Quiz Date: 15th July 2020

Q1. 12 Men can complete a project in 15 days and 10 women can complete the same project in 24 days. 9 men start working and after 6 days they are replaced by 12 women. In how many days will 12 women complete the remaining work?
(a) 20
(b) 10
(c) 16
(d) 18
(e) 14

Q2. Arjun and Suman together can complete an assignment of data entry in 6 days. Suman's speed is 60% of Arjun's speed and the total key are 5,76,000. What is Arjun's speed in key depressions per hour if they work for 12 hours a day?
(a) 4800
(b) 6400
(c) 5000
(d) 7200
(e) 8400

Q3. P and Q together can complete a piece of work in $10\frac{2}{7}$ days while Q and R together can complete the same work in $13\frac{1}{3}$ days. Q is 25% more efficient than R. In how many days will P and R together complete the same work?
(a) $11\frac{1}{4}$
(b) $12\frac{1}{4}$
(c) $11\frac{1}{3}$
(d) $12\frac{1}{3}$
(e) $14\frac{1}{4}$

Q4. A is twice as efficient as C. B takes thrice as many days as A. C takes 12 days to finish the work alone. If they work in pairs (i.e., BC, AB, CA) starting with BC on the first day, AB on the second day and AC on the third day and so on, then how many days are required to finish the work?
(a) $6\frac{1}{5}$ days
(b) 4.5 days
(c) $5\frac{1}{9}$ days
(d) 8 days
(e) 4 days

Q5. In an army camp there was sufficient food for 250 soldiers for 30 days. After 20 days 125 soldiers left the camp. For how many extra days will the rest of the food last for the remaining soldiers?
(a) 12 days
(b) 10 days
(c) 8 days
(d) 6 days
(e) 14 days

Directions (6-10): In each of these questions, a number series is given. In each series, only one number is wrong. Find out the wrong number.
Q6.   420, 330, 260, 210, 172, 150, 140
(a) 330
(b) 140
(c) 172
(d) 210
(e) None of these

Q7.   120, 136, 144, 156, 190, 291
(a) 120
(b) 190
(c) 144
(d) 291
(e) None of these

Q8.   18, 19.1, 15.8, 21.5, 13.6, 23.5, 11.4
(a) 23.5
(b) 18
(c) 21.5
(d) 11.4
(e) 13.6

Q9.   464, 478, 509, 555, 632, 732
(a) 555
(b) 478

(c) 732
(d) 464
(e) None of these

Q10. 11, 6, 7, 10, 26, 67.5
(a) 26
(b) 67.5
(c) 6
(d) 10
(e) None of these

Directions (11-15): Given below is the table which shows the number of students in seven institutes over different years. Study the following table carefully and answer the questions given below it.

Strength (Number of students) of Seven Institutes over the Years							
Year	Institutes						
	A	B	C	D	E	F	G
2002	750	640	680	780	740	620	650
2003	700	600	720	800	720	580	720
2004	800	620	730	820	760	640	730
2005	820	660	670	760	750	560	750
2006	740	760	690	790	780	650	680
2007	720	740	700	810	730	630	690
2008	780	700	660	840	720	660	740

Q11. In year 2005, ratio of male to female students from both institutes A and G was same i.e. 7 : 3. What will be the new percentage of females in institute G if 50% of the females and 50% of males from institute A were transferred to institute G?
(a) 30%
(b) 32.36%
(c) 35%
(d) 38.71%
(e) 42.35%

Q12. If in 2008, overall 60% students passed from all the institutes then, no. of passed students in 2008 is what percent of average no. of students from all the institutes in 2006 (approximately).
(a) 450%
(b) 421%
(c) 470%
(d) 390%
(e) 380%

Q13. In year 2003, the ratio of passed students to failed students from institute C was 4: 5. If the no. of male and female students for the same institute in year 2003 was 11 : 7 then, find the ratio of students failed to no. of females in institute C in 2003?
(a) 8 : 3
(b) 7 : 11
(c) 10 : 7
(d) 12 : 11
(e) 11: 12

Q14. If in 2007, 20% of students from institutes D and 40% of students from institute E were selected for an inter-college competition, then what percent of the students from both the college were selected for the competition? (approximately)
(a) 20%
(b) 23%
(c) 26%
(d) 29%
(e) 17%

Q15. The average no. of students in institute F over all the years is what percent more/less than the average no. of students in year 2008 for all the institutes? (approximately)
(a) 12%
(b) 19%
(c) 15%
(d) 18%
(e) 7%

Solutions

S1. Ans.(e)
Sol.

$$\text{One day's work of 1 man} = \frac{1}{12 \times 15}$$

$$\therefore \quad \text{One day's work of 9 men} = \frac{9}{12 \times 15}$$

$$= \frac{1}{20}$$

and one day's work of 12 women

$$= \frac{12}{10 \times 24} = \frac{1}{20}$$

Let required time is x days

$$\therefore \frac{6}{20} + \frac{x}{20} = 1$$

$$\Rightarrow x = 14 \text{ days}$$

S2. Ans.(c)
Sol.

Let Arjun's speed = x depressions per hr.

∴ Suman's speed = 0.6x depressions per hr.

ATQ,

(x + 0.6x) × 12 × 6 = 5,76,000

⇒ x = 5000 depressions per hour

S3. Ans.(a)
Sol.

One day's work of P and Q together

$$= \frac{7}{72}$$

i.e. $\dfrac{1}{P} + \dfrac{1}{Q} = \dfrac{7}{72}$ ... (i)

and one day's work of Q and R together

$$= \frac{3}{40}$$

i.e. $\dfrac{1}{Q} + \dfrac{1}{R} = \dfrac{3}{40}$ ... (ii)

But time taken by R = 1.25 × time taken by Q

i.e. $\dfrac{1}{Q} + \dfrac{1}{R} = \dfrac{1.25}{R} + \dfrac{1}{R}$

$$= \frac{2.25}{R} \quad \text{... (iii)}$$

Solving eq. (i), (ii) and (iii) we get,

Time taken by P to complete the whole work

alone = 18 days

and that by Q = 24 days

and by R = 30 days

$\therefore$ Required answer $= \dfrac{18 \times 30}{48}$

$$= 11\frac{1}{4} \text{ days}$$

S4. Ans.(c)
Sol.

Time taken by C = 12 days

Time taken by B $= 3 \times \dfrac{12}{2}$

$$= 18 \text{ days}$$

Time taken by A $= \dfrac{12}{2}$

$$= 6 \text{ days}$$

One day's work of pair BC

$$= \frac{1}{12} + \frac{1}{18}$$

$$= \frac{5}{36}$$

One day's work of pair AB

$$= \frac{1}{18} + \frac{1}{6}$$

$$= \frac{2}{9}$$

One day's work of pair CA

$$= \frac{1}{6} + \frac{1}{12}$$

$$= \frac{1}{4}$$

∴ ATQ,

First three days work $= \frac{5}{36} + \frac{2}{9} + \frac{1}{4}$

$$= \frac{11}{18}$$

Next two days work (by BC and AB together)

$$= \frac{5}{36} + \frac{2}{9}$$

$$= \frac{13}{36}$$

Remaining work after 5 days

$$= 1 - \left(\frac{11}{18} + \frac{13}{36} \right)$$

$$= \frac{1}{36}$$

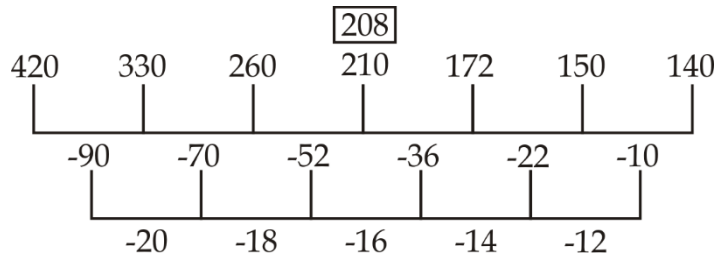∴ Required time $= 3 + 2 + \frac{4}{36}$

$$= 5\frac{1}{9} \text{ days}$$

S5. Ans.(b)
Sol.

$250 \times 30 = 20 \times 200 + x \times 125$

Or, x = 20 days

∴ Food last for 20 – 10 i.e. 10 days after 30 days

S6. Ans.(d)
Sol.

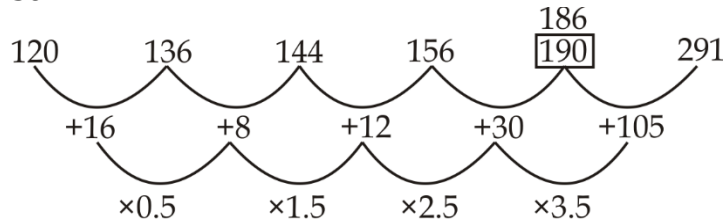```
                        208
420   330   260   210   172   150   140
 | | | | | | |
     -90   -70   -52   -36   -22   -10
              | | | | |
          -20   -18   -16   -14   -12
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S7. Ans.(b)
Sol.

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                                       186
120      136      144      156      190      291
    +16      +8       +12      +30      +105
      ×0.5     ×1.5     ×2.5     ×3.5
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S8. Ans.(c)
Sol.

```
             +2.2              +2.2
18     19.1    15.8   21.5    13.6    23.5    11.4
                      21.3
     -2.2             -2.2            -2.2
```

S9. Ans.(a)
Sol.

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                     559
464     478     509   555    632    734
   +14     +31     +50    +73    +102
      +17     +19     +23    +29
```

S10. Ans.(d)
Sol.

```
                    12
11        6        7    10      26      67.5
  ×0.5+0.5   ×1+1   ×1.5+1.5   ×2+2   ×2.5+2.5
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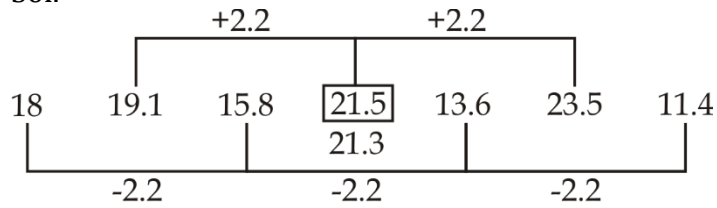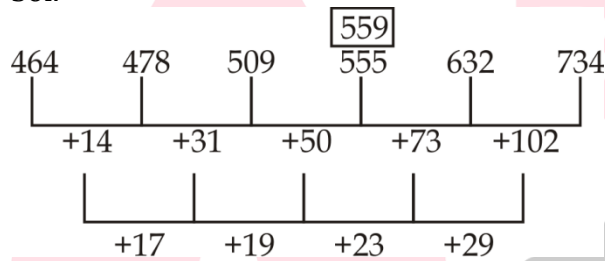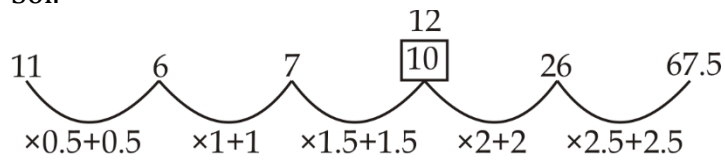
S11. Ans.(a)
Sol.

No. of female students in institute A

$$= \frac{3}{10} \times 820 = 246$$

No. of male students in institute A

$$= \frac{7}{10} \times 820 = 574$$

No. of male students in institute G

$$= \frac{7}{10} \times 750 = 525$$

No. of female students in institute G

$$= \frac{3}{10} \times 750 = 225$$

New % of females in institute G

$$= \frac{225 + \frac{246}{2}}{750 + \frac{574}{2} + \frac{246}{2}} \times 100$$

$$= \frac{348}{1160} \times 100$$

$$= 30\%$$

S12. Ans.(b)
Sol.

$$\text{Req.\%} = \frac{\frac{60}{100} \times (780 + 700 + 660 + 840 + 720 + 660 + 740)}{\frac{1}{7}(740 + 760 + 690 + 790 + 780 + 650 + 680)} \times 100$$

$$= \frac{3060}{727} \times 100$$

$$= 420.9\% \approx 421\%$$

S13. Ans.(c)
Sol.

$$\text{Req. Ratio} = \frac{\frac{5}{9} \times 720}{\frac{7}{18} \times 720} = \frac{400}{280} = \frac{10}{7}$$

S14. Ans.(d)
Sol.

Required Percentage

$$= \frac{\frac{20}{100} \times 810 + \frac{40 \times 730}{100}}{810 + 730} = \frac{454}{1540} \times 100 = 29\%$$

S15. Ans.(c)
Sol.

Average no. of students in institute
F over all the years

$$= \frac{1}{7}(620 + 580 + 640 + 560 + 650 + 630 + 660)$$

$$= \frac{1}{7} \times (4340)$$

Average no. of students in year 2008

$$= \frac{1}{7}(780 + 700 + 660 + 840 + 720 + 660 + 740)$$

$$= \frac{5100}{7}$$

$$\text{Req. \%} = \frac{\frac{5100}{7} - \frac{4340}{7}}{\frac{5100}{7}} \times 100$$

$$= \frac{760}{5100} \times 100 = \frac{760}{51}\%$$

Approx. 15%