Quiz Date: 27th June 2020

Q1. Gita buys a plot of land for Rs. 96,000. She sells $\frac{2}{5}$ of it at a loss of 6%. She wants to make a profit of 10% on the whole transaction by selling the remaining land. The gain% on the remaining land is
(a) 20
(b) $20\frac{2}{3}$
(c) 14
(d) 7
(e) None of these

Q2. In a bag which contains 40 balls, there are 18 red balls and some green and blue balls. If two balls are picked up from the bag without replacement, then the probability of the first ball being red and second being green is 3/26. Find the number of blue balls in the bag.
(a) 16
(b) 12
(c) 10
(d) 14
(e) 8

Q3. Harvinder and Deepak invest in a business, Rs 8000 and Rs 8250 for 11 months and 9 months respectively. If Deepak earn Rs 2500 less profit than Harvinder. Find difference between amount invested and profit earn by Harvinder?
(a) Rs 8000
(b) Rs 5250
(c) Rs 7000
(d) Rs 6250
(e) Rs 9000

Q4. Average of three numbers is 460 and they are in the ratio of 6 : 8 : 9. If we increase the first by 20% and decrease the second by 10% then to get the average increased by 5%, third number will be increased by ?
(a) $\frac{12}{5}$%
(b) $\frac{25}{3}$%
(c) 7%
(d) $7\frac{1}{3}$%
(e) 8%

Q5. The interest earned when Rs P is invested for four years in a scheme offering 9% p.a. simple interest is more than the interest earned when the same sum (Rs P) is invested for two years in another scheme offering 12% p.a. simple interest, by Rs 360. What is the value of P?
(a) 2000

(b) 3500
(c) 2500
(d) 4000
(e) 3000

Q6. Krishna covers a certain distance by train at 25 km/hr. and the equal distance on foot at 4 km/hr. If the time taken by him for the whole journey be 5 hrs and 48 minutes, how much total distance did he cover ?
(a) 30 km
(b) 40 km
(c) 25 km
(d) 35 km
(e) None of these

Q7. A boat can travel 352 km downstream and 112 km upstream in total 24 hours. If respective ratio of speed of boat in still water to speed of stream is 9: 2, then find total distance travelled by boat in 5 hours in downstream is what percent more than total distance travelled by boat in two hours in upstream?
(a) $292\frac{6}{7}\%$
(b) $284\frac{6}{7}\%$
(c) $296\frac{6}{7}\%$
(d) $288\frac{6}{7}\%$
(e) $284\frac{1}{7}\%$

Q8. Three face cards are drawn at random without replacement from a pack of 52 cards. Find the probability of getting at most 2 red face cards.
(a) $\frac{5}{221}$
(b) $\frac{2}{221}$
(c) $\frac{1}{221}$
(d) $\frac{3}{221}$
(e) $\frac{4}{221}$

Q9. A, B and C alone can finish a work in 10, 12 and 15 days respectively. They managed to complete $\frac{1}{3}$ rd of the work in 3 days. Now they decided to take a leave of 1 day and work alternatively either in pair or individually. Then find the minimum number of days required to finish that task (Given, All of them do not work together)
(a) $7\frac{3}{11}$ days
(b) $8\frac{3}{11}$ days
(c) $7\frac{8}{11}$ days
(d) 8 days
(e) $8\frac{10}{11}$ days

Q10. In two alloys, copper and zinc are present in the ratios of 4:1 and 1:3. 10 kg of 1st alloy 16 kg of 2nd alloy and some of pure copper are melted togther. An alloy was obtained in which the ratio of copper to zinc was 3:2. Find the weight of the new alloy.
(a) 34 kg
(b) 35 kg
(c) 36 kg
(d) 30 kg
(e) None of these

Q11. The digits of a two digit number are reversed, then the original number becomes more than three times the resultant number. Then, find how many two digits natural numbers are there satisfying the above mentioned condition. Exclude numbers with '0' at their unit's digit place.
(a) 8
(b) 6
(c) 9
(d) 11
(e) 3

Q12. A vessel contains X liters of milk. 4 liters of milk is replaced by water completely and the ratio of milk to water is 4 : 1 in the resulting mixture. Then, again 4 liters of the solution is replaced by water completely and the ratio of milk to water in the resulting mixture becomes 16 : 9. Then, find the value of X.
(a) 22 liters
(b) 24 liters
(c) 15 liters
(d) 28 liters
(e) None of the above.

Q13. Tap A can fill the tank in 10 hours and B can fill it in 15 hours. Both are opened simultaneously. Sometimes later tap B was closed, then it took total 8 hours to fill the whole tank. After how many hours B was closed ?
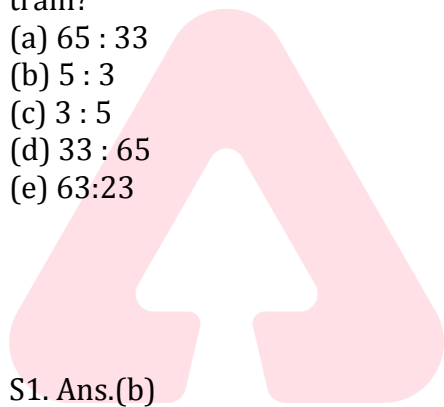(a) 2

(b) 3
(c) 4
(d) 5
(e) None of these

Q14. Anoop sells a book to Mayank at a profit of 20% and Mayank sells this book to Siddharth at a profit of 25%. Now Siddharth sells this book at a loss of 10% to Shishir. At what percentage loss should Shishir sell this book so that his SP becomes equal to Anoop's CP?
(a) 36.68%
(b) 25.92%
(c) 48.66
(d) Cannot be determined
(e) None of these

Q15. A person travels 490 km in 6 hours in two stages. In the first part of the journey, he travels by bus at the speed of 60 km per hr. In the second part of the journey, he travels by train at the speed of 100 km per hr. What is the ratio between distances travelled by bus and train?
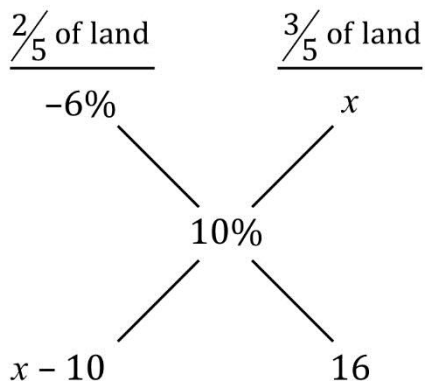(a) 65 : 33
(b) 5 : 3
(c) 3 : 5
(d) 33 : 65
(e) 63:23

Solutions

S1. Ans.(b)
Sol.
Use allegation

$$\frac{2}{5} \text{ of land} \qquad \frac{3}{5} \text{ of land}$$

$$-6\% \qquad\qquad x$$

$$10\%$$

$$x - 10 \qquad\qquad 16$$

$$\frac{x-10}{16} = \frac{2}{3}$$
$$3x - 30 = 32$$
$$3x = 62$$

$x = \frac{62}{3}\% = 20\frac{2}{3}\%$

S2. Ans. (b)
Sol. Total balls = 40
Red balls = 18
Let green balls are x
Then, $\frac{18}{40} \times \frac{x}{39} = \frac{3}{26}$
$\Rightarrow x = 10$
$\therefore$ No. of blue balls = $40 - 28 = 12$

S3. Ans.(a)
Sol.
Ratio of profit earned by Harvinder and Deepak
= 8000 × 11 : 8250 : 9
= 32 : 27
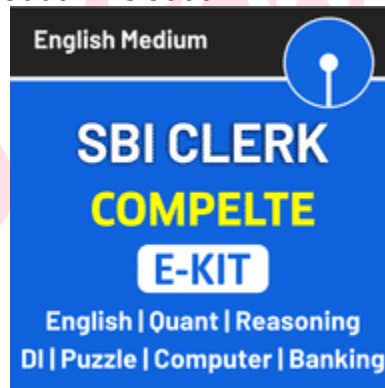Let profit earned by Harvinder and Deepak are 32x and 27x respectively.
Atq,
32x – 27x = 2500
 x = 500
32x = 16000
Required difference = 16000 – 8000 = Rs 8000

S4. Ans.(b)
Sol.
Let first, second and third number is 6x, 8x and 9x respectively.
ATQ,
$\frac{6x+8x+9x}{3} = 460$
x = 60
First → 360, Second →480, Third → 540
Let z be increased % in third number.
ATQ,
$\frac{360 \times 120}{100} + \frac{480 \times 90}{100} + \frac{540 \times (100+z)}{100} = 3 \times \frac{460 \times 105}{100}$
$Z = \frac{25}{3}$

Required % increment $= \frac{25}{3}$ %

S5. Ans. (e)

Sol. $\frac{P \times 4 \times 9}{100} - \frac{P \times 2 \times 12}{100} = 360$

$\frac{12P}{100} = 360$

P = 3000 Rs.

S6. Ans. (b)

Sol. Total distance = x km

Distance by train $= \frac{x}{2}$ km

Distance by Feet $= \frac{x}{2}$ km

Time taken to cover $\frac{x}{2}$ by train $= \frac{x}{50}$ hours

Time taken to cover $\frac{x}{2}$ by foot $= \frac{x}{8}$ hours

$\frac{x}{50} + \frac{x}{8} = 5\frac{48}{60}$

$x = 40$km

S7. Ans(a)

Sol.

Let speed of boat in still water be 9s and speed of stream be 2s

ATQ –

$\frac{352}{(9s+2s)} + \frac{112}{(9s-2s)} = 24$

$\frac{352}{11s} + \frac{112}{7s} = 24$

32 + 16 = 24s

s = 2 km/hr

Speed of boat in still water = $9 \times 2 = 18 \ km/hr$

Speed of stream = $2 \times 2 = 4 \ km/hr$

Total distance travel by boat in 5 hours in downstream = $(18 + 4) \times 5 = 110$ km

Total distance travel by boat in 2 hours in upstream = $(18 - 4) \times 2 = 28$ km

Required percentage $= \frac{110-28}{28} \times 100$

$= 292\frac{6}{7}$ %

S8. Ans.(b)

Sol. Required probability $= \frac{6_{c_0} \times 6_{c_3}}{52_{c_3}} + \frac{6_{c_1} \times 6_{c_2}}{52_{c_3}} + \frac{6_{c_2} \times 6_{c_1}}{52_{c_3}}$
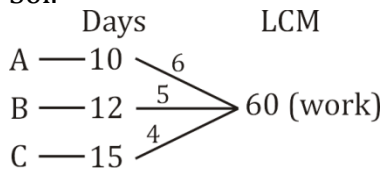
$\Rightarrow \frac{2}{2210} + \frac{9}{2210} + \frac{9}{2210}$

$\Rightarrow \frac{20}{2210}$

$\Rightarrow \frac{2}{221}$

S9. Ans.(e)

Sol.

Days   LCM

A —— 10
B —— 12   60 (work)
C —— 15

with multipliers 6, 5, 4

There are three possibilities.

(I) $\boxed{A + B}$ $\boxed{C}$ $\boxed{A + B}$ $\boxed{C}$ ....soon

(II) $\boxed{A + C}$ $\boxed{B}$ $A + C$ B ....soon

(III) $\boxed{B + C}$ $\boxed{A}$ $\boxed{B + C}$ $\boxed{A}$ ....soon

To find minimum number of days

A+B   C   A+B   C

 11   4   11   4

Days $= 4 + \dfrac{10}{11} = 4\dfrac{10}{11}$ days

Required minimum days $= 4 + 4\dfrac{10}{11} = 8\dfrac{10}{11}$ days

S10. Ans.(b)
Sol. Let the amount of pure copper = x kg.
Pure copper + copper in 1st alloy + copper in 2nd alloy
= Copper in 3rd alloy
$\Rightarrow x + \dfrac{4}{5} \times 10 + \dfrac{1}{4} \times 16 = \dfrac{3}{5}(10 + 16 + x)$
$\Rightarrow 12 + x = \dfrac{3}{5}(26 + x)$
$\Rightarrow x = 9$ kg.
∴weight of new alloy = 10 + 16 + 9 = 35 kg.

S11. Ans.(b)
Sol. Let the digit at tens place & units place be 'x' & 'y' respectively
So, original Number = 10 × x + y
Resultant Number = 10 × y + x
ATQ,
10 × x + y > 3(10×y + x)
10x + y > 30y + 3x
7x > 29y – (i)

Through substitution when y = 1, then x can take any integral more than 4 and less than 10 and when y = 2, then x can take only one integral value that is 9.
So, required answer will 51, 61, 71, 81, 91, & 92.

S12. Ans. (e)
Sol. When milk is replaced by the water then,
Quantity of milk in the mixture = $\frac{4x}{5}$ liters
Quantity of water in the mixture = $\frac{x}{5}$ liters

When mixture is replaced by water then,
Quantity of milk in the resulting mixture = $(\frac{4x}{5} - 4 \times \frac{4}{5})$ liters
Quantity of water in the resulting mixture = $(\frac{x}{5} - 4 \times \frac{1}{5} + 4)$ liters
ATQ,
$$\frac{\left(\frac{4x}{5} - \frac{16}{5}\right)}{\left(\frac{x}{5} - \frac{4}{5} + 4\right)} = \frac{16}{9}$$
$$\frac{\left(\frac{4x-16}{5}\right)}{\left(\frac{x+16}{5}\right)} = \frac{16}{9}$$
⇒ 36x - 144 = 16x + 256
x = 20 liters.

S13. Ans. (b)
Sol.   Let required time = x
$\therefore \frac{8}{10} + \frac{x}{15} = 1$
$x = 3$

S14. Ans. (b)
Sol.   Anand   Mayank   Siddhartha   Sishir
        100 → 120   →   150   → 135
Required % = $\frac{135-100}{135} \times 100$
$= \frac{35}{135} \times 100 = 25.92\%$

S15. Ans (d)
Sol. Let the distance travelled by bus is d
$\frac{d}{60} + \frac{490-d}{100} = 6$
$\frac{5d+1470-3d}{300} = 6$
$2d + 1470 = 1800$
$2d = 330$
$d = 165$ km
distance travelled by train $= 490 - 165$
$= 325$
Required ratio $= 165 : 325$

= 33 : 65

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