18 August RRB NTPC Mains Mathematic Mega Quiz

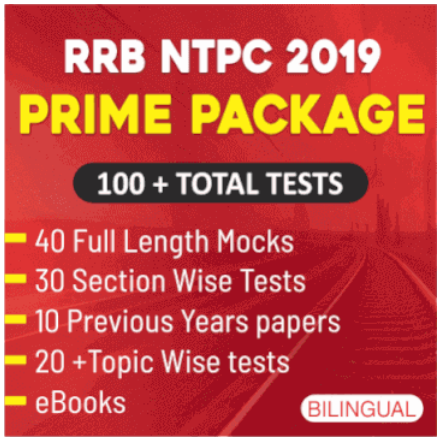
S1. Ans.(a)
Sol.
+10% – 5% → 1000 Rs.
5% → 1000 Rs.
1% → 200 Rs.
100% → 20,000 Rs.

S2. Ans.(b)
Sol.
Using short cut
Loss % = $\left(\frac{x}{10}\right)^2$
= $(2.5)^2$
= 6.25%
C. P = $240 \times \frac{100}{93.75}$ = 256
S.P = 240
Loss = Rs. 16

S3. Ans.(d)
Sol.
Shortcut = $\left(\frac{x}{10}\right)^2$
= 6.25%
= $6\frac{1}{4}\%$

S4. Ans.(a)
Sol.
C.P × $\frac{80}{100}$ = 480
C.P = 600
S.P that he want to sell = $600 \times \frac{120}{100}$
= 720 Rs.

S5. Ans.(c)
Sol.
+5% – (–5%) ⇒ Rs. 5
10% = Rs. 5
1% = $\frac{1}{2}$
100% = Rs. 50



S6. Ans.(c)

Sol.

$C.P \times \frac{91}{100} = 105$

$C.P = \frac{10500}{91}$

$S.P = \frac{10500}{91} \times \frac{130}{100}$

= 150 Rs.

S7. Ans.(a)

Sol.

Let C.P → 100

C.P	S.P
100	90
100	112.5

22.5 → Rs. 9

$1r \rightarrow \frac{9}{22.5}$

$100r \rightarrow \frac{9}{22.5} \times 100$

$= \frac{9}{225} \times 1000$

= 40 Rs.

S8. Ans.(d)

Sol.

5% ⇒ Rs. 50

1% ⇒ Rs. 10

100% ⇒ Rs. 1000

S9. Ans.(c)

Sol.

Single discount = −20 − 10 + 2

= −28%

$S.P = 500 \times \frac{72}{100}$

= 360 Rs.

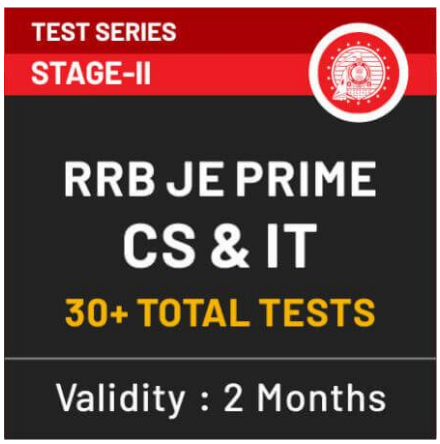
S10. Ans.(d)

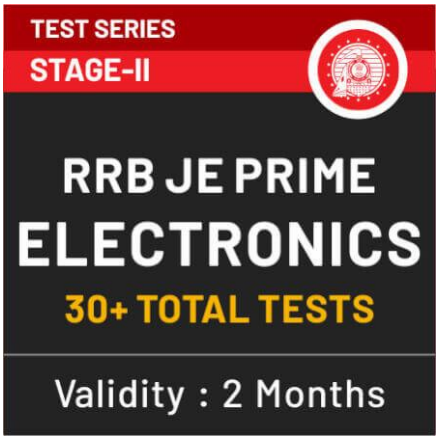
Sol.

P = 10 − 10 − 1

= −1%

⇒ loss → 1%





S11.Ans(a)
Sol.
P's 1 days work = 1/10, Q's 1 days work = 1/15
They are working in alternative days.
So, (P + Q)'s two days work = (1/10 + 1/15) = 1/6
Number of days to finish the work = (2 x 1)/ 1/6 = 12

S12.Ans(c)
Sol.
Amount of work P can do in 1 day = 1/20
Amount of work Q can do in 1 day = 1/30
Amount of work R can do in 1 day = 1/60
P is working alone and every third day Q and R is helping him
Work completed in every three days = 2 × (1/20) + (1/20 + 1/30 + 1/60) =
So work completed in 15 days

S13.Ans(b)
Sol.
Work done by A in 20 days = 80/100 = 8/10 = 4/5
Work done by A in 1 day = (4/5) / 20 = 4/100 = 1/25 --- (1)
Work done by A and B in 3 days = 20/100 = 1/5
(Because remaining 20% is done in 3 days by A and B)
Work done by A and B in 1 day = 1/15 ---(2)
Work done by B in 1 day = 1/15 – 1/25 = 2/75
=> B can complete the work in 75/2 days = 37 ½ days

S14.Ans(d)
Sol.
6 men = 12 women ⇒ 1 man = 2 women
48 men = (12/6) x 48 = 96 women
Total women = 96 + 32 = 128
12 women can do a piece of work in 32 days
128 women can do a piece of work = (32 x 12)/128 = 3 day

S15.Ans(c)
Sol.
Work done by Kamal in 1 day = 1/20
Work done by Suresh in 1 day = (1/20) × (125/100) = 5/80 = 1/16
=> Suresh can complete the work in 16 days

S16.Ans(a)
Sol.
2 men can do in 4 days
4 women can do in 4 days
5 children can do in 4 days
2m = 4w =5c can do in
So 2men and 4 women and 10 children complete the work
Efficiency of children and women convert in man = (2m + 2m +4m) = 8m
4 men complete the work is = 2 days
8 men complete the work is = 1 days

S17.Ans(c)

Sol.

Work done by C in one day = 1/7
Work done by B in one day = 1/2 * 1/7 = 1/14
Work done by A in one day = 1/2 *1/14 = 1/28
Work done by A, B and C in one day = 7/28 = 1/4

S18.Ans(b)

Sol.

A takes 1/3 of the time taken by B.
A takes 2/3 less time than B.
2/3 (time by B) = 10 days
Time taken by B = (3 x 10)/2 = 15 days

S19.Ans(c)

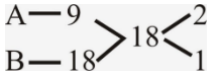
Sol.

Men's 1 Day Work = 1/5
Men's & Son's Day Work = 1/3
Son's 1 day Work = 1/3-1/5 = 2/15
Son will finish the work in = 15/2 days = 7(1/2) days

S20.Ans(d)

Sol.

A can do work in 9 days
B can do work in 18 days



so, that's means A's efficiency 2 unit / days
B 's efficiency 1 unit / day
According to the questions B left the job 3 days before completion of work.
that's means A alone do the work last 3 days = 2 unit x 3 days = 6 unit
So left unit is 18 - 6 = 12 done by both A and B in 4 days
Total days = 3 + 4 = 7

S21. Ans (c)

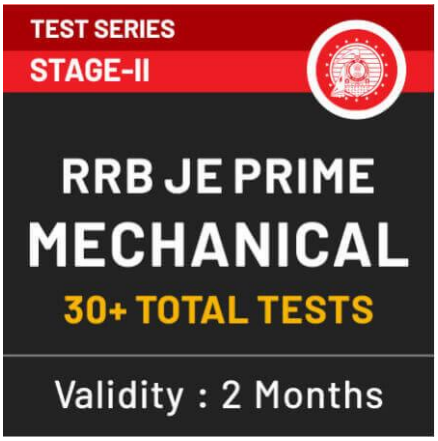
Sol.

The sum of first 25 natural numbers = n (n+1)/2 = 25*26/2 = 25*13
∴ 13 is a factor of sum of first 25 natural numbers

S22.Ans(c)

Sol.

$3011\times3012 = 3011\times(3011+1) = 3011^2+3011$
∴ to subtract the number = 3011



S23. Ans(d)
Sol.
∵ $a^3.b^2 = 72$ à $a^3.b^2 = 2^3.3^2$ àa=2, b= 3
∴ a + b = 2+3 =5

S24. Ans (b)
Sol.
Let the numbers are x and y
∴ x + y = 8 and x. y = 15
∴ Sum of the reciprocals = 1/x+1/y = y + x/x y = 8/15

S25.Ans(d)
Sol.
∵ 221 is divided by 13
∴ required remainder = remainder by 64/13 = 12

S26.Ans(b)
Sol.
∵ 24 is divided by 12
∴ required remainder = remainder by 16/12 = 4

S27.Ans(a)
Sol.
∴ $x^{11}+1$ is divisible by(x+1)
∵ Remainder is 0

S28.Ans (c)
Sol.
Required remainder = remainder by (13 +11)/17 = 7

S29.Ans(a)
Sol.
∵ Power of $(122)^{173}$ is odd number
∴unit digit in the product of $(122)^{173}$ = 2

S30.Ans(b)
Sol. ∵ 899 is divided by 31
∴ required remainder = remainder by 65/31 = 3