Quiz Date: 29th April 2020

Q1. At his usual rowing rate, Viplav can travel 12 miles downstream in a river in 6 hours less than its takes him to travel the same distance upstream. But if he could double his usual rowing rate for his 24 miles round trip, the downstream 12 miles would then take only one hour less than the upstream 12 miles. What is the speed of the current in miles per hour?
(a) 4/3
(b) 5/3
(c) 7/3
(d) 8/3
(e) None of these

Q2. The angles of a quadrilateral are in the ratio of 2 : 4 : 7 : 5. The smallest angle of the quadrilateral is equal to the smallest angle of a triangle. The biggest angle of the triangle is twice the smallest angle of the triangle. What is the second largest angle of the triangle?
(a) 80°
(b) 60°
(c) 120°
(d) Cannot be determined
(e) None of these

Q3. A shopkeeper sells notebooks at the rate of Rs. 45 each and earns a commission of 4%. He also sells pencil box at the rate of Rs. 80 each and earns a commission of 20%. How much amount of commission will he earn in two weeks if he sells 10 notebooks and 6 pencil boxes a day?
(a) Rs. 1,956
(b) Rs. 1,586
(c) Rs. 1,496
(d) Rs 1,596
(e) Rs 1,869

Q4. The population of vultures in a particular locality is decreases by a certain rate (compounded annually). If the current population of vultures be 29160 and the ratio of population after second year to after 3rd year be 10 : 9. What was the population of vultures 3 years ago?
(a) 30000
(b) 35000
(c) 40000
(d) 50000
(e) 55000

Q5. Dutta Ram lends equal sum of money at the same rate of interest to A and B. The money lends to A becomes twice of the original amount in just four years at simple interest. While Dutta Ram lends to B for the first two years at compound interest and amount obtained after two years from B (principal+C.I.) is again lent to B at same rate of interest for the rest two

years at simple interest. If the difference between the amount of A and B after 4 years is Rs. 2750. What is the amount of money that Dutta Ram lends to each one?
(a) Rs. 40000
(b) Rs. 6000
(c) Rs. 8000
(d) Rs. 80000
(e) Rs. 8400

Q6. Rohit can do a piece of work in 12 days, Roshan can do the same work in 8 days, and Ritesh can do the same job in 4/5th time required by Rohit and Roshan both to complete the work together. Rohit and Roshan work together for 3 days, then Ritesh completes the job. How many days did Ritesh work?

(a) $2\frac{1}{25}$

(b) 4

(c) 2

(d) $1\frac{11}{25}$

(e) $3\frac{11}{25}$
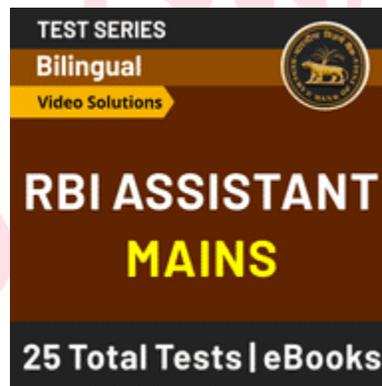
Q7. Ram sells onions as part time business. Due to recent shortfall in the supply of onions, he doubles his selling price despite the cost price remains same for him due to a fixed contract. He realizes that his profit has tripled. Find the original profit percent.

(a) $\frac{200}{3}\%$

(b) 100%

(c) 120%

(d) $105\frac{1}{3}\%$

(e) None of these

Q8. The working efficiency of Rohit is three fourth of that of Rohan. Rohit can complete a certain work in 16 days. They started working together and after some days Rohit was replaced by a third person Rony whose efficiency is four fifth of Rohan's efficiency and the remaining work is completed in 2 days. Find for what time Rohit worked with Rohan?

(a) 8.4 days
(b) 3.8 days
(c) 4.8 days
(d) 2.4 days
(e) 4.2 days

Q9. Three friends x, y and z enter into a business by investing the amount in the ratio of 3 : 4 : 5. After 5 month y withdraws Rs. 5000 and at the same time x invests an additional amount equal to two-fifth of the initial amount invested by z. After 10 months if profit earned by x is equal to the total profit earned by y and z together than find the initial amount invested by z.
(a) Rs. 2500
(b) Rs. 2000
(c) Rs. 3000
(d) Rs. 5000
(e) Rs. 4000

Q10. Three persons Dev, Deepak and Dudhiya Singh run a race. The probability of completing the race by them is 1/3, 2/5 and 4/5 respectively. Find the probability that at least two persons complete the race.
(a) 12/25
(b) 38/75
(c) 17/35
(d) 26/49
(e) 37/75

Directions (11 – 15): What approximate value should come in the place of question (?) marks in the given question:

Q11.   540.05% of 9.99 + 14.89 × 4.02 = ? × 2
(a) 51
(b) 53
(c) 57
(d) 60
(e) 62

Q12. $\sqrt[3]{215.99 \times 8.07} + \sqrt{16.11 \times 24.82} = \sqrt{?} \times 4$
(a) 16
(b) 256
(c) 4
(d) 512
(e) 216

Q13. $3.89 \times \sqrt[3]{1727.99} - \frac{11.92 \times 14.11}{6.91 \times 2.01} = \sqrt{?} + \sqrt{168.87}$
(a) 676
(b) 324

(c) 529
(d) 729
(e) 1024

Q14.   ?% of 1399.87 + $(49.88)^2$ = 269.99 + 19.99% of 11850.11
(a) 7
(b) 8
(c) 5
(d) 10
(e) 12

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Q15. $\frac{728.87}{(2.99)^{3.99}} + ? = \frac{624.92 \times 4.88}{(4.89)^2}$
(a) 112
(b) 116
(c) 119
(d) 121
(e) 123

Solutions

S1. Ans.(d)
Sol.
Let speed of current in miles/hr = s
And speed of boat in still water = v miles/hr
According to first condition,
$\frac{12}{v-s} - \frac{12}{v+s} = 6$ ... (i)
And, according to second condition
$\frac{12}{2v-s} - \frac{12}{2v+s} = 1$ ... (ii)
Solving (i) and (ii), we get
$s = 0, \quad \frac{8}{3}$
    ✗   ✓
∴ Required answer = $2\frac{2}{3}$ miles/hr

S2. Ans.(b)
Sol.

Smallest angle of quadrilateral

$$= \frac{2}{2+4+7+5} \times 360$$

$$= 40$$

$\therefore$ Second largest angle of triangle

$$= 180 - (40 + 80)$$

$$= 60$$

S3. Ans.(d)
Sol.

Total commission earned by shopkeeper

$$= \left(10 \times 45 \times \frac{4}{100} + 6 \times 80 \times \frac{20}{100}\right) \times 14$$

$$= (18 + 96) \times 14$$

$$= 1596$$

S4. Ans.(c)
Sol.

Ratio = 10 : 9

$\therefore \Rightarrow \frac{10-9}{10} \times 100 = 10\%$

A/q, $p \left(1 - \frac{10}{100}\right)^3 = 29160$

$\therefore$ P = 40000

S5. Ans.(c)
Sol.

For A, $P = \frac{P \times r \times 4}{100}$

Or, r = 25%

For B, amount after 2 years

$$= P\left(1 + \frac{25}{100}\right)^2 = \frac{25}{16}P$$

Amount after 4 years $= \frac{25}{16}P \times \frac{25 \times 2}{100} + \frac{25}{16}P$

$$= \frac{25}{32}P + \frac{25}{16}P = \frac{75}{32}P$$

A/q, $\frac{75}{32}P - 2p = 2750$

Or, P $= \frac{2750 \times 32}{11} = Rs. 8000$

S6. Ans.(d)
Sol.

(Rohit + Roshan) per day work = $\frac{1}{12} + \frac{1}{8} = \frac{5}{24}$

No. of days in which Rohit and Roshan

together can do the work = $\frac{24}{5}$

Time taken by Ritesh = $\frac{4}{5} \times \frac{24}{5} = \frac{96}{25}$

Ritesh per day work = $\frac{25}{96}$

Work done Rohit and Roshan in 3 days = $\frac{3 \times 5}{24} = \frac{5}{8}$

Work done by Ritesh = $1 - \frac{5}{8} = \frac{3}{8} = \frac{36}{96}$

No of days Ritesh worked = $\frac{\frac{36}{96}}{\frac{25}{96}} = 1\frac{11}{25}$ days.

S7. Ans.(b)
Sol.
Let original selling price be
SP and cost price be CP
Then,
2SP – CP = 3 (SP – CP)
or, SP = 2CP
Hence, original profit% = 100%

S8. Ans.(c)
Sol.
Let Rohan worked for x day with Rohit.

$\therefore \left(\frac{1}{16} + \frac{1}{12}\right)x + \left(\frac{1}{12} + \frac{1}{15}\right) \times 2 = 1$

$\Rightarrow \frac{7x}{48} = 1 - \frac{3}{10}$

$\Rightarrow x = 4.8$ days

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S9. Ans.(a)
Sol. Let initial sum invested by all the three friends x, y and z were 3a, 4a and 5a respectively

$\therefore$ (x's profit) : (y's profit) : (z's profit)

$= (3a \times 5 + 5a \times 5) : (4a \times 5 + (4a - 5000) \times 5) : 5a \times 10$

$= 4a : 4a - 2500 : 5a$

ATQ,

$4a = 9a - 2500$

$\Rightarrow a = 500$

$\therefore$ Required answer = Rs. 2500

S10. Ans.(b)
Sol.

Possible cases – 1. When Dev and Deepan complete the race $= \frac{1}{3} \times \frac{2}{5} \times \frac{1}{5}$

2. When Dev and Dudhiya Singh complete the race $= \frac{1}{3} \times \frac{4}{5} \times \frac{3}{5}$

3. When Deepak and Dudhiya Singh complete the race $= \frac{2}{3} \times \frac{2}{5} \times \frac{4}{5}$

4. When all of them complete the race $= \frac{1}{3} \times \frac{2}{5} \times \frac{4}{5}$

Required probability

$= \frac{1}{3} \times \frac{2}{5} \times \frac{1}{5} + \frac{2}{5} \times \frac{4}{5} \times \frac{2}{3} + \frac{1}{3} \times \frac{3}{5} \times \frac{4}{5} + \frac{1}{3} \times \frac{2}{5} \times \frac{4}{5}$

$= \frac{2 + 16 + 12 + 8}{75}$

$= \frac{38}{75}$

S11. Ans.(c)
Sol.

$\frac{10 \times 540}{100} + 15 \times 4 = ? \times 2$

$54 + 60 = ? \times 2$

$\frac{114}{2} = ?$

$57 = ?$

S12. Ans.(b)
Sol.

$\sqrt[3]{216 \times 8} + \sqrt{16 \times 25} = \sqrt{? \times 4}$

$6 \times 2 + 4 \times 5 = \sqrt{? \times 4}$

$\frac{32}{2} = \sqrt{?}$

$? = 256$

S13. Ans.(c)
Sol.

$4 \times 12 - \frac{12 \times 14}{7 \times 2} = \sqrt{?} + 13$

$48 - 6 \times 2 = \sqrt{?} + 13$

$36 - 13 = \sqrt{?}$

$23 = \sqrt{?}$

$? = 529$

S14. Ans.(d)
Sol.

?% of $1400 + (50)^2 = 270 + 20\%$ of 11850

?% of $1400 + 2500 = 270 + \dfrac{11850}{5}$

?% of $1400 = 2640 - 2500$

?% of $1400 = 140$

$? = 10$

S15. Ans.(b)
Sol.

$\dfrac{729}{3^4} + ? = \dfrac{625 \times 5}{5^2}$

$\dfrac{729}{81} + ? = 125$

$? = 116$

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