2 + 2(ab + bc + ca) = 138 + 2 \times 131 = 400$.

$\Rightarrow (a + b + c) = 400 = 20.$

Video Explanation: **https://youtu.be/qmJ-0X8j_xQ**

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[#]

7. Two numbers A and B are such that the sum of 5% of A and 4% of B is two-third of the sum of 6% of A and 8% of B. Find the ratio of A : B.

- (A) 2 : 3
- (B) 1 : 1
- (C) 3 : 4
- (D) 4 : 3 ✓

Your Answer: Option (D)

Correct Answer: Option (D)

Explanation:

5% of A + 4% of B = $\frac{2}{3}$ (6% of A + 8% of B)

$\Rightarrow \frac{5}{100}A + \frac{4}{100}B = \frac{2}{3}\left(\frac{6}{100}A + \frac{8}{100}B\right)$

$\Rightarrow \frac{1}{20}A + \frac{1}{25}B = \frac{1}{25}A + \frac{4}{75}B$

$\Rightarrow \left(\frac{1}{20} - \frac{1}{25}\right)A = \left(\frac{4}{75} - \frac{1}{25}\right)B$

$\Rightarrow \frac{1}{100}A = \frac{1}{75}B$

$\frac{A}{B} = \frac{100}{75} = \frac{4}{3}.$

$\therefore$ Required ratio = 4 : 3

Video Explanation: **YouTube Video**

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[#]

8. Seats for Mathematics, Physics and Biology in a school are in the ratio 5 : 7 : 8. There is a proposal to increase these seats by 40%, 50% and 75% respectively. What will be the ratio of increased seats?

- (A) 2 : 3 : 4 ✓
- (B) 6 : 7 : 8
- (C) 6 : 8 : 9
- (D) None of these

Your Answer: Option (Not Answered)

Correct Answer: Option (A)

Explanation:

Originally, let the number of seats for Mathematics, Physics and Biology be $5x$, $7x$ and $8x$ respectively.

Number of increased seats are (140% of $5x$), (150% of $7x$) and (175% of $8x$).

$\Rightarrow \left(\frac{140}{100} \times 5x\right)$, $\left(\frac{150}{100} \times 7x\right)$ and $\left(\frac{175}{100} \times 8x\right)$

$\Rightarrow 7x$, $\frac{21x}{2}$ and $14x$.

$\therefore$ The required ratio = $7x : \frac{21x}{2} : 14x$

$\Rightarrow 14x : 21x : 28x$

$\Rightarrow 2 : 3 : 4$.

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[#]

9. The fourth proportional to 5, 8, 15 is:

- (A) 18
- (B) 24 ✓
- (C) 19
- (D) 20

Your Answer: Option (Not Answered)

Correct Answer: Option (B)

Explanation:

Let the fourth proportional to 5, 8, 15 be x .

Then, 5 : 8 : 15 : x

$\Rightarrow 5x = (8 \times 15)$

$x = \frac{(8 \times 15)}{5} = 24.$

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[#]

10. A works twice as fast as B. If B can complete a work in 12 days independently, the number of days in which A and B can together finish the work in :

- (A) 4 days ✓
- (B) 6 days
- (C) 8 days
- (D) 18 days

Your Answer: Option (Not Answered)

Correct Answer: Option (A)

Explanation:

Ratio of rates of working of A and B = 2 : 1.

So, ratio of times taken = 1 : 2.

B's 1 day's work = $\frac{1}{12}$.

$\therefore$ A's 1 day's work = $\frac{1}{6}$; (2 times of B's work)

(A + B)'s 1 day's work = $\left(\frac{1}{6} + \frac{1}{12}\right) = \frac{3}{12} = \frac{1}{4}.$

So, A and B together can finish the work in 4 days.

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[#]

11. A can finish a work in 18 days and B can do the same work in 15 days. B worked for 10 days and left the job. In how many days, A alone can finish the remaining work?

- Ⓐ 5
- Ⓑ $5\frac{1}{2}$
- Ⓒ 6 ✓
- Ⓓ 8

Your Answer: Option (Not Answered)

Correct Answer: Option Ⓒ

Explanation:

B's 10 day's work = $\left(\frac{1}{15} \times 10\right) = \frac{2}{3}$.

Remaining work = $\left(1 - \frac{2}{3}\right) = \frac{1}{3}$.

Now, $\frac{1}{18}$ work is done by A in 1 day.

$\therefore$ $\frac{1}{3}$ work is done by A in $\left(18 \times \frac{1}{3}\right)$ = 6 days.

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[#]

12. Two, trains, one from Howrah to Patna and the other from Patna to Howrah, start simultaneously. After they meet, the trains reach their destinations after 9 hours and 16 hours respectively. The ratio of their speeds is:

- Ⓐ 2 : 3
- Ⓑ 4 : 3 ✓
- Ⓒ 6 : 7
- Ⓓ 9 : 16

Your Answer: Option (Not Answered)

Correct Answer: Option Ⓑ

Explanation:

Let us name the trains as A and B. Then,

(A's speed) : (B's speed) = b : a = 16 : 9 = 4 : 3.

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Learn more problems on : Problems on Trains

[#]

> Direction (Q.No. 13)
>
> Each of these questions is followed by three statements. You have to study the question and all the three statements given to decide whether any information provided in the statement(s) is redundant and can be dispensed with while answering the given question.

13. What is the length of a running train P crossing another running train Q?

I. These two trains take 18 seconds to cross each other.

II. These trains are running in opposite directions.

III. The length of the train Q is 180 metres.

- (A) I only
- (B) II only
- (C) III only
- (D) All I, II and III are required
- (E) Even with I, II and III, the answer cannot be obtained. ✓

Your Answer: Option (Not Answered)

Correct Answer: Option (E)

Explanation:

Let the length of the train P be x metres.

II. These trains are running in opposite directions.

III. Length of the train Q is 180 m.

I. Time taken by P to cross Q = $\frac{(180 + x)}{\text{Relative speed}} \Rightarrow 18 = \frac{(180 + x)}{\text{Relative speed}}$

Thus, even with I, II and III, the answer cannot be obtained.

∴ Correct answer is (E).

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[#]

14. A man takes twice as long to row a distance against the stream as to row the same distance in favour of the stream. The ratio of the speed of the boat (in still water) and the stream is:

- (A) 2 : 1
- (B) 3 : 1 ✓
- (C) 3 : 2
- (D) 4 : 3

Your Answer: Option (Not Answered)

Correct Answer: Option (B)

Explanation:

Let man's rate upstream be x kmph.

Then, his rate downstream = $2x$ kmph.

$\therefore$ (Speed in still water) : (Speed of stream) = $\left(\frac{2x + x}{2}\right) : \left(\frac{2x - x}{2}\right)$

$= \frac{3x}{2} : \frac{x}{2}$

$= 3 : 1.$

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[#]

15. Find the ratio in which rice at Rs. 7.20 a kg be mixed with rice at Rs. 5.70 a kg to produce a mixture worth Rs. 6.30 a kg.

- (A) 1 : 3
- (B) 2 : 3 ✓
- (C) 3 : 4
- (D) 4 : 5

Your Answer: Option (Not Answered)

Correct Answer: Option (B)

Explanation:

By the rule of alligation:

Cost of 1 kg of 1st kind		Cost of 1 kg of 2nd kind
720 p		570 p
	Mean Price 630 p	
60		90

∴ Required ratio = 60 : 90 = 2 : 3.

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Learn more problems on : Alligation or Mixture

[#]

16. If $a^x = b^y$, then:

- (A) $\log \frac{a}{b} = \frac{x}{y}$
- (B) $\frac{\log a}{\log b} = \frac{x}{y}$
- (C) $\frac{\log a}{\log b} = \frac{y}{x}$ ✓
- (D) None of these

Your Answer: Option (Not Answered)

Correct Answer: Option (C)

Explanation:

$a^x = b^y$

$\Rightarrow \log a^x = \log b^y$

$\Rightarrow x \log a = y \log b$

$\Rightarrow \frac{\log a}{\log b} = \frac{y}{x}$.

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[#]

17. A cistern 6m long and 4 m wide contains water up to a depth of 1 m 25 cm. The total area of the wet surface is:

- (A) 49 m^2 ✓
- (B) 50 m^2
- (C) 53.5 m^2
- (D) 55 m^2

Your Answer: Option (Not Answered)

Correct Answer: Option (A)

Explanation:

Area of the wet surface $= [2(lb + bh + lh) - lb]$

$= 2(bh + lh) + lb$

$= [2 (4 \times 1.25 + 6 \times 1.25) + 6 \times 4] m^2$

$= 49 m^2$.

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[#]

18. On what dates of April, 2001 did Wednesday fall?

- (A) 1^{st}, 8^{th}, 15^{th}, 22^{nd}, 29^{th}
- (B) 2^{nd}, 9^{th}, 16^{th}, 23^{rd}, 30^{th}
- (C) 3^{rd}, 10^{th}, 17^{th}, 24^{th}
- (D) 4^{th}, 11^{th}, 18^{th}, 25^{th} ✓

Your Answer: Option (Not Answered)

Correct Answer: Option (D)

Explanation:

We shall find the day on 1^{st} April, 2001.

1^{st} April, 2001 = (2000 years + Period from 1.1.2001 to 1.4.2001)

Odd days in 1600 years = 0

Odd days in 400 years = 0

Jan. Feb. March April

(31 + 28 + 31 + 1) = 91 days ≡ 0 odd days.

Total number of odd days = (0 + 0 + 0) = 0

On 1st April, 2001 it was Sunday.

In April, 2001 Wednesday falls on 4th, 11th, 18th and 25th.

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[#]

19. A man invested Rs. 4455 in Rs. 10 shares quoted at Rs. 8.25. If the rate of dividend be 12%, his annual income is:

- (A) Rs. 207.40
- (B) Rs. 534.60
- (C) Rs. 648 ✓
- (D) Rs. 655.60

Your Answer: Option (Not Answered)

Correct Answer: Option (C)

Explanation:

Number of shares = $\left(\frac{4455}{8.25}\right)$ = 540.

Face value = Rs. (540 × 10) = Rs. 5400.

Annual income = Rs. $\left(\frac{12}{100} \times 5400\right)$ = Rs. 648.

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[#]

20. The angle of elevation of the sun, when the length of the shadow of a tree 3 times the height of the tree, is:

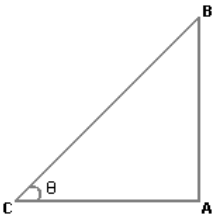
- (A) 30° ✓
- (B) 45°
- (C) 60°
- (D) 90°

Your Answer: Option (Not Answered)

Correct Answer: Option (A)

Explanation:

Let AB be the tree and AC be its shadow.



Let $\angle ACB = \theta$.

Then, $\frac{AC}{AB} = 3 \Rightarrow \cot\theta = 3$

$\therefore \theta = 30°$.

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[#]

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