Book For

Canara Bank

Canara Bank SO Reasoning Sample Paper Main Exam

(1) A, B and C can do a piece of work in 20, 30 and 60 days respectively. In how many days can A do the work if he is assisted by B and C on every third day?

[A] 12 days

[B] 15 days

[C] 16 days

[D] 18 days

Answer : [B]

Explanation:

A's 2 day's work = $\left(\frac{1}{20} \times 2\right) = \frac{1}{10}$.

(A + B + C)'s 1 day's work = $\left(\frac{1}{20} + \frac{1}{30} + \frac{1}{60}\right) = \frac{6}{60} = \frac{1}{10}$.

Work done in 3 days = $\left(\frac{1}{10} + \frac{1}{10}\right) = \frac{1}{5}$.

Now, $\frac{1}{5}$ work is done in 3 days.

$\therefore$ Whole work will be done in (3 x 5) = 15 days.

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(2) 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

Answer : [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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(3) A and B can do a piece of work in 30 days, while B and C can do the same work in 24 days and C and A in 20 days. They all work together for 10 days when B and C leave. How many days more will A take to finish the work?

[A] 18 days

[B] 24 days

[C] 30 days

[D] 36 days

Answer : [A]

Explanation:

2(A + B + C)'s 1 day's work = $\left(\frac{1}{30} + \frac{1}{24} + \frac{1}{20}\right) = \frac{15}{120} = \frac{1}{8}$.

Therefore, (A + B + C)'s 1 day's work = $\frac{1}{2 \times 8} = \frac{1}{16}$.

Work done by A, B, C in 10 days = $\frac{10}{16} = \frac{5}{8}$.

Remaining work = $\left(1 - \frac{5}{8}\right) = \frac{3}{8}$.

A's 1 day's work = $\left(\frac{1}{16} - \frac{1}{24}\right) = \frac{1}{48}$.

Now, $\frac{1}{48}$ work is done by A in 1 day.

So, $\frac{3}{8}$ work will be done by A in $\left(48 \times \frac{3}{8}\right)$ = 18 days.

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(4) A and B can complete a work in 15 days and 10 days respectively. They started doing the work together but after 2 days B had to leave and A alone completed the remaining work. The whole work was completed in :

[A] 8 days

[B] 10 days

[C] 12 days

[D] 15 days

Answer : [C]

Explanation:

(A + B)'s 1 day's work = $\left(\frac{1}{15} + \frac{1}{10}\right) = \frac{1}{6}$.

Work done by A and B in 2 days = $\left(\frac{1}{6} \times 2\right) = \frac{1}{3}$.

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

Now, $\frac{1}{15}$ work is done by A in 1 day.

$\therefore$ $\frac{2}{3}$ work will be done by a in $\left(15 \times \frac{2}{3}\right)$ = 10 days.

Hence, the total time taken = (10 + 2) = 12 days.

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(5) Twenty women can do a work in sixteen days. Sixteen men can complete the same work in fifteen days. What is the ratio between the capacity of a man and a woman?

[A] 3 : 4

[B] 4 : 3

[C] 5 : 3

[D] Data inadequate

Answer : [B]

Explanation:
(20 x 16) women can complete the work in 1 day.

$\therefore$ 1 woman's 1 day's work = $\frac{1}{320}$.

(16 x 15) men can complete the work in 1 day.

$\therefore$ 1 man's 1 day's work = $\frac{1}{240}$

So, required ratio = $\frac{1}{240} : \frac{1}{320}$

$= \frac{1}{3} : \frac{1}{4}$

= 4 : 3 (cross multiplied)

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(6) The difference between simple and compound interests compounded annually on a certain sum of money for 2 years at 4% per annum is Re. 1. The sum (in Rs.) is:

[A] 625

[B] 630

[C] 640

[D] 650

Answer : [A]

Explanation:
Let the sum be Rs. x. Then,

C.I. = $\left[x \left(1 + \frac{4}{100} \right)^2 - x \right] = \left(\frac{676}{625}x - x \right) = \frac{51}{625}x$.

S.I. = $\left(\frac{x \times 4 \times 2}{100} \right) = \frac{2x}{25}$.

$\therefore \frac{51x}{625} - \frac{2x}{25} = 1$

$\Rightarrow x = 625$.

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(7) What is the difference between the compound interests on Rs. 5000 for $1\frac{1}{2}$ years at 4% per annum compounded yearly and half-yearly?

[A] Rs. 2.04

[B] Rs. 3.06

[C] Rs. 4.80

[D] Rs. 8.30

Answer : [A]

Explanation:
C.I. when interest = Rs. 5000 x 1 + 4 x 1 +

compounded yearly $\left[\left(\frac{}{100}\right)\left(\frac{\frac{1}{2}\times 4}{100}\right)\right]$

$= \text{Rs.}\left(5000 \times \frac{26}{25} \times \frac{51}{50}\right)$

$= \text{Rs. } 5304.$

C.I. when interest is compounded half-yearly $= \text{Rs.}\left[5000 \times \left(1 + \frac{2}{100}\right)^3\right]$

$= \text{Rs.}\left(5000 \times \frac{51}{50} \times \frac{51}{50} \times \frac{51}{50}\right)$

$= \text{Rs. } 5306.04$

$\therefore$ Difference = Rs. (5306.04 - 5304) = Rs. 2.04

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(8) The effective annual rate of interest corresponding to a nominal rate of 6% per annum payable half-yearly is:

[A] 6.06%

[B] 6.07%

[C] 6.08%

[D] 6.09%

Answer : [D]

Explanation:

Amount of Rs. 100 for 1 year when compounded half-yearly $= \text{Rs.}\left[100 \times \left(1 + \frac{3}{100}\right)^2\right] = \text{Rs. } 106.09$

$\therefore$ Effective rate = (106.09 - 100)% = 6.09%

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(9) The difference between simple interest and compound on Rs. 1200 for one year at 10% per annum reckoned half-yearly is:

[A] Rs. 2.50

[B] Rs. 3

[C] Rs. 3.75

[D] Rs. 4

[E] None of these

Answer : [B]

Explanation:

S.I. = Rs $\left(\frac{1200 \times 10 \times 1}{100}\right) = \text{Rs. } 120.$

C.I. = Rs. $\left[1200 \times \left(1 + \frac{5}{100}\right)^2 - 1200\right] = \text{Rs. } 123.$

$\therefore$ Difference = Rs. (123 - 120) = Rs. 3.

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(10) Simple interest on a certain sum of money for 3 years at 8% per annum is half the compound interest on Rs. 4000 for 2 years at 10% per annum. The sum placed on simple interest is:

[A] Rs. 1550

[B] Rs. 1650

[C] Rs. 1750

[D] Rs. 2000

Answer : [C]

Explanation:

$$\text{C.I.} = \text{Rs.}\left[4000 \times \left(1 + \frac{10}{100}\right)^2 - 4000\right]$$

$$= \text{Rs.}\left(4000 \times \frac{11}{10} \times \frac{11}{10} - 4000\right)$$

$$= \text{Rs. } 840.$$

$$\therefore \text{ Sum} = \text{Rs.}\left(\frac{420 \times 100}{3 \times 8}\right) = \text{Rs. } 1750.$$

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(11) Out of 7 consonants and 4 vowels, how many words of 3 consonants and 2 vowels can be formed?

[A] 210

[B] 1050

[C] 25200

[D] 21400

[E] None of these

Answer : [C]

Explanation:

Number of ways of selecting (3 consonants out of 7) and (2 vowels out of 4)

$$= ({}^7C_3 \times {}^4C_2)$$

$$= \left(\frac{7 \times 6 \times 5}{3 \times 2 \times 1} \times \frac{4 \times 3}{2 \times 1}\right)$$

$$= 210.$$

Number of groups, each having 3 consonants and 2 vowels = 210.

Each group contains 5 letters.

Number of ways of arranging 5 letters among themselves $= 5!$

$$= 5 \times 4 \times 3 \times 2 \times 1$$

$$= 120.$$

$\therefore$ Required number of ways = (210 x 120) = 25200.

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(12) In how many different ways can the letters of the word 'CORPORATION' be arranged so that the vowels always come together?

[A] 810

[B] 1440

[C] 2880

[D] 50400

[E] 5760

Answer : [D]

Explanation:
In the word 'CORPORATION', we treat the vowels OOAIO as one letter.
Thus, we have CRPRTN (OOAIO).
This has 7 (6 + 1) letters of which R occurs 2 times and the rest are different.
Number of ways arranging these letters = $\frac{7!}{2!}$ = 2520.

Now, 5 vowels in which O occurs 3 times and the rest are different, can be arranged
in $\frac{5!}{3!}$ = 20 ways.

∴ Required number of ways = (2520 x 20) = 50400.

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(13) From a group of 7 men and 6 women, five persons are to be selected to form a committee so that at least 3 men are there on the committee. In how many ways can it be done?

[A] 564

[B] 645

[C] 735

[D] 756

[E] None of these

Answer : [D]

Explanation:
We may have (3 men and 2 women) or (4 men and 1 woman) or (5 men only).
∴ Required number of ways = $({}^7C_3 \times {}^6C_2) + ({}^7C_4 \times {}^6C_1) + ({}^7C_5)$

$$= \left(\frac{7 \times 6 \times 5}{3 \times 2 \times 1} \times \frac{6 \times 5}{2 \times 1}\right) + ({}^7C_3 \times {}^6C_1) + ({}^7C_2)$$

$$= 525 + \left(\frac{7 \times 6 \times 5}{3 \times 2 \times 1} \times 6\right) + \left(\frac{7 \times 6}{2 \times 1}\right)$$

$$= (525 + 210 + 21)$$

$$= 756.$$

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(14) In a group of 6 boys and 4 girls, four children are to be selected. In how many different ways can they be selected such that at least one boy should be there?

[A] 159

[B] 194

[C] 205

[D] 209

[E] None of these

Answer : [D]

Explanation:
We may have (1 boy and 3 girls) or (2 boys and 2 girls) or (3 boys and 1 girl) or (4 boys).

$\therefore$ Required number of ways $= ({}^6C_1 \times {}^4C_3) + ({}^6C_2 \times {}^4C_2) + ({}^6C_3 \times {}^4C_1) + ({}^6C_4)$

$= ({}^6C_1 \times {}^4C_1) + ({}^6C_2 \times {}^4C_2) + ({}^6C_3 \times {}^4C_1) + ({}^6C_2)$

$= (6 \times 4) + \left(\frac{6 \times 5}{2 \times 1} \times \frac{4 \times 3}{2 \times 1}\right) + \left(\frac{6 \times 5 \times 4}{3 \times 2 \times 1} \times 4\right) + \left(\frac{6 \times 5}{2 \times 1}\right)$

$= (24 + 90 + 80 + 15)$

$= 209.$

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(15) How many 3-digit numbers can be formed from the digits 2, 3, 5, 6, 7 and 9, which are divisible by 5 and none of the digits is repeated?

[A] 5

[B] 10

[C] 15

[D] 20

Answer : [D]

Explanation:
Since each desired number is divisible by 5, so we must have 5 at the unit place. So, there is 1 way of doing it.
The tens place can now be filled by any of the remaining 5 digits (2, 3, 6, 7, 9). So, there are 5 ways of filling the tens place.
The hundreds place can now be filled by any of the remaining 4 digits. So, there are 4 ways of filling it.
$\therefore$ Required number of numbers = (1 x 5 x 4) = 20.

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(16) Pipes A and B can fill a tank in 5 and 6 hours respectively. Pipe C can empty it in 12 hours. If all the three pipes are opened together, then the tank will be filled in:

[A] $1\frac{13}{17}$ hours

[B] $2\frac{8}{11}$ hours

[C] $3\frac{9}{17}$ hours

[D] $4\frac{1}{2}$ hours

Answer : [C]

Explanation:
Net part filled in 1 hour $\left(\frac{1}{5} + \frac{1}{6} - \frac{1}{12}\right) = \frac{17}{60}.$

$\therefore$ The tank will be full in $\frac{60}{17}$ hours *i.e.,* $3\frac{9}{17}$ hours.

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(17) A tank is filled by three pipes with uniform flow. The first two pipes operating simultaneously fill the tank in the same time during which the tank is filled by the third pipe alone. The second pipe fills the tank 5 hours faster than the first pipe and 4 hours slower than the third pipe. The

time required by the first pipe is:

[A] 6 hours

[B] 10 hours

[C] 15 hours

[D] 30 hours

Answer : [C]

Explanation:
Suppose, first pipe alone takes x hours to fill the tank .
Then, second and third pipes will take $(x - 5)$ and $(x - 9)$ hours respectively to fill the tank.
$\therefore \frac{1}{x} + \frac{1}{(x - 5)} = \frac{1}{(x - 9)}$

$\Rightarrow \frac{x - 5 + x}{x(x - 5)} = \frac{1}{(x - 9)}$

$\Rightarrow (2x - 5)(x - 9) = x(x - 5)$
$\Rightarrow x^2 - 18x + 45 = 0$
$(x - 15)(x - 3) = 0$
$\Rightarrow x = 15.$ [neglecting $x = 3$]

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(18) A pump can fill a tank with water in 2 hours. Because of a leak, it took $2\frac{1}{3}$ hours to fill the tank. The leak can drain all the water of the tank in:

[A] $4\frac{1}{3}$ hours

[B] 7 hours

[C] 8 hours

[D] 14 hours

Answer : [D]

Explanation:
Work done by the leak in 1 hour $= \left(\frac{1}{2} - \frac{3}{7}\right) = \frac{1}{14}.$

$\therefore$ Leak will empty the tank in 14 hrs.

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(19) Two pipes A and B together can fill a cistern in 4 hours. Had they been opened separately, then B would have taken 6 hours more than A to fill the cistern. How much time will be taken by A to fill the cistern separately?

[A] 1 hour

[B] 2 hours

[C] 6 hours

[D] 8 hours

Answer : [C]

Explanation:
Let the cistern be filled by pipe A alone in x hours.
Then, pipe B will fill it in $(x + 6)$ hours.
$\therefore \frac{1}{x} + \frac{1}{(x + 6)} = \frac{1}{4}$

$\Rightarrow$

$$\frac{x + 6 + x}{x(x + 6)} = \frac{1}{4}$$

$\Rightarrow x^2 - 2x - 24 = 0$
$\Rightarrow (x - 6)(x + 4) = 0$
$\Rightarrow x = 6.$ [neglecting the negative value of x]

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(20) Three taps A, B and C can fill a tank in 12, 15 and 20 hours respectively. If A is open all the time and B and C are open for one hour each alternately, the tank will be full in:

[A] 6 hours

[B]
$6\frac{2}{3}$ hours

[C] 7 hours

[D]
$7\frac{1}{2}$ hours

Answer : [C]

Explanation:

(A + B)'s 1 hour's work = $\left(\frac{1}{12} + \frac{1}{15}\right) = \frac{9}{60} = \frac{3}{20}$.

(A + C)'s hour's work = $\left(\frac{1}{12} + \frac{1}{20}\right) = \frac{8}{60} = \frac{2}{15}$.

Part filled in 2 hrs = $\left(\frac{3}{20} + \frac{2}{15}\right) = \frac{17}{60}$.

Part filled in 6 hrs = $\left(3 \times \frac{17}{60}\right) = \frac{17}{20}$.

Remaining part = $\left(1 - \frac{17}{20}\right) = \frac{3}{20}$.

Now, it is the turn of A and B and $\frac{3}{20}$ part is filled by A and B in 1 hour.

$\therefore$ Total time taken to fill the tank = (6 + 1) hrs = 7 hrs.
