Date : 11th Dec 2023 **Quantitative Aptitude - Time and Work** English

Q:1 A can do a piece of work in 20 days and B can do the same work in 40 days. They start working alternatively and B starts first. In how many days the work will be completed?
1. 26.5 days
2. 27 days
3. 27.5 days
4. 25 days

Q:2 A, B and C who can complete a piece of work in 12 days, 16 days and 12 days respectively come together to complete a work. A leaves 3 days before the work completes whereas B leaves 2 days before the work completes. What is the time taken to complete the work?
1. 5 days
2. 6 days
3. 7 days
4. 8 days

Q:3 Three people A, B, and C can complete a piece of work in 18 days, 12 days, and 24 days respectively. On the first day A works, on the second day B works & the next day C works. In how many days will they complete the work, if they work alternatively?
1. $16\frac{1}{2}$ days
2. $6\frac{1}{2}$ days
3. 17 days
4. 8 days

Q:4 In a printing press, Anil can print 1600 pages working for 2 hours in 4 days then, find in how many days Anil and his friend Shweta can print four times the pages of Anil alone by working 8 hours daily.
1. 1.5 days
2. 1 day
3. 3 days
4. 2 days

Q:5 The ratio of efficiency of a man to a woman is 4 : 3. 4 men working 7 hours per day can repair a road in 10 days. In how many days can 8 women in 5 hours repair the road with half of the women working with 1/3 rd of their efficiency and half of the women working double of their efficiency?
1. 1.2 days
2. 5.7 days
3. 8 days
4. 7.3 days

Q:6 When A, B, and C are deployed for a task, A and B together do 80% of the work and B and C together do 50% of the work. Who is the most efficient of the three?
1. A
2. B
3. C
4. Cannot be determined

Q:7 If 9 men and 5 women working together can do six times as much work per hour as one man and one woman together, then the ratio of the work done by a man and that of a woman for a given time is:
1. 1 : 3
2. 3 : 4
3. 1 : 2
4. 5 : 7

Q:8 Ramu works thrice as much as Shamu. If Ramu takes 60 days less than Shamu to do a work then find the number of days it would take to complete the work if both work together?
1. 22 days
2. 22.5 days
3. 44 days
4. None of this

Q:9 A can paint a wall in 25 days, while B can rub the paint off the wall in 30 days. Paint on one day and on the next day B rubs the paint, find how many days the whole wall be painted?
1. 300 days
2. 288 days
3. 289 days
4. 295 days

Q:10 Two men can do the same amount of work as three women. Also, women can do equal work as 2 boys. If 15 men can complete a work in 10 days, in how many days will 5 women and 6 boys do the same work?

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1. 25.125
2. 32.675
3. 30.675
4. 28.125

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Answer Key

1. (2)	**2.** (2)	**3.** (1)	**4.** (4)	**5.** (2)
6. (1)	**7.** (1)	**8.** (2)	**9.** (3)	**10.** (4)

Answers and Solutions

Q:1 The correct answer is **option 2** i.e. **27 days.**
If any person completes a piece of work in x days, then he works 1/x in 1 day.
A = 20 days
B = 40 days
Part of work done by A in 1 day = 1/20.
Part of work done by B in 1 day = 1/40
B starts working first,
In 2 days work completed = 1/20 + 1/40 = 3/40 unit
Multiplying by 13,
In 26 days work completed = 39/40
The remaining work 1 unit done by B
So, the next day B worked,
Thus in 27 days, the work will be completed.

Q:2 The correct answer is **Option 2** i.e. **6 days**.
Let the total time taken to complete the work be t days
A works for $(t - 3)$ days
B works for $(t - 2)$ days
C works for t days
Total amount of work = $(t - 3)/12 + (t - 2)/16 + t/12$
$\Rightarrow 1 = t/12 + t/16 + t/12 - 3/8$
$\Rightarrow 11/8 = (4t + 3t + 4t)/48$
$\Rightarrow 66 = 11t$
$\Rightarrow t = 6$ days

Q:3 The correct answer is **option 1** i.e. $16\frac{1}{2}$ **days**.
If a person can complete a piece of work in 'x' day then his efficiency to do the work in 1 day = 1/x
The efficiency of A to do the work in 1 day = 1/18
The efficiency of B to do the work in 1 day = 1/12
The efficiency of C to do the work in 1 day = 1/24
If A starts the work and then B work next day and Next C
So, in 3 days the work done is = $(1/18) + (1/12) + (1/24)$ = 13/72
In 15 days the work done = 65/72
Next day A works, So in 16th day the work done = $(65/72) + (1/18)$ = 69/72
The remaining work = 1 - 69/72 = 3/72
The remaining work is done by B in $(3/72) \times 12$ = 1/2 day
So, the complete work is done in 16 + 1/2 = $16\frac{1}{2}$ day.

Q:4 The correct answer is **Option 4** i.e. **2 days.**
We know that,
$(M_1 \times D_1 \times H_1)/W_1 = (M_2 \times D_2 \times H_2)/W_2$
where, M = Men, D = Days, H = hours, and W = work done
Now, according to the question
$\Rightarrow (1 \times 4 \times 2)/1600 = (2 \times D_2 \times 8)/6400$
$\Rightarrow 1/200 = D_2/400$
$\Rightarrow 400/200 = D_2$
$\Rightarrow D_2 = 2$ days

Q:5 The correct answer is **option 2** i.e. **5.7 days.**
Total work done by 4 men = 4 × 7 × 10 = 280 units
Number of hours a man works per day = 7
As the ratio of efficiency of man and women is 4 : 3, hence a woman will do $(7/4 \times 3)$ units of work per day
Now 4 women work with 1/3 of their efficiency and 4 women work with double efficiency
Hence work done by 8 women per day = $4 \times 7/4 \times 3 \times 1/3 + 4 \times 7/4 \times 3 \times 2$ = 49 units
Hence, Number of days taken by 8 women = 280/49 = 5.7 days

Q:6 The correct answer is **option 1** i.e. **A**
According to the question, amount of work done
A + B = 80%
B + C = 50 %
Also, the total work completed by A, B and C will be 100%
Thus, $(A + B) + (B + C) - (A + B + C) = 80 + 50 - 100$
$\Rightarrow B = 30\%$
So, A = 50% , C = 20%
Hence, A is the most efficient.

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Q:7 The correct answer is **Option 1** i.e. **1 : 3.**
Let the efficiency of man and woman be x and y respectively.
According to question, ratio of efficiencies,
⇒ (9x + 5y) = 6(x + y)
⇒ 9x + 5y = 6x + 6y
⇒ 9x - 6x = 6y - 5y
⇒ 3x = y
⇒ x : y = 1 : 3

Q:8 The correct answer is **option 2** i.e. **22.5**
Ramu is doing 'x' units of work and Shamu is doing 'y' units of work.
here, x = 3y
So, according to the question;
x × (d - 60) = y × (d)
d = 90 days
Thus, shamu takes 90 days and ramu takes 30 days to complete a work
If they work together,
[(1/90) + (1/30)] × D = 1
D = 22.5 days

Q:9 The correct answer is **option 3** i.e. **289 days**
Wall painted by A in 1 day = 1/25
Wall rubbed by B in 1 day = 1/30
Wall paint remaining in 2 days = 1/25 - 1/30 = (6 - 5)/150 = 1/150
Wall painted by A on last day = 1/25 = 6/150
Work done before last day = 1 - 6/150 = 144/150
Number of days taken to paint this part = 144/150 ÷ 1/150 = 144 × 2 = 288 days
Total days = 288 + 1 = 289 days

Q:10 The correct answer is **option 4** i.e **28.125.**
Let work done by 1 boy in 1 day = x units
Work done by 1 woman in 1 day = 2x units
Work done by 3 women in 1 day = 6x units
Work done by 2 men in 1 day = 6x units
Work done by 1 man in 1 day = 6x/2 = 3x units
Work done by 15 men in 10 days = (15 × 10 × 3x) = 450x
Work done by 5 women and 6 children in 1 day = (5 × 2x + 6x) = 16x
Number of days = 450x/16x = 28.125

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