

RRB JE(PRE) SPEED TEST – 2

1. (D) Let no. of cubes of side a that can be made by melting the given cuboid = n
Total volume of these cubes = na^3
Total volume of all the smaller cubes is equal to the volume of the original cube as $a = 2$
 $= 8 \text{ cm} \times 4 \text{ cm} \times 27 \text{ cm}$
 $= 2^3 \times n$
 $n = 108$

2. (C) $A B C = 25$ days
 $15 \ 10 \ 6 = 31 \times 25$
 $= 755$
 $= \frac{755}{6}$

3. (D) The length of two tangents drawn From an external point to a circle are equal
 $AD = AF$
 $BD = BE$
 $FC = CE$

4. (D) $= [1^2 + 2^2 + 3^2 + 4^2 + 5^2 + 6^2 + 7^2 + 8^2 + 9^2 + 10^2 + 11^2] - 1$
 $= \text{The sum of squares of First 11 natural numbers} - 1$
 $= \frac{n(n+1)(2n+1)}{6}$
 $n = 11$

The sum of squares of First 11 natural numbers -1

$$= \frac{11(11+1)(22+1)}{6} - 1$$

$$= 506 - 1$$

$$= 505$$

5. (A) $\frac{4 - \sqrt{6}}{2\sqrt{2} - \sqrt{3}} = ?$
 $= \frac{\sqrt{2}(2\sqrt{2} - \sqrt{3})}{2\sqrt{2} - \sqrt{3}} = ?$
 $= ? = \sqrt{2} = 1.414$

6. (D) $1 + 2 + 3 + \dots + N$
Least three digit number
 $= \frac{n(n+1)}{2}$
 $= \text{Put } n = 14$
 $\frac{14 \times 15}{2} = 105$

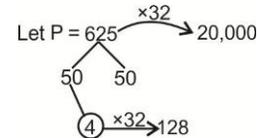
7. (C) $d + 500 = \left(72 \times \frac{5}{18}\right) \times 60$

$$d = 1200 - 500$$

$$= 700 \text{ meter}$$

8. (B) $= x^4 + \frac{1}{x^4} = (4^2 - 2)^2 - 2$
 $= 194$

9. (D) $8\% = \frac{2}{25}$



10. (B) $\text{Discount}\% = \frac{2}{2+6} \times 100$
 $= 25\%$

11. (D) Sum of the age of all Members = $23 \times 4 = 92$
Age youngest members = $92 - (5 \times 4) = 72$
Average age at the time of birth of youngest member = $\frac{72}{3}$
 $= 24$

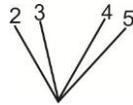
12. (D) First eight even natural numbers are 2, 4, 6, 8, 10, 12, 14, 16
First seven multiples of Five are 5, 10, 15, 20, 25, 30, 35
 $2 \times 4 \times 6 \times 8 \times 10 \times 12 \times 14 \times 16 \times 5 \times 10 \times 15 \times 20 \times 25 \times 30 \times 35$
 $= 2^{19} \times 3^3 \times 5^9 \times 7^2$
we will get a zero when 2×5 is a Factor,
No. of 2×5 Factors = 9
No. of Zeroes = 9

13. (C) $(a + b)^2 + a^2 + b^2 + 2ab$
 $(8)^2 = 32 + 2ab$
 $2ab = 64 - 32 = 32$
 $ab = 16$
 $\therefore a^3 + b^3 = (a + b)(a^2 + b^2 - ab)$
 $= (8) \times (32 - 16)$
 $= 8 \times 16$
 $= 128$

14. (A) When $x^3 + 5x^2 - kx + 6$ is divided by $(x - 2)$ remainder is 0
 $x = 2$ is root of the equation
Put $x = 2$
 $2^3 + 5 \cdot 2^2 - 2k + 6 = 0$
 $k = 17$

15. (B) $\frac{40}{140} = \frac{2}{7}$

16. (B)

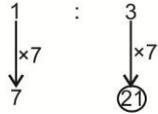


LCM 60

$$\begin{aligned} \text{Required number} &= 60 + 1 \\ &= 61 \end{aligned}$$

17. (C)

Radius : Height

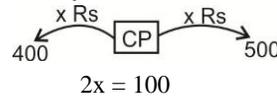


18. (B)



$$\frac{\frac{3}{4} \times 40}{5}$$

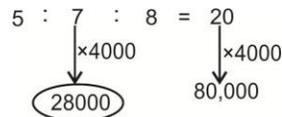
= 6 days



19. (C)

$$\begin{aligned} x &= 50 \\ \text{CP} &= 500 - 50 = 450 \end{aligned}$$

20. (A)



21. (C)

$$\begin{aligned} \text{CP} &= 100\% \\ \text{MP} &= 125 \\ \text{SP} &= 125 \times \frac{90}{100} \end{aligned}$$

$$\begin{aligned} &= 112.5 \\ \text{Profit} &= 12.5\% \end{aligned}$$

22. (C) The compound Ratio for the ratio (a : d), (b : e), (c : f) is (abc : def)

$$\begin{aligned} &= [3x/(4x+3)] \times [(5x-2)/2x] = 14/9 \\ &= 3 \times 9 (5x-2) = 2 \times 14 \times (4x+3) \\ &= 135x - 54 = 112x + 84 \\ &= 135x - 112x = 54 + 84 \\ &= 23x = 138 \\ &= x = \frac{138}{23} \end{aligned}$$

$$\therefore x = 6$$

23. (C) Given no. is 22^{471} unit digit of 2

$$\begin{aligned} 2^1 &= 2 \\ 2^2 &= 4 \\ 2^3 &= 8 \\ 2^4 &= 6 \\ 2^5 &= 2 \end{aligned}$$

The digit is repeating after every 4th power

$$\begin{aligned} 22^{471} &= 22^{468} \times 22^3 = (22^4)^{117} \\ \text{unit digit of Expression } &(22^4)^{117} \times 22^3 \end{aligned}$$

24. (C)

$$\begin{aligned} \text{The Sum of 100 members} &= 30 \times 100 \\ &= 3000 \\ 23 \text{ and } 11 \text{ was added as } &32 \text{ and } 12 \\ \therefore \text{Actual Sum} &= 3000 - 32 - 12 + 23 + 11 \\ &= 2990 \end{aligned}$$

$$\text{Correct mean} = \frac{2990}{100}$$

$$= 29.90$$

25. (A)

$$\text{Speed} = \frac{90}{2.5} \times \frac{5}{18}$$

$$= 10 \text{m/sec}$$

26. (B)

$$\begin{aligned} \text{Total increment in 3 years} &= 27\% \\ \text{Increment in 1 year is equal to ROI} &= \frac{27}{3} \\ &= 9\% \end{aligned}$$

27. (B)

$$\begin{aligned} I_1 + I_2 + I_{12} &= 12x \\ I_1 + I_2 + \dots + I_{12} + 95 &= 13(x + 4) \\ 12x + 95 &= 13x + 52 \\ x &= 43 \\ &= 43 + 4 \\ &= 47 \end{aligned}$$

28. (C)

$$\begin{aligned} \text{Let fraction is } &x \\ 2x + \frac{5}{x} &= 7 \\ 2x^2 - 7x + 5 &= 0 \\ (x-1)(2x-5) &= 0 \\ x &= \frac{5}{2} \text{ or } 1 \end{aligned}$$

29. (B)

$$\tan \theta + \frac{1}{\tan \theta} = 2$$

$$\begin{aligned} \tan \theta &= 1 \\ \theta &= 45^\circ \\ \text{Sin}^2 \theta + \text{cosec}^2 \theta &= \frac{1}{2} + 2 \\ &= 2 \frac{1}{2} \end{aligned}$$

30. (D)

$$\begin{aligned} \text{Difference} &= 4000 - 1500 \\ &= 2500 \end{aligned}$$

31. (B)

opposite letters Pairs

32. (D)

Silicon is a Semiconductor and all others are good conductors.

33. (C)

Except (c), all others follow + 2 series

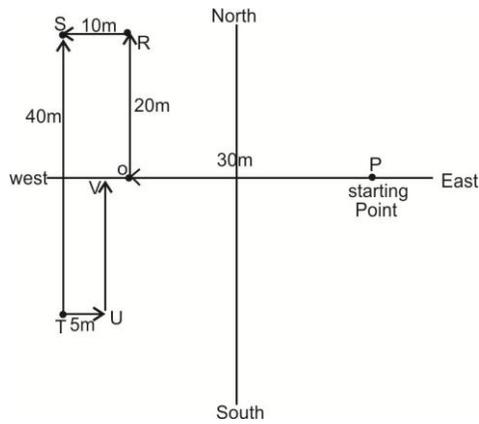
34. (B)

Add 1.5 in each term.

35. (C)

Every Pair of letters increase by + 3

36. (A)

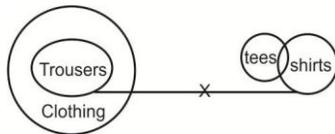


$12 \times 3 = 36, 12 \times 3^2 = 108,$
 $12 \times 3^3 = 324$
 $14 \times 3 = 42, 14 \times 3^2 = 126$
 $14 \times 3^3 = 378$

- 53. (D)** Proton is discovered by Rutherford.
54. (D) Except (d), all others are Prime numbers
55. (B)

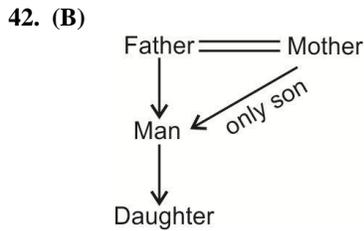
R	A	A	M
18	1	1	13 = 33
R I T I K	A	=	68
18 9 2 0 9 11 1			
P I H U			
16 9 8	21 =	54	

- 37. (A)**
38. (C)



- 39. (B)** MATHEMATICS
 5 0 2 # 4 5 0 2 3 \$ 9
 LOGIC
 8 & 6 3 \$
 CHEMICAL
 \$ # 4 5 3 \$ 0 8

- 40. (C)**
41. (B) $18 \div 6 \times 9 = 27$
 $27 = 27$



- 43. (C)**
44. (B) E is not Present in H U M B L I N G
45. (C)

- 46. (A)**
47. (D) $18 : 108 \rightarrow 18 \div 3 = 6,$
 $18 \times 6 = 108$
 $7 : 42$ is not Divisible by 3
48. (B) $(6 \times 5) + (8 \times 3) = 54$
 $(9 \times 7) + (3 \times 2) = 69$
 $(5 \times 4) + (2 \times 1) = 22$

- 49. (B)** Science
 Scramble
 Script
 Scripture
 Scrutiny

- 50. (B)**
51. (D)
52. (C) $8 \times 3 = 24, 8 \times 3^2 = 72, 8 \times 3^3 = 216$

RRB JE (PRE)- SPEED TEST – 2**ANSWER KEY**

1(D)	2(C)	3(D)	4(D)	5(A)	6(D)	7(C)	8(B)	9(D)	10(B)
11(D)	12(D)	13(C)	14(A)	15(B)	16(B)	17(C)	18(B)	19(C)	20(A)
21(C)	22(C)	23(C)	24(C)	25(A)	26(B)	27(B)	28(C)	29(B)	30(D)
31(B)	32(D)	33(C)	34(B)	35(C)	36(C)	37(A)	38(C)	39(B)	40(C)
41(B)	42(B)	43(C)	44(B)	45(C)	46(A)	47(D)	48(B)	49(B)	50(B)
51(D)	52(C)	53(D)	54(D)	55(B)	56(A)	57(D)	58(C)	59(C)	60(D)
61(D)	62(A)	63(A)	64(C)	65(B)	66(C)	67(D)	68(C)	69(B)	70(D)
71(C)	72(B)	73(C)	74(D)	75(B)	76(C)	77(C)	78(C)	79(A)	80(A)
81(B)	82(C)	83(A)	84(C)	85(D)	86(A)	87(A)	88(B)	89(B)	90(C)
91(A)	92(C)	93(D)	94(D)	95(D)	96(D)	97(C)	98(A)	99(B)	100(C)