Quantitative Aptitude for RRB NTPC (Solutions)

S1. Ans.(c)
Sol.

Let C.P be 100

	C.P	S.P
Case 1 →	100	108
Case 2 →	100	92

$(108 - 92)r \rightarrow 28$ Rs

$16r \rightarrow 28$

$1r \rightarrow \frac{28}{16}$

$100r \rightarrow \frac{28}{16} \times 100$

$\Rightarrow$ Rs. 175

Cost Price $\Rightarrow$ Rs. 175

S2. Ans.(c)
Sol.

Using Allegation

Let he sell remaining at x%

[250 meter] [250meter]

5% x%

10

$x-10$: 5

$\frac{x-10}{5} = \frac{250}{250}$

x = 15%

S3. Ans.(b)
Sol. Let Printed price of the Book be 100

S.P of Book Seller = $100 \times \frac{90}{100}$

= Rs. 90

C.P of Book Seller = $100 \times \frac{70}{100}$

= Rs. 70

Profit % = $\frac{90-70}{70} \times 100$

$= \frac{20}{70} \times 100$

$= 28\frac{4}{7}\%$

S4. Ans.(a)

Sol.

$M.P \times \frac{95}{100} = 532$

$M.P = 560$ Rs.

$C.P \times \frac{112}{100} = 560$

$C.P = Rs.\ 500$

S5. Ans.(d)

Sol.

$C.P = 2100 \times \frac{100}{75} \times \frac{100}{140}$

$= \frac{300 \times 100 \times 100}{75 \times 20}$

$= 2000$ Rs.

S6. Ans.(c)

Sol.

$\frac{C.P \times (100 - Loss\%)}{100} = S.P$

$C.P \times \frac{80}{100} = S.P$

$C.P = S.P \times \frac{5}{4}$

S7. Ans.(b)

Sol.

	C.P	S.P
Case I	100	70
Case II	100	140

$(140 - 70)r \rightarrow 140$

$70r \rightarrow 140$

$r \rightarrow 2$

$C.P \Rightarrow 100r$

$\Rightarrow$ Rs. 200

S8. Ans.(b)

Sol.

Price of 510 eggs $= \frac{510}{12} \times 20 = 850$ Rs.

S.P at 20% gain $= 850 \times \frac{120}{100} = 1020$ Rs.

S.P of $(510 - 30) \Rightarrow 480$ eggs $\Rightarrow$ Rs. 1020

S.P of $1 \Rightarrow 1020/480$

S.P of Dozen $= 1020/48 \times 12 = 25.50$ Rs.

S9. Ans.(a)
Sol.

A	B	C
100	88	99

If A sells to B at 99 Rs.
Then there will be loss of Rs. 1

$\text{Loss \%} = \frac{1}{100} \times 100$

$= 1\%$

S10. Ans.(b)
Sol.

Let C.P of Type-1 be x & Type-2 be y

$3x + 6y = 900 \quad \ldots(i)$

$3x \times \frac{115}{100} + 6y \times \frac{90}{100} = 900 + 30$

$115x + 180y = 31000 \quad \ldots(ii)$

$90x + 180y = 27000$

$25x = 4000$

$x = 160$ Rs.

$480 + 6y = 900$

$6y = 420$

$y = 70$ Rs.

S11. Ans.(b)
Sol.

$\text{Circumradius} = \frac{a}{\sqrt{3}}$

$= \frac{12}{\sqrt{3}}$

$= 4\sqrt{3}$ cm

S12. Ans.(c)
Sol.

$2\pi r = \pi r^2$

$r = 2$

$D = 4$

S13. Ans.(c)
Sol. Distance between there tops

$= \sqrt{36^2 + 15^2}$

$= \sqrt{1296 + 225}$

$= \sqrt{1521}$

$= 39$ meter

S14. Ans.(b)
Sol.
Area of hexagon

$= 6 \times \frac{\sqrt{3}}{4} a^2$

$= \frac{3\sqrt{3}}{2} \times 4 \times 4$

$= 24\sqrt{3}\ m^2$

S15. Ans.(b)
Sol.

$2\pi R \times \frac{75}{360} = 25$

$R = 60/\pi$

S16. Ans.(b)
Sol.

$\pi r^2 = 158400/1400$

$r^2 = 36$

$r = 6\ m$

S17. Ans.(c)
Sol.

Area of square $= (10)^2 = 100$

Area of circle $= \frac{22}{7} \times (5)^2$

$= \frac{22 \times 25}{7}$

Ratio $= \frac{22 \times 25}{7 \times 100} = 11 : 14$

S18. Ans.(b)
Sol.

$2 (l + b) = 480$

$l + b = 240$

$5x + 3x = 240$

$8x = 240$

$x = 30$

area $= 5x \times 3x$

$= 15 \times 900$

$= 13500\ m^2$

S19. Ans.(a)

Sol.

$r_1^2 : r_2^2 = 4 : 9$

$r_1 : r_2 = 2 : 3$

$$\frac{2\pi r_1}{2\pi r_2} = \frac{2 \times 2}{2 \times 3} = 2 : 3$$

S20. Ans.(c)

Sol.

$4a = 2 \times \frac{22}{7} \times 42$

$a = 66$

diagonal $= a\sqrt{2}$

$= 66\sqrt{2}$

S21. Ans.(b)

Sol.

P on 1st Jan = 5200

Rate = 10%

Rate on 1st July $= 5200 \times \frac{10}{100}$

$= 520$

P on 1st July = 5200 + 520 + 5200

= 10920

Rate on 31st December $= 10920 \times \frac{10}{100}$

= 1092

Total Rate = 1092 + 520

= 1612 Rs.

S22. Ans.(a)

S23. Ans.(a)

Sol.

Let 2 digit no. be → xy

x + y = 8

10x + y + 36 = 10y + x

9y − 9x = 36

$$\begin{array}{rcrcr} y & - & x & = & 4 \\ y & + & x & = & 8 \\ \hline 2y & & & = & 12 \end{array}$$

y = 6

x = 2

Number is = 26

S24. Ans.(b)
Sol.

Curved Surface area of conical part = πrl

$= \frac{22}{7} \times 5 \times 10$

$= \frac{1100}{7}$

Curved surface area of cylindrical part = 2πrh

$= 2 \times \frac{22}{7} \times 5 \times 6$

$= \frac{1320}{7}$

Total Area

$= \frac{1100}{7} + \frac{1320}{7}$

$= \frac{24.20}{7}$

$= 345.7\ m^2$

20% extra for canvasing & folding = $345.7 \times \frac{1}{5} = 69.14$

Total area = 345.7 + 69.14= 414.84 m^2

S25. Ans.(b)
Sol. ATQ,

x + 2x + 3x + 4x = 360

1x = 360

x = 36°

Measure of Biggest Angle

= 4 × 36

= 144°

S26. Ans.(d)
Sol.

Discount = 15%

$= \frac{15}{100}$

$= \frac{3}{20} \rightarrow$ Discount

$20 \rightarrow$ MP

S.P = 20 − 3 = 17r

17r → 2125

r → 125

20r → 125 × 20

= 2500 Rs.

S27. Ans.(d)
Sol.

	Mandeep	:	Sampat
Efficiency →	3	:	1
Time Ratio →	1	:	3

3r → 60
1r → 20 days
Working together they will complete the job in $= \frac{1}{60} + \frac{1}{20}$
$= \frac{1+3}{60}$
$= \frac{4}{60}$
= 15 days

S28. Ans.(c)
Sol.
Third proportion
$= \frac{20 \times 20}{4} = 100$

S29. Ans.(a)
Sol.
Girls = 27, Boys = 23
Using Allegation,

	Girls		Boys
No →	27		23
Average →	45		x
		49.6	
	x − 49.6	:	4.6

$\frac{x - 49.6}{4.6} = \frac{27}{23}$
$\frac{x - 49.6}{0.2} = 27$
x − 49.6 = 5.4
x = 55

S30. Ans.(d)
Sol.
Distance covered in : hours
= 248 km
Remaining Distance = 661 − 248
= 413 km
Speed for remaining 7 hours
= 413/7
= 59 km/hr