

Quiz Date: 25th April 2020

Directions (1-5): Refer to the table given below and answer the given questions.

Table shows the 5 colonies and total population and percentage of males, females and children in each colony in year 2016. Some data are missing, find the missing data to answer the given questions.

Colony	Total population	Percentage of males	Percentage of females	Percentage of children
A	2400	25%	—	—
B	—	—	40%	20%
C	—	50%	20%	—
D	800	—	—	16%
E	—	—	24%	36%

Note: Don't treat children as male or female. Treat them separately.

Q1. If the ratio of population of females and children in colony A in year 2016 is 3 : 7, and females in colony A in year 2017 are increased by 20% from that of in year 2016. Then find the total number of males and children in colony A in year 2017 so that overall population in year 2017 is same as that of in year 2016?

- (a) 1752
- (b) 1852
- (c) 2752
- (d) 3200
- (e) 1527

Q2. If number of children in colony C in year 2016 is 180 and ratio of males and females in colony D in year 2016 is 1 : 2. Then find the difference of males in colony C and colony D?

- (a) 96
- (b) 86
- (c) 76
- (d) 55
- (e) 67

Q3. If total population of colony B and colony C together in year 2016 is 25% more than the total population of colony A in year 2016 and ratio of total population of colony B and colony C in year 2016 is 2 : 3. Then find the ratio of males in colony B to children in colony C in year 2016 ?

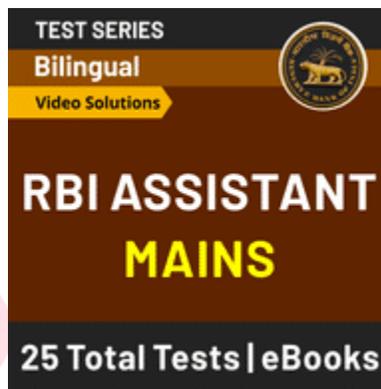
- (a) 9 : 8
- (b) 8 : 9
- (c) 2 : 3
- (d) 3 : 5
- (e) 3 : 2

Q4. If ratio of males of colony D in year 2016 to the females in colony A in year 2016 is 2 : 5 and population of children in colony A is increased by 20% in year 2017 from that of in year 2016. Then find the total population of children in year 2017 in colony A ?

- (a) 2000
- (b) 1200
- (c) 1500
- (d) cannot be determined
- (e) None of these

Q5. If ratio of total population of colony C to colony E in year 2016 is 5 : 4. Then number of males in colony E in year 2016 is what percent more or less than the number of children in colony C in year 2016 ?

- (a) 5.67%
- (b) 12%
- (c) 10%
- (d) 3.334%
- (e) 6.67%



Directions (6 - 10): What approximate value will come in the place of question (?) mark?

Q6. $66.99\% \text{ of } 1799.98 + (?)^2 + 6.98\% \text{ of } 599.99 = (37.98)^2$

- (a) 10
- (b) 14
- (c) 18
- (d) 22
- (e) 26

Q7. $\frac{17.99 \times ?}{28.01} + 124.99\% \text{ of } 83.98 - 16.98\% \text{ of } 299.89 = (5.99)^3$

- (a) 280
- (b) 308
- (c) 336
- (d) 252
- (e) 224

Q8. $34.97 \times ? + 27.98 \times 14.99 - 55.98 = 13.98\% \text{ of } 5599.87$

- (a) 12
- (b) 16
- (c) 19
- (d) 25
- (e) 29

Q9. $\frac{?}{47.98} + 25.98\% \text{ of } 249.89 - 19.99\% \text{ of } 74.98 = (7.99)^2$

- (a) 864
- (b) 816
- (c) 768
- (d) 720
- (e) 672

Q10. $587.99 + 233.99 - ? = 13.98\% \text{ of } 4999.93$

- (a) 98
- (b) 84
- (c) 122
- (d) 72
- (e) 108

Q11. A man invested in two different schemes A & B and investment in scheme A is 25% more than that of scheme B. Scheme A offered SI at the rate of $(R - 2.5)\%$ for two year while scheme B offered SI at the rate of $(R + 5)\%$ for three years and ratio of interest received by man from scheme A to that of scheme B is 5 : 12. Find the total interest received by man, if he will invest Rs 2250 at the rate of $2R\%$ per annum on CI for two years?

- (a) 920 Rs
- (b) 990 Rs
- (c) 960 Rs
- (d) 900 Rs
- (e) 850 Rs

Q12. 21 women can complete a piece of work in 20 days by working 10 hours a day. In how many days 21 men will complete the work by working 8 hrs a day if 3 men work as much as 5 women?

- (a) 18 days
- (b) 15 days
- (c) 16 days
- (d) 12 days
- (e) 10 days

Q13. The speed of a boat in still water is 5 km/hr and speed of current is 3 km/hr. If time taken to cover a certain distance upstream is 8 hours then how long will the boat take to cover the same distance in downstream?

- (a) 2.5 hrs.
- (b) 3 hrs.

- (c) 2 hrs.
- (d) 3.5 hrs.
- (e) 1.5 hrs.

Q14. On Rs. 1250 invested at a simple interest rate at 2 per cent per annum, Rs 250 is obtained as interest in certain years. In order to earn Rs 1000 as interest on Rs 2000 in the same number of years, what should be the rate of simple interest?

- (a) 3%
- (b) 4%
- (c) 5%
- (d) 6%
- (e) None of these

Q15. P, Q and R take $(x - 28)$ days, $(x - 18)$ days and $(x - 8)$ days respectively to complete a job. The three work in a rotation to complete the job with only 1 person working on a day. Who should start the job so that the job is completed in the least possible time?

- (a) P
- (b) Q
- (c) R
- (d) Any one of the three
- (e) Can't be determined



Solutions

S1. Ans.(a)

Sol.

Let population of females and children in colony A be $3x$ and $7x$ respectively.

$$\therefore 10x = \frac{75}{100} \times 2400$$

$$x = 180$$

$$\text{No. of females in colony A in year 2017} = 540 \times \frac{120}{100}$$

$$= 648$$

$$\therefore \text{Required no. of males and children together in colony A in 2017} = 2400 - 648$$

$$= 1752$$

S2. Ans.(c)

Sol.

$$\text{Total no. of males in colony C} = \frac{50}{100} \times \frac{100}{30} \times 180 \\ = 300$$

$$\text{No. of males in colony D} = \frac{1}{3} \times \frac{84}{100} \times 800 \\ = 224$$

$$\therefore \text{Required difference} = 300 - 224 \\ = 76$$

S3. Ans.(b)

Sol.

Total population of males in colony B in 2016

$$= \frac{40}{100} \times \frac{2}{5} \times \frac{125}{100} \times 2400 \\ = 480$$

$$\text{And population of children in colony C in 2016} = \frac{30}{100} \times \frac{3}{5} \times \frac{125}{100} \times 2400 \\ = 540$$

$$\therefore \text{Required ratio} = \frac{480}{540} = 8 : 9$$

S4. Ans.(d)

Sol.

Let males in colony D = 2x

Females in colony A = 5x

Let population of children in colony A in 2016 = a%

$$\therefore \text{No. of children in colony A in 2017} = \frac{6a}{5} \%$$

From here we cannot find the required answer

S5. Ans.(e)

Sol.

Let total population of colony C = 5x

& that of colony E = 4x

$$\text{Required Percent} = \frac{0.4 \times 4x - 0.3 \times 5x}{0.3 \times 5x} \times 100$$

$$= \frac{100}{15} \% = 6.67\%$$

S6. Ans(b)

$$\text{Sol. } \frac{67}{100} \times 1800 + (?)^2 + \frac{7}{100} \times 600 \approx (38)^2$$

$$1206 + (?)^2 + 42 \approx 1444$$

$$(?)^2 \approx 1444 - 1248$$

$$(?)^2 \approx 196$$

$$? \approx 14$$

S7. Ans(d)

$$\text{Sol. } \frac{18 \times ?}{28} + \frac{125}{100} \times 84 - \frac{17}{100} \times 300 \approx (6)^3$$

$$\frac{18 \times ?}{28} \approx 216 - 54$$

$$? \approx \frac{162 \times 28}{18}$$

$$? \approx 252$$

S8. Ans(a)

$$\text{Sol. } 35 \times ? + 28 \times 15 - 56 \approx \frac{14}{100} \times 5600$$

$$35 \times ? \approx 784 + 56 - 420$$

$$? \approx \frac{420}{35}$$

$$? \approx 12$$



S9. Ans(e)

$$\text{Sol. } \frac{?}{48} + \frac{26}{100} \times 250 - \frac{20}{100} \times 75 \approx (8)^2$$

$$\frac{?}{48} \approx 64 + 15 - 65$$

$$\frac{?}{48} \approx 14$$

$$? \approx 672$$

S10. Ans(c)

$$\text{Sol. } 588 + 234 - ? \approx \frac{14}{100} \times 5000$$

$$? \approx 822 - 700$$

$$? \approx 122$$

S11. Ans.(b)

Sol.

Let man invested Rs 100x in scheme B
So, amount invested in scheme A = 125x

ATQ,

$$\frac{125x \times 2 \times (R-2.5)}{100x \times 3 \times (R+5)} = \frac{5}{12}$$

$$\frac{5R-12.5}{6R+30} = \frac{5}{12}$$

$$60R-150 = 30R+150$$

$$30R = 300$$

$$R = 10\%$$

$$120R - 300 = 60R + 300$$

$$60R = 600$$

$$R = 10\%$$

$$\text{Equivalent rate of interest for two year at rate } 2R = 20 + 20 + \frac{20 \times 20}{100}$$

$$= 44\%$$

Required compound interest

$$= 2250 \times \frac{44}{100}$$

$$= 990 \text{ Rs.}$$

S12. Ans.(b)

Sol.

$$\text{Given, } 3m = 5w$$

$$\text{Hence, } 21m = 35w$$

Now,

$$21w \times 20 \times 10 = 35w \times 8 \times d$$

$$\text{or, } d = \frac{21 \times 20 \times 10}{35 \times 8}$$

$$d = 15 \text{ days.}$$

S13. Ans.(c)

Sol.

$$\text{Total distance covered in upstream in 8 hr} = 8(5 - 3) = 16 \text{ km}$$

$$\text{Required time (in downstream)} = \frac{16}{(5+3)} = \frac{16}{8} = 2 \text{ hrs.}$$

S14. Ans (c)

$$\text{Sol. } 250 = \frac{1250 \times 2 \times t}{100}$$

$$t = 10 \text{ years}$$

$$1000 = \frac{2000 \times 10 \times r}{100}$$

$$r = 5\%$$

S15. Ans.(a)

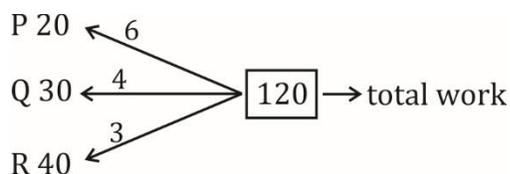
Sol.

Here, Let $x=48$ (we can assume any value here)

$$P \rightarrow 48 - 28 = 20 \text{ days}$$

$$Q \rightarrow 48 - 18 = 30 \text{ days}$$

$$R \rightarrow 48 - 8 = 40 \text{ days}$$



If we want to do the work in least possible time then P should start the work because in 3 day they complete total 13 units of work and in 27 days they complete 117 units of work. Remaining 3 unit is completed by P in least time

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