

Quiz Date: 27th March 2020

Directions (1-5): In the following series find the term which is placed incorrectly.

Q1. 0, 4, 19, 48, 100, 180, 294

- (a) 19
- (b) 100
- (c) 294
- (d) 48
- (e) 180

Q2. 1, 2, 7, 34, 202, 1420

- (a) 7
- (b) 34
- (c) 202
- (d) 2
- (e) 1

Q3. 823, 724, 647, 592, 559, 549

- (a) 549
- (b) 647
- (c) 559
- (d) 592
- (e) 724

Q4. 1, 4, 11, 34, 102, 304, 911

- (a) 11
- (b) 911
- (c) 102
- (d) 34
- (e) 304

Q5. 5, 8, 20, 42, 124, 246, 736

- (a) 20
- (b) 124
- (c) 8
- (d) 42
- (e) 736

Q6. Two filling pipes A and B can fill an empty tank in 16 hours and 24 hours respectively. Pipe A start filling alone and after 4 hours pipe B was also opened. When 50% of tank was filled, a leak was developed which could make empty the completely filled tank in 32 hours. It took 6 hours to find and close the leak. In how much time the tank was filled from start?

- (a) 11 hr.
- (b) 15 hr.

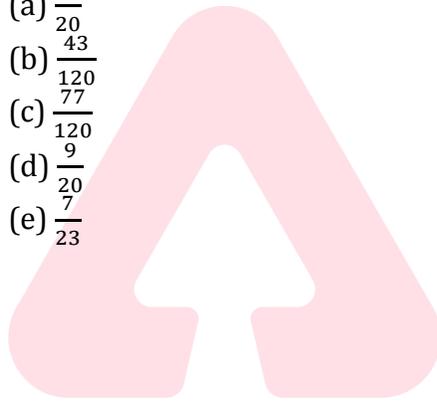
- (c) 13 hr.
- (d) 12.4 hr.
- (e) 16 hr.

Q7. A mixture of 240 liters contains milk and water in the ratio of 5 : 3. A milkman mixes some more water in it and claim to sell it at cost price. If cost price of pure milk is Rs. 20/liter and water is freely available and milkman made a total profit of 80% on cost price of pure milk then find amount of water he mixed in the milk.

- (a) 40 liters
- (b) 30 liters
- (c) 20 liters
- (d) 35 liters
- (e) 45 liters

Q8. Two bags contain 4 and 16 flags respectively. Two flags in the first bag and four in the second bag are red. If a bag is chosen randomly and two flags are drawn at random from it, what is the probability that at least one flag is red?

- (a) $\frac{11}{20}$
- (b) $\frac{43}{120}$
- (c) $\frac{77}{120}$
- (d) $\frac{9}{20}$
- (e) $\frac{7}{23}$



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Q9. Three students Akash, Virendra and Sagar got Rs. P, Rs. (P+2400) and Rs. (P+4400) as their scholarship respectively. Akash and Virendra deposited their half of scholarship on CI at the rate of 10% and 20% respectively for two years in two different schemes. Sagar deposited 60% of his scholarship on simple interest at the rate of 15% p.a. for three years in another scheme. If Sagar got Rs. 132 more as interest got by Akash and Virendra together, then find the scholarship got by Sagar?

- (a) 12000 Rs.
- (b) 10000 Rs.
- (c) 14400 Rs.
- (d) 14000 Rs.
- (e) 18000 Rs.

Q10. P, Q and R enter into a partnership and invested some amount. After one year, P double its investment, Q increase its investment by $33\frac{1}{3}\%$ and R increase its investment by 20%. In the third year P and Q withdraw their investments and S joins the partnership with R. After three year they got profit in the ratio of 12 : 14 : 17 : 8 (P : Q : R : S). If difference between initial investment of Q and R is 1150. Then Find out the total initial investment made by P and S together?

- (a) Rs. 12100
- (b) Rs. 14400
- (c) Rs. 13800
- (d) Rs. 15000
- (e) None of these

Directions (11-15): Study the following information and answer the related questions to it. In CTET exam, a certain number of people were selected through various stages (written, group discussion and personal interview) and finally $\frac{100}{3}\%$ of total candidates who appeared for the written exam were selected. 25% of total students who appeared for written exam were from UP, $\frac{50}{3}\%$ of total were from Delhi, $\frac{100}{3}\%$ of total were from Haryana, Rajasthan and Bihar together and rest were from MP and Panjab together. Ratio of male to female in those who appeared for written exam from UP and Delhi was 2 : 1 and 3 : 2 respectively.

Ratio of students who appeared for written exam from Haryana, Rajasthan and Bihar respectively was 2 : 1 : 2. Ratio of students from MP and Punjab who were appeared in the written exam was 1 : 2. Number of students who appeared in written exam from Punjab was 13700. The total no. of students who finally got selected in CTET were 40% from UP, 25% from Delhi, 20% from Haryana, Rajasthan and Bihar together and rest were from MP and Punjab together.

Q11. Find the total no. of students from UP, Bihar and Rajasthan together who appeared for written exam.

- (a) 32990
- (b) 36990
- (c) 38990
- (d) 34990
- (e) 39690

Q12. If 80% out of total students who appeared for written exam cleared the written exam and then 50% out of them were short listed for personal interview on the basis of their performance in group discussion, then find the difference between total no. of students who were shortlisted for interview to the total candidates who got finally selected.

- (a) 5480
- (b) 5840
- (c) 5280
- (d) 4850
- (e) 5680

Q13. What is the total no. of male students who appeared in the written exam of CTET from UP and Delhi together?

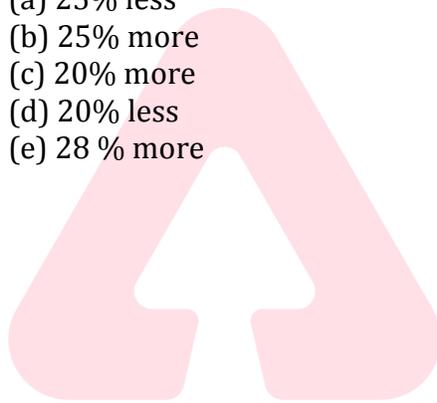
- (a) 18920
- (b) 20920
- (c) 22190
- (d) 21920
- (e) 24920

Q14. Total no. of students who got final selection from UP is what percent of that from Delhi?

- (a) 140%
- (b) 150%
- (c) 160%
- (d) 155%
- (e) 145%

Q15. Total no. of students who appeared in written exam from MP is what percent more or less than that from Rajasthan?

- (a) 25% less
- (b) 25% more
- (c) 20% more
- (d) 20% less
- (e) 28 % more



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Solutions

S1. Ans.(a)

Sol.

$$1^3 - 1^2 = 0$$

$$2^3 - 2^2 = 4$$

$$3^3 - 3^2 = 18$$

$$4^3 - 4^2 = 48$$

$$5^3 - 5^2 = 100$$

And so on...

S2. Ans.(c)

Sol. Series is

$$1 \times 3 - 1 = 2$$

$$2 \times 4 - 1 = 7$$

$$7 \times 5 - 1 = 34$$

$$34 \times 6 - 1 = 203$$

S3. Ans.(a)

Sol. Series is

$$823 - 99 = 724$$

$$724 - 77 = 647$$

$$647 - 55 = 592$$

$$592 - 33 = 559$$

$$559 - 11 = 548$$

S4. Ans.(c)

Sol.

$$1 \times 3 + 1 = 4$$

$$4 \times 3 - 1 = 11$$

$$11 \times 3 + 1 = 34$$

$$34 \times 3 - 1 = 101...$$

S5. Ans.(a)

Sol.

Series is $\times 2-2, \times 3-2, \times 2-2, \times 3-2...$

S6. Ans.(c)

Sol.

Let B was opened for x hours before leak was developed.

$$\therefore \frac{(4+x)}{16} + \frac{x}{24} = \frac{50}{100}$$

$$\Rightarrow 12 + 3x + 2x = \frac{1}{2} \times 48$$

$$\Rightarrow 5x = 12$$

$$\Rightarrow x = 2.4 \text{ h}$$

6 hours work of all the three taps

$$= \frac{6}{16} + \frac{6}{24} - \frac{6}{32}$$

$$= \frac{36+24-18}{96} = \frac{42}{96}$$

$$= \frac{7}{16}$$

$$\text{Remaining part of tank} = 1 - \left(\frac{1}{2} + \frac{7}{16} \right) = \frac{1}{16}$$

This part will be filled by filling pipes A and B

$$\therefore \text{Required time} = 4 + 2.4 + 6 + \frac{1}{16} \times \left(\frac{24 \times 16}{24+16} \right)$$

$$= 12.4 + 0.6$$

$$= 13\text{h}$$

S7. Ans.(b)

Sol.

$$\text{Pure milk in mixture} = \frac{5}{8} \times 240 = 150 \text{ ltr}$$

$$\text{Total C.P. of pure milk} = 150 \times 20 = 3000 \text{ rupees}$$

Let x ltr water is added

$$\therefore \text{Total S.P. of mixture} = (240 + x) \times 20$$

ATQ,

$$\frac{(240+x) \times 20 - 3000}{3000} \times 100 = 80$$

$$\Rightarrow 480 + 2x - 300 = 240$$

$$\Rightarrow 2x = 240 - 180$$

$$\Rightarrow 2x = 60$$

$$\Rightarrow x = 30 \text{ ltr}$$

S8. Ans.(c)

Sol.

ATQ

$$\Rightarrow \frac{1}{2} \times \left[\left(\frac{2C_2 + 2C_1 \times 2C_1}{4C_2} \right) + \left(\frac{4C_2 + 4C_1 \times 16C_1}{16C_2} \right) \right]$$

$$\Rightarrow \frac{1}{2} \times \left[\frac{1+4}{6} + \frac{6+4 \times 12}{120} \right]$$

$$\Rightarrow \frac{1}{2} \times \left[\frac{5}{6} + \frac{54}{120} \right]$$

$$\text{Required probability} = \frac{5}{12} + \frac{9}{40} = \frac{50+27}{120} = \frac{77}{120}$$

S9. Ans.(d)

Sol. Scholarship of Akash = P Rs.

Scholarship of Virendra = (P + 2400) Rs.

Scholarship of Sagar = (P + 4400) Rs.

Equivalent CI at 10% for two years

$$= 10 + 10 + \frac{10 \times 10}{100}$$

$$= 21\%$$

Equivalent CI at 20% for two years

$$= 20 + 20 + \frac{20 \times 20}{100}$$

$$= 44\%$$

ATQ—

$$(P + 4400) \times \frac{60}{100} \times \frac{15 \times 3}{100} - \frac{P}{2} \times \frac{21}{100} - \frac{(P+2400)}{2} \times \frac{44}{100} = 132$$

$$\frac{27P+118800}{100} - \frac{65P+105600}{200} = 132$$

$$54P + 237600 - 65P - 105600 = 26400$$

$$11P = 105600$$

$$P = 9600$$

Sagar's scholarship = (9600 + 4400) = 14000 Rs.

S10. Ans.(c)

Sol. Let investment of P, Q, R and S is p, q, r and s respectively.

P Q R S

Now in first year $\rightarrow p \times 12 : q \times 12 : r \times 12$

In 2nd year $\rightarrow 2p \times 12 : \frac{4q}{3} \times 12 : \frac{6r}{5} \times 12$

In 3rd year $\frac{6r}{5} \times 12 : s \times 12$

P: Q: R: S

$\Rightarrow (p \times 12 + 2p \times 12) : (q \times 12 + \frac{4}{3}q \times 12) : r \times 12 + 2 \times \frac{6}{5}r \times 12 : s \times 12$

$3p : \frac{7q}{3} : \frac{17}{5}r : s = 12 : 14 : 17 : 8$

$\Rightarrow p : q : r : s = 4 : 6 : 5 : 8$

Difference between Q and R initial investment = 1150

Total Investment of P and S together

$$= \frac{1150}{1} \times 12 = 13800$$



S (11-15)

Let total students appeared for written exam = $100x$

Students appeared from UP for written exam = $\frac{25}{100} \times 100x = 25x$

Students appeared for written exam from Delhi = $\frac{50}{3}x$

Students appeared for written exam from (Haryana + Rajasthan + Bihar) = $\frac{100}{3}x$

Now, students appeared from MP and Punjab together for written exam = $100x - 25x - \frac{50}{3}x - \frac{100}{3}x = 25x$

Since, it is given that ratio of no. of students appeared from MP and Punjab for written exam = 1: 2

$$\therefore \frac{2}{3} \times 25x = 13,700$$

$$x = 822$$

$100x = 82,200$ = Total number of appeared students for written exam

Finally, selected students = $\frac{1}{3} \times 82,200 = 27,400$

States	Appeared students for written exam	Finally, selected students	No. of male and female students in appeared students for written exam	
			Male	Female
UP	$\frac{25}{100} \times 82200 = 20550$	$\frac{40}{100} \times \frac{1}{3} \times 82200 = 10960$	$20550 \times \frac{2}{3} = 13700$	$\frac{1}{3} \times 20550 = 6850$
Delhi	$\frac{1}{6} \times 82200 = 13700$	$\frac{25}{100} \times \frac{1}{3} \times 82200 = 6850$	$\frac{3}{5} \times 13700 = 8220$	$\frac{2}{5} \times 13700 = 5480$
Haryana	$\frac{2}{5} \times \frac{1}{3} \times 82200 = 10960$			
Rajasthan	$\frac{1}{5} \times \frac{1}{3} \times 82200 = 5480$	$\frac{20}{100} \times \frac{1}{3} \times 82200 = 5480$		
Bihar	$\frac{2}{5} \times \frac{1}{3} \times 82200 = 10960$			
Punjab	13700	$\frac{15}{100} \times$		
MP	$\frac{1}{2} \times 13700 = 6850$	$\frac{1}{3} \times 82200 = 4110$		

S11. Ans.(b)

Sol.

Required answer = 20550 + 10960 + 5480
= 36990

S12. Ans.(a)

Sol.

Total no. of students shortlisted for interview

$$= \frac{50}{100} \times \frac{80}{100} \times 82200 = 32880$$

$$\text{Total selected students} = \frac{1}{3} \times 82200$$

$$= 27400$$

$$\therefore \text{required difference} = 32880 - 27400$$

$$= 5480$$

S13. Ans.(d)

Sol.

$$\text{Required answer} = 13700 + 8220$$

$$= 21920$$

S14. Ans.(c)

Sol.

$$\text{Required percentage} = \frac{10960}{6850} \times 100$$
$$= 160 \%$$

S15. Ans.(b)

Sol.

$$\text{Required percentage} = \frac{6850-5480}{5480} \times 100$$
$$= 25\% \text{ more}$$

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