Quiz Date: 1st March 2020

Q1. If 10 men and 15 women can complete a piece of work in 8 days while 12 men and 8 women can complete the same work in 10 days. If A boy who is 50% less efficient than that of man, can do the same work in 50 days.
Quantity I : Time taken by 2 men, 4 women and 18 boys to complete the work.
Quantity II : Time taken by 9 men, 3 women and 6 boys to complete the same work.
(a) Quantity I > Quantity II
(b) Quantity I < Quantity II
(c) Quantity I ≥ Quantity II
(d) Quantity I ≤ Quantity II
(e) Quantity I = Quantity II or No relation

Q2. Babu starts from his house at certain time with a certain speed to pick up his girlfriend from office at 5 : 00 PM. One day his girlfriend left the office at 3 : 00 PM and starts walking to home with a speed of 40 km/hr and meet Babu in the way who left his home at his usual time. They reached home 40 min. Earlier than their usual time.
Quantity I : Speed of boy.
Quantity II : $492\frac{1}{2}$% of speed of girl.
(a) Quantity I > Quantity II
(b) Quantity I < Quantity II
(c) Quantity I ≥ Quantity II
(d) Quantity I ≤ Quantity II
(e) Quantity I = Quantity II or No relation

Q3. If the cost price of the article is $79\frac{2}{7}$% of the mark price and there is a discount of Rs. 68 on the marked price. There is a profit of 20% on selling the item.
Quantity I : CP of the article
Quantity II : 1111 Rs.
(a) Quantity I > Quantity II
(b) Quantity I < Quantity II
(c) Quantity I ≥ Quantity II
(d) Quantity I ≤ Quantity II
(e) Quantity I = Quantity II or No relation

Q4. **Quantity I — Time taken by A to complete a work alone** if A can complete a work in 5 more days than B while A does the same work in 9 more days than C. If A and B can complete the whole work in same time as time taken by C alone to do the whole work.
Quantity II — Time taken by 8 men and 14 women to reap $\frac{7}{12}\,part$ of 360 hectares land by working 7 hrs per day if 6 men and 10 women can reap $\frac{5}{12}$ part of the land in 15 days by working 6 hrs per day. It is also given that work of 2 men is equal to that of 3 women.
(a) Quantity I > Quantity II
(b) Quantity I < Quantity II
(c) Quantity I ≥ Quantity II

(d) Quantity I ≤ Quantity II
(e) Quantity I = Quantity II or No relation

Q5. **Quantity I** — Difference between the speeds of P and Q if 2 places A and B are 60 km apart. P and Q start from A at same time & meet 1st time at a place 12 km from B & they reach A after immediate return from B. The speed of slower person is 48 km/hr.
Quantity II — Speed of train if a distance of 600 km is to be covered in 2 parts. In 1st phase 120 km is travelled by train and rest by car and it took total of 8 hrs, but if 200 km is covered by train and rest by car it takes 20 min more.
(a) Quantity I > Quantity II
(b) Quantity I < Quantity II
(c) Quantity I ≥ Quantity II
(d) Quantity I ≤ Quantity II
(e) Quantity I = Quantity II or No relation

Q6. The RBI lends a certain amount to the SBI on simple interest for two years at 15%. The SBI gives this entire amount to Bharti Telecom on compound interest for two years at the same rate annually. Find the percentage earning of the SBI at the end of two years on the entire amount.
(a) 3%
(b) 3.25%
(c) 3.5%
(d) 2.25%
(e) None of these

Q7. A and B together can completed a work in 5 days. Had A worked at twice the speed and B at half the speed, it would have taken them 4 days to complete the job. How much time would it take for A alone to do the work?
(a) 10 days
(b) 20 days
(c) 25 days
(d) 15 days
(e) 30 days

Q8. Point P to Point Q is a downstream journey of 300 km on a stream which flows at a speed of 5 km/hr. Two boats X and Y starts from point P and Point Q respectively with speed of 25 km/hr and 15 km/hr in still water. After reaching the opposite point they return to their starting points, find after how much time will they meet second time?
(a) 7.5hour
(b) 15hour
(c) 20hour
(d) 10hour
(e) 12 hours

Q9. If the volume and curved surface area of a cylinder 616 m^3 and 352m^2 respectively, what is the total surface area of the cylinder (in m^2)?

(a) 429
(b) 419
(c) 435
(d) 421
(e) 417

Q10. A man borrows Rs. 4000 at 20% compound rate of interest. At the end of each year he pays back Rs. 1500. How much amount should he pay at the end of the third year to clear all his dues?
(a) Rs. 2592
(b) Rs. 2852
(c) Rs. 2952
(d) Rs. 2953
(e) Rs. 2454

Q11. To do a certain work B would take 4 times as long as A and C together and C would take 3 times as long as A and B together. A, B and C together complete the work in 5 days. How long would take B and C to complete the work?
(a) $9\frac{1}{11}$ days
(b) $11\frac{1}{9}$ days
(c) $26\frac{2}{3}$ days
(d) $28\frac{3}{5}$ days
(e) $31\frac{1}{3}$ days

Q12. Mayank can do 50% more work than Shishu in the same time. Shishu alone can do a piece of work in 30 hours. Shishu starts working and he had already worked for 12 hours when Mayank joins him. How many hours should Shishu and Mayank work together to complete the remaining work ?
(a) 6 hours
(b) 12 hours
(c) 4.8 hours

(d) 7.2 hours
(e) 6.2 hours

Q13. There are 12 pipes connected to a tank. Some of them are fill pipes and the others are drain pipes. Each of the fill pipes can fill the tank in 8 h and each of the drain pipes can drain completely in 6 h. If all the pipes are kept open, an empty tank gets fill in 24 h. How many of the 12 pipes are fills pipes ?
(a) 5
(b) 6
(c) 7
(d) 8
(e) 4

Q14. A cylindrical flask, whose circular part has a diameter of 35 cm is filled with water up to a height of 24 cm. A solid iron spherical ball of radius 12 cm is dropped in the flask to submerge completely in water. Find the increase in the level of water (in cm) (rounded off to two decimal places).
(a) 8.56
(b) 8.24
(c) 7.88
(d) 7.52
(e) 6.52

Q15. A tank of capacity 25 litres has an inlet and an outlet tap at its bottom. If both are opened simultaneously, the tank is filled in 5 minutes. But if the outlet flow rate is doubled and taps opened the tank never gets filled up. Which of the following can be outlet flow rate in liters/min ?
(a) 2 liters/min
(b) 6 liters/min
(c) 4 liters/min
(d) 3 liters/min
(e) 1 liters/min

Directions (16-20): find the approximate value of following questions.
Q16. 369.78 ÷ 4.87 + 52.13% of 449.75 =?
(a) 360
(b) 208
(c) 408
(d) 308
(e) 380

Q17. 3456.87 ÷ 99.87 + 4345 ÷ 100.12 = $\frac{4}{5}$ of ?
(a) 69
(b) 98
(c) 126

(d) 112
(e) 79

Q18. 41.78% of 889.86 – 53.79% of 240.13 =?
(a) 264
(b) 254
(c) 244
(d) 212
(e) 344

Q19. 12.002 × 15.005 – 8.895 × 7.065 = ?
(a) 130
(b) 117
(c) 105
(d) 110
(e) 95

Q20. 105.1% of 8401.01 $- \frac{3}{7}$ % of 5600.12 + 9.999 = ?
(a) 8880
(b) 8080
(c) 8850
(d) 8760
(e) 8806

Solutions

S1. Ans.(e)
Sol. $(10m + 15w) 8 = (12m + 8w)10$
$80m + 120w = 120m + 80w$
$40m = 40w$
And, m = w = 2B
Quantity I $\to 2m + 4w + 18b \to 2m + 4m + 9m \to 15m$
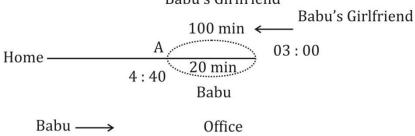Quantity II $\to 9m + 3w + 6b \Rightarrow 9m + 3m + 3m \to 15m$
∴ Quantity I = Quantity II

S2. Ans.(a)
Sol.

Because babu does not go G to A to A and A to O.

		Time	Speed		
Babu	20 min	1	5	×40	200 km/hr
		:	:		
Girlfriend	100	5	1	×40	40 km/hr

Quantity I → 200 km/h
Quantity II → 197 km/h
∴ Quantity I> Quantity II

S3. Ans.(b)
Sol.

CP	MP	SP
555x	700x	(700x – 68)

$\therefore \frac{120}{100} \times 555x = 700x - 68$
$666x = 700x - 68$
34x = 68
x = 2
$\therefore Quantity\ I\ \to CP = 2 \times 555 = 1110$ Rs.
∴ Quantity I <Quantity II

S4. Ans.(a)
Sol.

	A	B	C
Time	$x + 5$	x	$x - 4$

$\therefore \frac{1}{x+5} + \frac{1}{x} = \frac{1}{x-4}$
$x = 10$
∴ Quantity I → 10 + 5=15 days
Given $\boxed{2M = 3W}$
$\therefore \frac{(8M+14W) \times x \times 7}{\frac{7}{12} \times 360} = \frac{(6M+10W) \times 15 \times 6}{\frac{5}{12} \times 360}$
$x = \frac{171}{13}$
$= 13\frac{2}{13}$
Quantity II → $13\frac{2}{13}$
∴ (Quantity I > Quantity II)

S5. Ans.(b)
Sol.

Let P is faster than Q

Then P covers 72 km distance in the same time as Q covers 48 km distance
Ratio of the speed = 72 : 48
= 3 : 2
∴Speed of faster train i.e., P = $\frac{48}{2} \times 3 = 72$ km/hr

Quantity 1→ Difference between P and Q = 72 – 48 = 24 km/hr.

Let speed of train = T km/hr
Let speed of car = C km/hr
∴ $\frac{120}{T} + \frac{480}{C} = 8$ ....(i)
$\frac{200}{T} + \frac{400}{C} = 8\frac{1}{3}$ ....(ii)
On solving (i) and (ii)
T = 60 km/hr
∴ Quantity I < Quantity II

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S6. Ans.(d)
Sol.
Rate on SI for SBI = 15 × 2 = 30%
Rate on CI for Bharti telecom
$= 15 + 15 + \frac{15 \times 15}{100}$
= 32.25
Percentage earning of SBI = 2.25%

S7. Ans.(a)
Sol.
Let, A can complete the work alone in 'x' days
B can complete the work alone in 'y' days
$\frac{1}{x} + \frac{1}{y} = \frac{1}{5}$ ..(i)
And,

$\frac{2}{x} + \frac{1}{2y} = \frac{1}{4}$ ... (ii)

On solving (i) & (ii)

x = 10 days, y =10 days

S8. Ans.(c)

Sol

Time when X and Y meet first time

$= \frac{300}{25+15} = \frac{300}{40} = 7.5$ hr

Distance travelled by X = 7.5 × (25 + 5) = 225 km

Distance travelled by Y = 7.5 × (15 – 5) = 75 km

X reach at point Q in $\frac{75}{30}$ i.e. 2.5 hour

In 2.5hr Y travelled 2.5 × 10 = 25 km

Now Boat X return and relative distance b/w X and Y is 100 km and relative speed is 10 km
i.e. difference of speed of X (25 -5) = 20 km/hr (upstream) and speed of Q (15 – 5) = 10 km/hr
(upstream)

Time taken by X and Y to meet $= \frac{100}{10} = 10$ hr

Total time when X and Y meet second time = 7.5 +2.5 + 10 = 20 hr

S9. Ans.(a)

Sol.

$\frac{\pi r^2 h}{2\pi rh} = \frac{616}{352}$

$r = 3.5$ m

$\pi r^2 h = 616$

$h = \frac{616}{11 \times 3.5} = 16$ m

Total S.A. $= 2\pi rh + 2\pi r^2$

$= 2\pi r(h + r)$

$= 2 \times \frac{22}{7} \times 3.5(3.5 + 16)$

$= 429$ m²

S10. Ans.(c)

Sol.

Amount	4000	rate	20%
At end of 1st year	4000 + 800 = 4800		
Amount	4800 – 1500 = 3300		
At the end of 2nd year	3300 + 660 = 3960		
Amount	3960 – 1500 = 2460		

Amount to be paid at the end of third year = 2460 + 492 = 2952

S11. Ans.(b)

Sol.

	A + C	B		C	A+B
time	1	4		3	1
efficience	(4	1)₄		(1	3)₅

16   5   4   5   4   15

B = 4

C = 5

Required time = $\frac{20 \times 5}{9} = \frac{100}{9} = 11\frac{1}{9}$ days

S12. Ans.(d)

Sol.

Mayank can do the whole work alone in

$30 \times \frac{2}{3} = 20$ hours

Let in x hours they complete the remaining work together

$\therefore \frac{12 + x}{30} + \frac{x}{20} = 1$

$\Rightarrow 24 + 2x + 3x = 60$

$\Rightarrow x = 7.2$ hours

S13. Ans.(c)

Sol.

Let x are fill pipes out of 12 pipes

$\therefore$ x fill pipes can fill the tank in $\frac{8}{x}$ hours

And (12 – x) drain pipes can drain the tank in $\frac{6}{12-x}$ hours

$\therefore \frac{x}{8} - \frac{12-x}{6} = \frac{1}{24}$

3x – 48 + 4x = 1

$\Rightarrow 7x = 49$

$\Rightarrow x = 7$

S14. Ans.(d)

Sol.

Let level of water will be increased by h.

$\pi \times \left(\frac{35}{2}\right)^2 \times h = \frac{4}{3}\pi(12)^3$

$\Rightarrow h = \frac{4}{3} \times \frac{12 \times 12 \times 12 \times 4}{35 \times 35}$

= 7.52 cm

S15. Ans.(b)

Sol.

Since tank never filled up means outlet flow rate ≥ Inlet flow rate

$\Rightarrow$ One minute's work of both pipes together $= \frac{1}{5}$

In first case when tank filled
Inlet flow rate > outlet flow rate
And net flow rate of both pipes together
$= \frac{25}{5} = 5$ li/min
in second case, net flow rate must be either zero or -ve
∴ outlet flow rate may be ≥ 5 lit/min

S16. Ans.(d)
Sol.
$? \simeq 370 \div 5 + \frac{52}{100} \times 450$
$\simeq 308$

S17. Ans.(b)
Sol.
$\frac{4}{5} \times ? \simeq 34.57 + 43.45$
$? \simeq 78.02 \times \frac{5}{4}$
$\simeq 98$

S18. Ans.(c)
Sol.
$? \simeq \frac{42}{100} \times 890 - \frac{54}{100} \times 240$
$\simeq 373.8 - 129.6$
$\simeq 244$

S19. Ans.(b)
Sol.
$? \approx 12 \times 15 - 9 \times 7$
$\approx 180 - 63 = 117$

S20. Ans.(e)
Sol.
$? \approx \frac{8400 \times 105}{100} - 5600 \times \frac{3}{700} + 10$
$\approx 8820 - 24 + 10 = 8806$

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