RRB NTPC - PRACTICE SET
Answers with Explanation

1. (c)
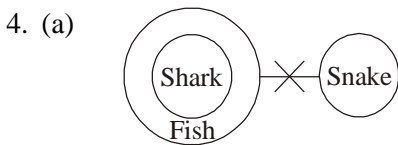
Letter	O	R	G	A	N	I	S	T	P	E
Code	C	B	D	W	L	Q	J	Y	X	F

Code of SEPARATION is
JFXWBWYQCL

2. (c) W T P M I F B [Y U]
-3 -4 -3 -4 -3 -4 -3 -4

3. (c)
$A^+ \Leftrightarrow F^-$ H^+
$C^- \underline{\quad\quad} B^+ \Leftrightarrow G^-$
E^- D^+

4. (a)

Shark / Fish — Snake

5. (b)

6. (c)

7. (d)

P
30 m
N ← 25 m A 40 m K   Standing facing the north
60 m
D

8. (c)

9. (a)

10. (b)

11. (a)
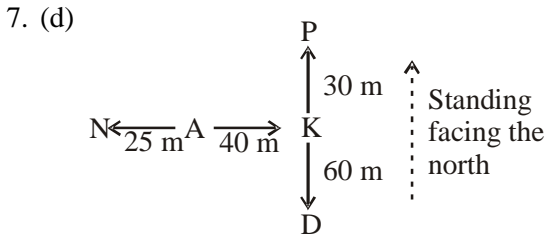
12. (c) $15 \times 2 = 30$, $2 \times 7 = 14$, $7 \times 9 = 63$
$9 \times 15 = 135$

13. (b)

Day	Person
Sunday	B
Monday	A
Tuesday	F
Wednesday	E
Thursday	C
Friday	G
Saturday	D

14. (a) 'Of all the TV sets manufactured in India, 'Solar' brand has the largest sale', it can be said only when volume of sales of all brands of TV sets manufactured is known. Thus, conclusion I follows. Nothing can be said about conclusion II as we don't have any information about the production of different brands of TV.

15. (a) The first number is multiplied by the next prime number to obtain the second number.

16. (c) First and third are both parts of the second.

17. (b)

18. (c) X $\xrightarrow{+2}$ Z $\xrightarrow{+3}$ C $\xrightarrow{+4}$ G
O $\xrightarrow{+2}$ Q $\xrightarrow{+3}$ T $\xrightarrow{+4}$ X
E $\xrightarrow{+2}$ G $\xrightarrow{+3}$ J $\xrightarrow{+4}$ N

But
I $\xrightarrow{+4}$ M $\xrightarrow{+1}$ N $\xrightarrow{+3}$ Q

19. (b) A > F > D > C/E/B

20. (c) A is 18th from the front and C is 25th from the front,.
Number of persons between A and C = 6
Since C is exactly in middle of A and B, So number of persons, between C and B = 6

$\xleftarrow{\quad 17 \quad}$ A $\xleftarrow{6}$ C $\xrightarrow{6}$ B $\xleftarrow{\quad 15 \quad}$

∴ Number of persons in the queue
$= (17 + 1 + 6 + 1 + 6 + 1 + 15) = 47$.

21. (d)
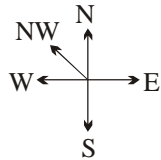
22. (d) 8 R 8 P 8 S 8 Q 8

$= 8 \times 8 + 8 \div 8 - 8$

$= 64 + 1 - 8$

$= 65 - 8 = 57$

23. (a)

24. (d) There is more security in joint family as there are other members to help. Also in nuclear families, there are lesser persons, so lesser responsibilities and more freedom. Hence, both arguments are strong.

25. (c)

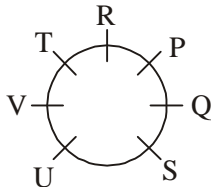Arrangement From I   Arrangement From II

26. (b) In each set,

1st number = (2nd number)^2 – 1;

and 2nd number = (3rd number)^2 – 1.

27. (b)

28. (a)

29. (d)
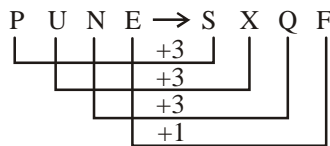
Similarly
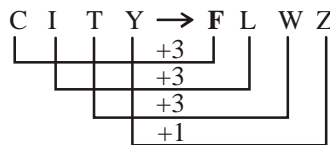
30. (c)

31. (c) **1st Part :**

$$\frac{\frac{6+4+3}{12}}{\frac{1}{\frac{9}{2}}+\frac{1}{\frac{7}{2}}-\frac{1}{\frac{5}{2}}} \Rightarrow \frac{\frac{13}{12}}{\frac{2}{9}+\frac{2}{7}-\frac{2}{5}} \Rightarrow \frac{\frac{13}{12}}{\frac{34}{9\times7\times5}}$$

$$\Rightarrow \frac{13}{12}\times\left(\frac{9\times7\times5}{34}\right)$$

2nd Part :

$$\frac{\frac{28-2}{90}\times\frac{9}{100}\times\frac{35}{10}}{2\frac{26-2}{90}\times\frac{8}{100}\times\frac{1}{10}} = \frac{26\times9\times35}{204\times8\times1}$$

$$\frac{13}{12}\times\frac{9\times7\times5}{34}\times\frac{204\times8\times1}{26\times9\times35} = 2$$

32. (c) Ronald's 1 hour's work

$= \frac{32}{6} = \frac{16}{3}$ pages

Elan's 1 hour's work $= \frac{40}{5}$ = 8 pages.

1 hour's work of the both

$= \frac{16}{3} + 8 = \frac{40}{3}$ pages

∴ Required time

$= \frac{110\times3}{40} = \frac{33}{4}$ hours

= 8 hours 15 minutes.

33. (c) Here,

32 – 10 = 22

40 – 18 = 22

72 – 50 = 22

∴ Required numbers of pebbles

= (LCM of 32, 40 and 72) – 22

= 1440 – 22 = 1418

34. (b) Part filled by both pipes in 1 min

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

Both pipes together can fill the tank in 12 min.

35. (b) Let expenses on wheat be 12x.

Expenses on meat = 17x

Expenses on vegetables = 3x

∴ Total expenses = 32*x*

Increased expenses

=(120% of 12*x*)+(130% of 17*x*)+(150% of 3*x*)]

$$=\left[\left(\frac{120}{100}\times 12x\right)+\left(\frac{130}{100}\times 17x\right)+\left(\frac{150}{100}\times 3x\right)\right]$$

$$=\left(\frac{144x+221x+45x}{10}\right)$$

ACHiEVERS In Focus

$$=\left(\frac{410x}{10}\right)=41x$$

∴ Total increase percentage

$$=\left(\frac{9x}{32x}\times 100\right)\%=\frac{225}{8}\%=28\frac{1}{8}\%$$

36. (c) Let the numbers be 7x and 7y where x and y are co-prime.
Now, LCM of 7x and 7y = 7xy
∴ 7xy = 140

ACHiEVERS In Focus

$$\Rightarrow xy=\frac{140}{7}=20$$

Now, required values of x and y whose product is 20 and are co-prime, will be 4 and 5.
∴ Numbers are 28 and 35 which lie between 20 and 45.
Required sum = 28 + 35 = 63.

37. (c) Given that a = 6%

According to the formula, Increase in consumption

$$=\left(\frac{a}{100-a}\times 100\right)\%$$

ACHiEVERS In Focus

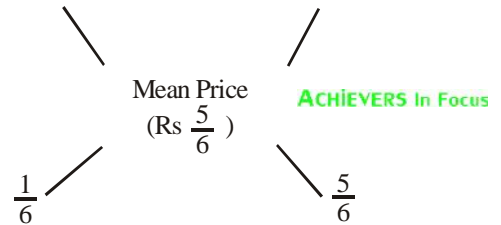$$=\left(\frac{6}{94}\times 100\right)\%=\frac{600}{94}\%=6\frac{18}{47}\%$$

38. (b) Let the C.P. of spirit be Rs 1 per litre.

S.P. of 1 litre of mix = Rs 1, Gain = 20%

C.P. of 1 litre of mix $=\text{Rs}\left(\frac{100}{120}\times 1\right)=\text{Rs}\frac{5}{6}$

C.P. of 1 litre of water   C.P. of 1 litre of spirit
Rs 0   Rs 1

Mean Price
(Rs $\frac{5}{6}$)

ACHiEVERS In Focus

$\frac{1}{6}$ $\frac{5}{6}$

Ratio of water and spirit $=\frac{1}{6}:\frac{5}{6}=1:5$

39. (d) sin θ = cos (90° − θ);
sin (90° − θ) = cos θ
∴ sin 85° = sin (90° − 5°) = cos 5°
∴ (sin²5° + sin²85°)+(sin²10° + sin² 80°) + ...+ (sin²40°+sin² 50°) + sin² 45°+sin² 90°

$$=8\times 1+\frac{1}{2}+1=9\frac{1}{2}$$ ACHiEVERS In Focus

40. (d) 123 − 99 = 24, 183–123 = 60
183 − 99 = 84

HCF of 24, 60 and 84 $\frac{12\lfloor 24,\ 60,\ 84}{2,\ 5,\ 7}$
= 12

41. (b) $\frac{a}{b}=\frac{b}{c}$
$\Rightarrow b^2=ac \Rightarrow b^4=a^2c^2$

$$\therefore \frac{a^4}{b^4}=\frac{a^4}{a^2c^2}=\frac{a^2}{c^2}$$

42. (c)   9)132(14   9)465(51
        9   45
       42   15
       36   9
        7   6

∴ 15 × 9 = 135 & 51 × 9 = 459
The required number = 51–15+1 = 36+1=37

43. (c) Speed in Upstream = 2 km/hr.
Speed in Downstream = 6 km/hr.
Speed of boatman in still water

$$=\frac{6+2}{2}=4\,\text{km}/\text{hr}.$$ ACHiEVERS In Focus

Required time $=\frac{5}{4}\text{hr.}=$ 1 hr. 15 mins.

44. (c) Let the merchant bought 100 metres of cloth for ₹ 100.

∴ Total S.P.

$$= ₹ \left(\frac{50 \times 140}{100} + \frac{25 \times 60}{100} + 25 \right)$$

$$= ₹ (70 + 15 + 25) = ₹ 110$$

∴ Gain per cent = 10%

45. (b) Principal + SI for 2 years = ₹ 720. .... (i)

Principal + SI for 7 years = ₹ 1020 .... (ii)

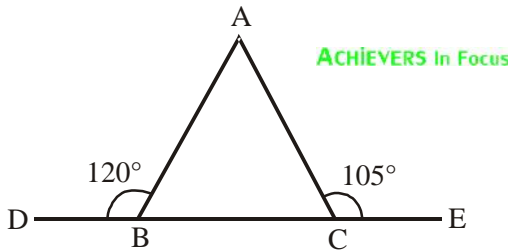Subtracting equation (i) from (ii) we get.

SI for 5 years = ₹ (1020 – 720) = ₹ 300

∴ SI for 2 years

$$= ₹ \ 300 \times \frac{2}{5} = ₹ \ 120$$

∴ Principal = ₹ (720 – 120) = ₹ 600

46. (c)

∠ABD = 120°

∴ ∠ABC = 180° – 120° = 60°

∠ACE = 105°

∴ ∠ACB = 180° – 105° = 75°

∴ ∠BAC = 180° – 60° – 75° = 45°

47. (d) Angle traced by the hour hand in 6 hours

$$= \left(\frac{360}{12} \times 6 \right)^{o} = 180°$$

48. (a)

49. (b) M. P. = Rs 30, Discount = 15% and Rs 1.50 more.

S. P. = Rs $\left\{ \left(\frac{85}{100} \times 30 \right) - \frac{3}{2} \right\}$

$$= Rs \left(\frac{51}{2} - \frac{3}{2} \right) = Rs.24, \ Gain\% = 20\%$$

C.P. = Rs $\left(\frac{100}{120} \times 24 \right)$ = Rs. 20

50. (c) Let the distance travelled on foot be x km.

Then, distance covered on bicycle

$$= (61 - x) \ km$$

$$\therefore \frac{x}{4} + \frac{61 - x}{9} = 9$$

$$\Rightarrow 9x + 4 (61 - x) = 324$$

$$\Rightarrow 5x = (324 - 244) = 80 \Rightarrow x = 16$$

51. (d)

52. (c) $\dfrac{\cos^2 \theta}{\cot^2 \theta - \cos^2 \theta} = 3$

$$\Rightarrow \cos^2 \theta = 3\cot^2 \theta - 3\cos^2 \theta$$

$$\Rightarrow 4\cos^2 \theta = 3\cot^2 \theta = 3\frac{\cos^2 \theta}{\sin^2 \theta}$$

$$\Rightarrow 4\cos^2 \theta - \frac{3\cos^2 \theta}{\sin^2 \theta} = 0$$

$$\Rightarrow \cos^2 \theta \left(4 - \frac{3}{\sin^2 \theta} \right) = 0$$

$$\therefore 4 - \frac{3}{\sin^2 \theta} = 0$$

$$\Rightarrow 4\sin^2 \theta = 3$$

$$\Rightarrow \sin \theta = \frac{\sqrt{3}}{2} = \sin 60°$$

53. (b) (A + B)'s 1 day's work = $\dfrac{1}{12}$

(B + C)'s 1 day's work = $\dfrac{1}{20}$

(C + A)'s 1 day's work = $\dfrac{1}{15}$

On adding,

2(A+B+C)'s 1 day's work

$$= \frac{1}{12} + \frac{1}{20} + \frac{1}{15} = \frac{5 + 3 + 4}{60} = \frac{12}{60} = \frac{1}{5}$$

∴ (A + B + C)'s 1 day's work = $\dfrac{1}{10}$

∴ A, B and C together will complete the work in 10 days.

54. (c) Let the average after 19th innings be x. Then, average after 18th innings = (x – 4).

$$19x - 18(x - 4) = 98$$

$$\Rightarrow x + 72 = 98 \Rightarrow x = 26$$

∴ Average after 19th innings = 26

55. (b) Length of wire

$$= \frac{22}{7} \times 42 = 132 \text{ cm.}$$

Let the length of rectangle = 6x cm and breadth = 5x cm

∴ 2 (6x + 5x) = 132

$$\Rightarrow 22x = 132$$

$$\Rightarrow x = \frac{132}{22} = 6$$

∴ Length of rectangle = 36 cm and breadth = 30 cm

∴ Area of rectangle = 36 × 30 = 1080 cm²

56. (b) $a^2+b^2+c^2 = ab+bc+ac$

$$\Rightarrow 2(a^2+b^2+c^2) = 2(ab+bc+ac)$$

$$\Rightarrow a^2-2ab+b^2+b^2-2bc+c^2+c^2-2ac+a^2=0$$

$$\Rightarrow (a-b)^2+(b-c)^2+(c-a)^2=0$$

∴ a=b b=c c=a

$$\therefore \frac{a+c}{b} = \frac{a+a}{a} = 2$$

57. (a)
58. (c)

59. (b) $S.I = \left(6000 \times \frac{5}{100} \times 2\right) = ₹ 600$

$$C.I = \left[5000 \times \left(1+\frac{8}{100}\right)^2 - 5000\right]$$

$$= \left[\left(5000 \times \frac{27}{25} \times \frac{27}{25}\right) - 5000\right]$$

= (5832 – 5000) = ₹ 832

CI – SI = (832 – 600) = ₹ 232

60. (b)
61. (d) 62. (a) 63. (b) 64. (b) 65. (c)
66. (d) 67. (a) 68. (b) 69. (a) 70. (c)
71. (a) 72. (c) 73. (d) 74. (b) 75. (b)
76. (c) 77. (d) 78. (a) 79. (b) 80. (a)
81. (a) 82. (c) 83. (a) 84. (a) 85. (c)
86. (c) 87. (a) 88. (d) 89. (d) 90. (d)
91. (d) 92. (b) 93. (c) 94. (d) 95. (b)
96. (d) 97. (d) 98. (b) 99. (d) 100. (b)