

Book For
Railway Recruitment Board Delhi



Railway Recruitment Board Delhi Senior Section Engineer Aptitude Book



Visit our websites:

www.Couponlal.com
www.Myexamportal.com
www.Examlal.com

| www.Joblal.com
| www.joinexam.in
| www.examy.com

Q. 1 If a quarter kg of potato costs 60 paise, how many paise will 200 gm cost?

- [A] 48 paise
- [B] 54 paise
- [C] 56 paise
- [D] 72 paise

Answer Option [A]

Explanation:

Let the required weight be x kg.

Less weight, Less cost (Direct Proportion)

$$\therefore 250 : 200 :: 60 : x \Leftrightarrow 250 \times x = (200 \times 60)$$

$$\Rightarrow x = \frac{(200 \times 60)}{250}$$

$$\Rightarrow x = 48.$$

www.examy.com | www.sample-papers.com | www.examlal.com | www.mock-tests.com.com | www.question-papers.com

Q. 2 A sum of Rs. 12,500 amounts to Rs. 15,500 in 4 years at the rate of simple interest. What is the rate of interest?

- [A] 3%
- [B] 4%
- [C] 5%
- [D] 6%
- [E] None of these

Answer Option [D]

Explanation:

S.I. = Rs. (15500 - 12500) = Rs. 3000.

$$\text{Rate} = \left(\frac{100 \times 3000}{12500 \times 4} \right) \% = 6\%$$

www.examy.com | www.sample-papers.com | www.examlal.com | www.mock-tests.com.com | www.question-papers.com

Q. 3 A takes twice as much time as B or thrice as much time as C to finish a piece of work. Working together, they can finish the work in 2 days. B can do the work alone in:

- [A] 4 days
- [B] 6 days
- [C] 8 days
- [D] 12 days

Answer Option [B]

Explanation:

Suppose A, B and C take x , $\frac{x}{2}$ and $\frac{x}{3}$ days respectively to finish the work.

$$\text{Then, } \left(\frac{1}{x} + \frac{2}{x} + \frac{3}{x} \right) = \frac{1}{2}$$

$$\Rightarrow \frac{6}{x} = \frac{1}{2}$$

$$\Rightarrow x = 12.$$

So, B takes $(12/2) = 6$ days to finish the work.

Q. 4 **39 persons can repair a road in 12 days, working 5 hours a day. In how many days will 30 persons, working 6 hours a day, complete the work?**

- [A] 10
- [B] 13
- [C] 14
- [D] 15

Answer Option [B]

Explanation:

Let the required number of days be x .

Less persons, More days (Indirect Proportion)

More working hours per day, Less days (Indirect Proportion)

$$\begin{array}{l} \text{Persons} \quad 30 : 39 \\ \text{Working hours/day} \quad 6 : 5 \end{array} \left. \vphantom{\begin{array}{l} \text{Persons} \\ \text{Working hours/day} \end{array}} \right\} :: 12 : x$$

$$\therefore 30 \times 6 \times x = 39 \times 5 \times 12$$

$$\Rightarrow x = \frac{(39 \times 5 \times 12)}{(30 \times 6)}$$

$$\Rightarrow x = 13.$$

Q. 5 **A sum of money at simple interest amounts to Rs. 815 in 3 years and to Rs. 854 in 4 years. The sum is:**

- [A] Rs. 650
- [B] Rs. 690
- [C] Rs. 698
- [D] Rs. 700

Answer Option [C]

Explanation:

S.I. for 1 year = Rs. (854 - 815) = Rs. 39.

S.I. for 3 years = Rs. (39 x 3) = Rs. 117.

\therefore Principal = Rs. (815 - 117) = Rs. 698.

Q. 6 **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 Option [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.

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

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

$$\Rightarrow (2x - 5)(x - 9) = x(x - 5)$$

$$\Rightarrow x^2 - 18x + 45 = 0$$

$$(x - 15)(x - 3) = 0$$

$$\Rightarrow x = 15. \quad [\text{neglecting } x = 3]$$

www.examy.com | www.sample-papers.com | www.examlal.com | www.mock-tests.com.com | www.question-papers.com

Q. 7 **A and B together can do a piece of work in 30 days. A having worked for 16 days, B finishes the remaining work alone in 44 days. In how many days shall B finish the whole work alone?**

[A] 30 days

[B] 40 days

[C] 60 days

[D] 70 days

Answer Option [C]

Explanation:

Let A's 1 day's work = x and B's 1 day's work = y .

$$\text{Then, } x + y = \frac{1}{30} \text{ and } 16x + 44y = 1.$$

$$\text{Solving these two equations, we get: } x = \frac{1}{60} \text{ and } y = \frac{1}{60}$$

$$\therefore \text{ B's 1 day's work} = \frac{1}{60}.$$

Hence, B alone shall finish the whole work in 60 days.

www.examy.com | www.sample-papers.com | www.examlal.com | www.mock-tests.com.com | www.question-papers.com

Q. 8 **A shopkeeper expects a gain of 22.5% on his cost price. If in a week, his sale was of Rs. 392, what was his profit?**

[A] Rs. 18.20

[B] Rs. 70

[C] Rs. 72

[D] Rs. 88.25

Answer Option [C]

Explanation:

$$\text{C.P.} = \text{Rs.} \left(\frac{100}{122.5} \times 392 \right) = \text{Rs.} \left(\frac{1000}{1225} \times 392 \right) = \text{Rs.} 320$$

$$\therefore \text{ Profit} = \text{Rs.} (392 - 320) = \text{Rs.} 72.$$

www.examy.com | www.sample-papers.com | www.examlal.com | www.mock-tests.com.com | www.question-papers.com

Q. 9 **Three pipes A, B and C can fill a tank in 6 hours. After working at it together for 2 hours, C is closed and A and B can fill the remaining part in 7 hours. The number of hours taken by C alone to fill the tank is:**

[A] 10

[B] 12

[C] 14

[D] 16

Answer Option [C]

Explanation:

$$\text{Part filled in 2 hours} = \frac{2}{6} = \frac{1}{3}$$

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

$$\therefore (A + B)\text{'s 7 hour's work} = \frac{2}{3}$$

$$(A + B)\text{'s 1 hour's work} = \frac{2}{21}$$

$$\begin{aligned} \therefore \text{C's 1 hour's work} &= \{ (A + B + C)\text{'s 1 hour's work} \} - \{ (A + B)\text{'s 1 hour's work} \} \\ &= \left(\frac{1}{6} - \frac{2}{21} \right) = \frac{1}{14} \end{aligned}$$

\therefore C alone can fill the tank in 14 hours.

www.examy.com | www.sample-papers.com | www.examlal.com | www.mock-tests.com.com | www.question-papers.com

Q. 10 **A and B can do a work in 8 days, B and C can do the same work in 12 days. A, B and C together can finish it in 6 days. A and C together will do it in :**

- [A] 4 days
- [B] 6 days
- [C] 8 days
- [D] 12 days

Answer Option [C]

Explanation:

$$(A + B + C)\text{'s 1 day's work} = \frac{1}{6} ;$$

$$(A + B)\text{'s 1 day's work} = \frac{1}{8} ;$$

$$(B + C)\text{'s 1 day's work} = \frac{1}{12} .$$

$$\begin{aligned} \therefore (A + C)\text{'s 1 day's work} &= \left(2 \times \frac{1}{6} \right) - \left(\frac{1}{8} + \frac{1}{12} \right) \\ &= \left(\frac{1}{3} - \frac{5}{24} \right) \\ &= \frac{3}{24} \\ &= \frac{1}{8} . \end{aligned}$$

So, A and C together will do the work in 8 days.

www.examy.com | www.sample-papers.com | www.examlal.com | www.mock-tests.com.com | www.question-papers.com

A can finish a work in 24 days, B in 9 days and C in 12 days. B and C start the work but are forced to leave after 3 days.

Q. 11 The remaining work was done by A in:

- [A] 5 days
- [B] 6 days
- [C] 10 days
- [D] $10\frac{1}{2}$ days

www.joblal.com

Answer Option [C]

Explanation:

$$(B + C)\text{'s 1 day's work} = \left(\frac{1}{9} + \frac{1}{12}\right) = \frac{7}{36}.$$

$$\text{Work done by B and C in 3 days} = \left(\frac{7}{36} \times 3\right) = \frac{7}{12}.$$

$$\text{Remaining work} = \left(1 - \frac{7}{12}\right) = \frac{5}{12}.$$

Now, $\frac{1}{24}$ work is done by A in 1 day.

$$\text{So, } \frac{5}{12} \text{ work is done by A in } \left(24 \times \frac{5}{12}\right) = 10 \text{ days.}$$

www.examy.com | www.sample-papers.com | www.examlal.com | www.mock-tests.com.com | www.question-papers.com

Q. 12 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

www.joblal.com

Answer Option [D]

Explanation:

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

∴ Leak will empty the tank in 14 hrs.

www.examy.com | www.sample-papers.com | www.examlal.com | www.mock-tests.com.com | www.question-papers.com

Q. 13 A shopkeeper sells one transistor for Rs. 840 at a gain of 20% and another for Rs. 960 at a loss of 4%. His total gain or loss percent is:

- [A] $5\frac{15}{17}$ % loss
- [B] $5\frac{15}{17}$ % gain

[C] $\frac{2}{6 \frac{2}{3}}$ % gain

[D] None of these

Answer Option [B]

Explanation:

$$\text{C.P. of 1}^{\text{st}} \text{ transistor} = \text{Rs. } \left(\frac{100}{120} \times 840 \right) = \text{Rs. } 700.$$

$$\text{C.P. of 2}^{\text{nd}} \text{ transistor} = \text{Rs. } \left(\frac{100}{96} \times 960 \right) = \text{Rs. } 1000$$

So, total C.P. = Rs. (700 + 1000) = Rs. 1700.

Total S.P. = Rs. (840 + 960) = Rs. 1800.

$$\therefore \text{Gain \%} = \left(\frac{100}{1700} \times 100 \right) \% = 5 \frac{15}{17} \%$$

www.examy.com | www.sample-papers.com | www.examlal.com | www.mock-tests.com.com | www.question-papers.com

Q. 14 **A large tanker can be filled by two pipes A and B in 60 minutes and 40 minutes respectively. How many minutes will it take to fill the tanker from empty state if B is used for half the time and A and B fill it together for the other half?**

- [A] 15 min
- [B] 20 min
- [C] 27.5 min
- [D] 30 min

Answer Option [D]

Explanation:

$$\text{Part filled by (A + B) in 1 minute} = \left(\frac{1}{60} + \frac{1}{40} \right) = \frac{1}{24}.$$

Suppose the tank is filled in x minutes.

$$\text{Then, } \frac{x}{2} \left(\frac{1}{24} + \frac{1}{40} \right) = 1$$

$$\Rightarrow \frac{x}{2} \times \frac{1}{15} = 1$$

$$\Rightarrow x = 30 \text{ min.}$$

www.examy.com | www.sample-papers.com | www.examlal.com | www.mock-tests.com.com | www.question-papers.com

Q. 15 **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 Option [C]

Explanation:

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

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

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

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

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

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

www.examy.com | www.sample-papers.com | www.examlal.com | www.mock-tests.com.com | www.question-papers.com

Q. 16 **If selling price is doubled, the profit triples. Find the profit percent.**

[A] $\frac{2}{66 \frac{2}{3}}$

[B] 100

[C] $105 \frac{1}{3}$

[D] 120

Answer Option [B]

Explanation:

Let C.P. be Rs. x and S.P. be Rs. y .

Then, $3(y - x) = (2y - x) \Rightarrow y = 2x$.

Profit = Rs. $(y - x) = \text{Rs. } (2x - x) = \text{Rs. } x$.

$$\therefore \text{Profit \%} = \left(\frac{x}{x} \times 100 \right) \% = 100\%$$

www.examy.com | www.sample-papers.com | www.examlal.com | www.mock-tests.com.com | www.question-papers.com

Q. 17 **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?**

[A] 5

[B] $5 \frac{1}{2}$

[C] 6

[D] 8

Answer Option [C]

Explanation:

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

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

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.

www.examy.com | www.sample-papers.com | www.examlal.com | www.mock-tests.com.com | www.question-papers.com

Q. 18 **Mr. Thomas invested an amount of Rs. 13,900 divided in two different schemes A and B at the simple interest rate of 14% p.a. and 11% p.a. respectively. If the total amount of simple interest earned in 2 years be Rs. 3508, what was the amount invested in Scheme B?**

[A] Rs. 6400

[B] Rs. 6500

[C] Rs. 7200

[D] Rs. 7500

[E] None of these

Answer Option [A]

Explanation:

Let the sum invested in Scheme A be Rs. x and that in Scheme B be Rs. $(13900 - x)$.

$$\text{Then, } \left(\frac{x \times 14 \times 2}{100}\right) + \left(\frac{(13900 - x) \times 11 \times 2}{100}\right) = 3508$$

$$\Rightarrow 28x - 22x = 350800 - (13900 \times 22)$$

$$\Rightarrow 6x = 45000$$

$$\Rightarrow x = 7500.$$

So, sum invested in Scheme B = Rs. $(13900 - 7500) =$ Rs. 6400.

www.examy.com | www.sample-papers.com | www.examlal.com | www.mock-tests.com.com | www.question-papers.com

Q. 19 **A machine P can print one lakh books in 8 hours, machine Q can print the same number of books in 10 hours while machine R can print them in 12 hours. All the machines are started at 9 A.M. while machine P is closed at 11 A.M. and the remaining two machines complete work. Approximately at what time will the work (to print one lakh books) be finished?**

[A] 11:30 A.M.

[B] 12 noon

[C] 12:30 P.M.

[D] 1:00 P.M.

Answer Option [D]

Explanation:

$$(P + Q + R)\text{'s 1 hour's work} = \left(\frac{1}{8} + \frac{1}{10} + \frac{1}{12}\right) = \frac{37}{120}.$$

$$\text{Work done by P, Q and R in 2 hours} = \left(\frac{37}{120} \times 2\right) = \frac{37}{60}.$$

$$\text{Remaining work} = \left(1 - \frac{37}{60}\right) = \frac{23}{60}.$$

$$(Q + R)\text{'s 1 hour's work} = \left(\frac{1}{10} + \frac{1}{12}\right) = \frac{11}{60}.$$

Now, $\frac{11}{60}$ work is done by Q and R in 1 hour.

So, $\frac{23}{60}$ work will be done by Q and R in $\left(\frac{60}{11} \times \frac{23}{60}\right) = \frac{23}{11}$ hours ≈ 2 hours.

So, the work will be finished approximately 2 hours after 11 A.M., i.e., around 1 P.M.

www.examy.com | www.sample-papers.com | www.examlal.com | www.mock-tests.com.com | www.question-papers.com

Q. 20 **How much time will it take for an amount of Rs. 450 to yield Rs. 81 as interest at 4.5% per annum of simple interest?**

[A] 3.5 years

[B] 4 years

[C] 4.5 years

[D] 5 years

Answer Option [B]

Explanation:

$$\text{Time} = \left(\frac{100 \times 81}{450 \times 4.5}\right) \text{years} = 4 \text{ years.}$$

www.examy.com | www.sample-papers.com | www.examlal.com | www.mock-tests.com.com | www.question-papers.com
