Quant Mega Quiz for SSC CHSL (Solutions)

S1. Ans.(b)

Sol.

A	15		4
B	10	60	6
C	– 12		– 5

Efficiency of A + B – C = 5

A, B and C will complete the work in

$= \frac{60}{5} = 12$ days

S2. Ans.(c)

Sol.

	Total work	Efficiency
A	10	3
	30	
B	15	2

A + B will take $= \frac{30}{5} = 6$ days

S3. Ans.(d)

Sol.

	Total work	Efficiency
A	12	5
	60	
B	15	4

3 days work of A = 5 × 3 = 15

Remaining work = 60 – 15 = 45

Time $= \frac{45}{9} = 5$ days

S4. Ans.(c)

Sol.

A	8		15
B	10	120	12
C	12		10

2 hour work of A + B + C
$= 2 \times (15 + 12 + 10)$
$= 74$
Remaining work $= 12 - 74 = 46$
46 work is done by B + C in $= \frac{46}{22} = \frac{23}{11}$
$= 2\frac{1}{11} = 2$ hour $\frac{60}{11}$ minutes $\cong$ 2 hours 5 minutes
The work gets completed by 01 : 05

S5. Ans.(d)
Sol.
$12M \rightarrow 18$ days
Efficiency of $12M \rightarrow \frac{1}{18}$ days
Work done by 12 Men in 6 days $= \frac{6}{18} = \frac{1}{3}$
Remaining work $= 1 - \frac{1}{3} = \frac{2}{3}$
Efficiency of 12 men $\Rightarrow \frac{1}{18}$
Efficiency of 16 men $\Rightarrow \frac{1}{12 \times 18} \times 16 = \frac{4}{54}$
$\frac{2}{3}$ work will be done by 16 men in $= \frac{\frac{2}{3}}{\frac{4}{54}}$
$= \frac{2 \times 54}{3 \times 4}$
$= 9$ days

S6. Ans.(a)
Sol.
$\frac{5 \times 5 \times 6}{150} = \frac{10 \times 30M}{200} \times$ days
Days $= \frac{200 \times 5 \times 5 \times 6}{150 \times 10}$
$\frac{E_M}{E_B} = \frac{3}{1}$
$E_M = 3E_B$
$M = 3B$
$5M = 15B$
$\frac{15 \times 5 \times 6}{150} = \frac{10 \times 10 \times \text{hours}}{200}$
hour $= \frac{200 \times 15 \times 5 \times 6}{150 \times 10 \times 10}$
$= 6$ hours

S7. Ans.(b)
Sol.
$(12\ M + 16B) \times 5 = (13\ M + 24B) \times 4$
$60M + 80B = 52M + 96B$
$8M = 16B$
$1M = 2B$
$12M + 16B = 12B + 16B = 40B$
$7M + 10B = 14M + 10B = 24B$
$40 \times 12 = 24 \times \text{Time}$
Time = 20 days

S8. Ans.(a)
Sol.

	Total work	Efficiency
A → 45		8
	360	
B → 40		9

Work done by B in 23 days $= 23 \times 9 = 207$
Remaining work $= 300 - 207 = 153$
A + B will complete 176 work in
$= \frac{153}{17}$ days
= 9 days

S9. Ans.(a)
Sol.

	Total work	Efficiency
San → 20		3
	60	
Praveen → 30		−2

2 day's work of S + P = 1
14 day's work of S + P = 57
Now it's S's turn
On 115th day wall will be complete = 57 + 3 = 60

S10. Ans.(b)
Sol.
$A = \frac{130}{100}B$
Efficiency, A : B = 13 : 10
Time, A : B = 10 : 13
10 r → 23 days
$13r \rightarrow \frac{23 \times 13}{10}$ days

Working together, there efficiency

$$= \frac{10}{23 \times 13} + \frac{1}{23}$$

$$= \frac{10 + 13}{23 \times 13}$$

$$= \frac{23}{23 \times 13} = \frac{1}{13}$$

They will complete the work in ⇒ 13 days

S11. Ans.(c)

Sol.

Let Husband wife meet after x minutes

Distance covered by Pradeep in x minutes $= \frac{4500}{60}x$

Distance covered by his wife in x minutes $= \frac{3750}{60}x$

$$= \frac{450}{6}x + \frac{375}{6}x = 726$$

$$\frac{825}{6}x = 726$$

$$x = \frac{4356}{825}$$

$= 5.28$ minutes

S12. Ans.(a)

Sol.

Let sped of boat be x km/hr

Speed of stream be y

Speed upstream = x – y

Speed downstream = x + y

$$\frac{24}{x-y} + \frac{28}{x+y} = 6 \ldots (i)$$

$$\frac{30}{x-y} + \frac{21}{x+y} = 6\frac{1}{2} \ldots (ii)$$

Solving (i) & (ii) we get

x = 10 km/hr

y = 4 km/hr

S13. Ans.(c)

Sol. Distance travelled by train travelling at 100 km/hr in 45 minutes

$$\Rightarrow \frac{45 \times 100}{60}$$

= 75 km

Trains will meet after

$$= \frac{75}{136 - 100}$$

$= \frac{75}{36}$

$= 2.083$

Distance from Mumbai = 2.083 × 136
= 283. 33 km

S14. Ans.(a)
Sol.

Speed of current = 6 km/hr
Let speed of boat be x km/hr
$\frac{48}{x-6} + \frac{48}{x+6} = 6$
Using option
x = 18 km/hr satisfies

S15. Ans.(a)
Sol.
550 m = speed of train × 5 sec
110 m/s = speed
100 = 114 × time
Time = 0.87 sec
Less than 1 sec.

S16. Ans.(a)
Sol. Clock gains
15 minutes in 24 hours
Clock gains in 1 hour $\Rightarrow \frac{15}{24}$
In 16 hours it will gain $= \frac{15}{24} \times 16$
= 10 minutes
Time shown by clock at 4.00 AM = 4 : 10 AM

S17. Ans.(b)
Sol.
$S = \frac{D}{Time}$
$= \frac{80}{\frac{60}{40} + \frac{20}{20}}$
$= \frac{80}{1.5 + 1}$
$= \frac{80}{2.5}$
$= \frac{800}{25} = 32$ km/hr

S18. Ans.(d)
Sol.

$$\text{Average speed} = \frac{500}{5\frac{1}{2} + 4\frac{2}{3}}$$

$$= \frac{500}{\frac{11}{2} + \frac{14}{3}}$$

$$= \frac{500 \times 6}{33 + 38}$$

$$= \frac{3000}{71}$$

$$= 49.18 \cong 50$$

S19. Ans.(c)
Sol.
If A runs 400 m
B runs 395 m
If B runs 400 m
C runs 396 m
If D runs 400 m
C covers 384 m
If B covers 395 m, then C will cover

$$= \frac{396}{400} \times 395 = 391.05 \text{ m}$$

If C covers 391.05 m then D will cover

$$= \frac{400}{384} \times 391.05 = 407.34 \text{ m}$$

Thus, if A and D run 400m, then D wins by 7.3 m.

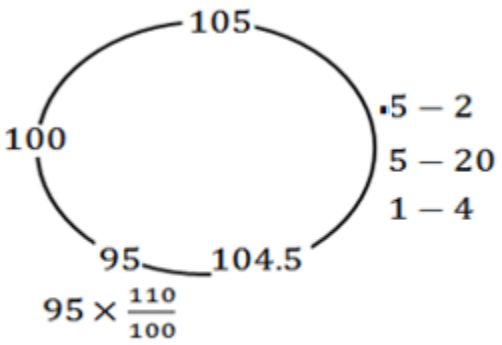
S20. Ans.(a)
Sol.
Train Car
240 210 = 8 h 40 min.
180 270 = 9 h
To travel extra 60 km by car increase in time = 20 min
So, travel extra 240 km by car increase in time = 80 min
∴ 450 km by car in = 8 h 40 min + 80 min = 10 h
Speed of car = 450/10 = 45 km/h

S21. Ans.(b)
Sol.
180 - 108
= 72

$$= \frac{72}{2} = 36°$$

$$\text{Number of sides} = \frac{360°}{36} = 10$$

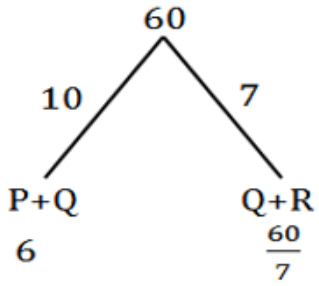
S22. Ans.(b)
Sol.



C.P. = 400

S23. Ans.(c)
Sol. cot 41°. cot 42° . cot 43° . cot 44° . cot 45° . cot 46° . cot 47° . cot 48° . cot 49°
cot 45°
= 1

S24. Ans.(c)
Sol.



Work done by (Q + R) = 7 × 6 = 42
Remaining work = 18
$P = \frac{18}{3} = 6$
$P = \frac{60}{6} = 10$
Q = 4
R = 3
$R = \frac{60}{3} = 20$
Difference days = 20 - 10 = 10

S25. Ans.(d)
Sol.
$2\sqrt{d_1^2 + d_2^2} = 60$
$\sqrt{d_1^2 + d_2^2} = 30$
$d_1^2 + d_2^2 = 900$

$576 + d_2^2 = 900$

$d_2^2 = 900 - 576$

$d_2^2 = 324$

$d_2 = 18$

$\text{Area} = \frac{1}{2} \times 18 \times 24$

$= 216\ \text{cm}^2$

S26. Ans.(b)

Sol.

$$A : B : C = \frac{1}{(100 + R_1t_1)} : \frac{1}{(100 + R_2t_2)} : \frac{1}{(100 + R_3t_3)}$$

$$A : B : C = \frac{1}{110} : \frac{1}{115} : \frac{1}{120}$$

$$A : B : C = \frac{1}{22} : \frac{1}{23} : \frac{1}{24}$$

$23 \times 24 : 22 \times 24 : 22 \times 23$

$A : B : C = 552 : 528 : 506$

$$A = 7930 \times \frac{552}{1586}$$

$A = 2760$ Rs.

S27. Ans.(b)

Sol.

$$A \times \frac{60}{100} = B \times \frac{30}{100}$$

$2A = B$

$A : B = 1 : 2$

$$B = C \times \frac{40}{100}$$

$B : C = 2 : 5$

$A : B : C = 1 : 2 : 5$

$$5 = 1 \times \frac{x}{100}$$

$x = 500$

S28. Ans.(b)

Sol.

$$\frac{300\ (60 - 50)}{50}$$

$= 60$ gms

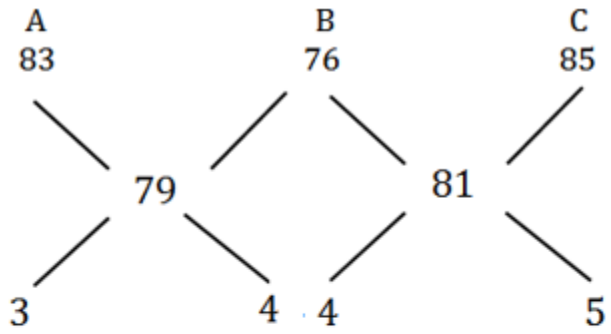
S29. Ans.(c)
Sol.

$-\left(\frac{x}{10}\right)^2$

$-\left(\frac{20}{10}\right)^2$

4% decrease

S30. Ans.(a)
Sol.



A : B = 3 : 4

B : C = 4 : 5

A : B : C = 3 : 4 : 5

A + B + C = 83×3 + 76×4 + 85×5

= 249 + 304 + 425

= 978

Average = $\frac{978}{12}$

= 81.5