

RRB ALP CBT-1
Answers with Explanation-7

1. (C) [$\therefore \sqrt{a} = a^{\frac{1}{2}}$]

$$\sqrt{3^n} = 729$$

$$(3^n)^{\frac{1}{2}} = (3^2)^3$$

$$3^n = 3^{6 \times 2}$$

$$n = 12$$

2. (A) One day work of Harish and Vimal = $\frac{1}{20}$

$$\text{Their 15 day's work} = \frac{15}{20} = \frac{3}{4}$$

$$\text{Remaining work} = 1 - \frac{3}{4} = \frac{1}{4}$$

$$\frac{1}{4} \text{ work has been completed by Harish} = 10 \text{ days}$$

$$\text{He will do entire work} = 10 \times 4 = 40 \text{ days}$$

3. (D) First Number \times Second Number
= LCM \times HCF

$$8 \times 54 = 72 \times x$$

$$x = 6$$

4. (A) ATQ,

$$CP \times 20 = SP \times 15$$

$$CP : SP = 15 : 20$$

$$\text{Profit percentage} = \frac{5}{15} \times 100 = 33.33\%$$

5. (D) 1st minute = $2^1 = 2$

$$2^{\text{nd}} \text{ minute} = 2^2 = 4$$

$$\text{So, in 29 min} = 2^{29} = 536870912$$

$$\text{last 30 min} = 2^{30} = 1073741824$$

We have seen that 29th min is half of the 30th min.

6. (B) All are wild animals except cow. While cow is a domestic animal

7. (B)

8. (A) $I = \frac{90}{5} + 7 = 25$

$$II = \frac{80}{4} + 6 = 26$$

$$III = \frac{120}{6} + 10 = 30$$

9. (A)

10. (C) aabcd/abbcd/abccd/abcdd

11. (B)

64,	60,	52,	40,	24,	4
4	8	12	16	20	
4	4	4	4		

12. (B) As, Ampere is the SI unit of electric current.

Similarly, Fathom is the SI unit of **Depth of water.**

13. (B) As,

H	J	L	N
+8↓	+8↓	+8↓	+8↓
P	R	T	V

Similarly,

B	D	F	H
+8↓	+8↓	+8↓	+8↓
J	L	N	P

14. (A) **43152**

15. (D) $K > R > D > V > M$

16. (D) $L = 12 + 8 = 20$ **L = 12 + 8 = 20**

$$E = 5 + 8 = 13$$
 I = 9 + 8 = 17

$$A = 1 + 8 = 9$$
 G = 7 + 8 = 15

$$D = 4 + 8 = 12$$
 H = 8 + 8 = 16

$$E = 5 + 8 = 13$$
 T = 20 + 8 = 28

$$R = 18 + 8 = 26$$

17. (C) $16 \times 8 \div 4 - 3 + 9$

After changing the signs as per given details,

$$16 - 8 + 4 \div 3 \times 9$$

$$= 8 + 12 = \mathbf{20}$$

18. (D)

19. (B) As, $3 \times 4 + 5 \times 6 = 42$

and, $4 \times 4 + 7 \times 5 = 51$

Similarly, $3 \times 4 + 5 \times 5 = \mathbf{37}$

20. (D)

21. (A) a a **b** a b c a b c d a b c d e

22. (C) As, $2 * 8 * 1 \Rightarrow (8+1)^2 = 9^2 = 81$
 and, $3 * 3 * 3 \Rightarrow (3+3)^3 = 6^3 = 216$
 Similarly, $4 * 1 * 4 \Rightarrow (1 + 4)^4 = 5^4 = \mathbf{625}$
23. (D)
24. (A)
25. (C) $\frac{2}{\times 2-1}, \frac{3}{\times 2-1}, \frac{5}{\times 2-1}, \frac{9}{\times 2-1}, \frac{17}{\times 2-1}, \frac{33}{\times 2-1}$
26. (D) $P-Q = (3^2-2^2) + (7^2-6^2) + (11^2-10^2) + \dots + (23^2-22^2) + 27^2$
 $= (3-2)(3+2) + (7-6)(7+6) + (11-10)(11+10) + \dots + (23-22)(23+22) + 27^2$
 $= (3+2) + (7+6) + (11+10) + \dots + (23+22) + 27^2$
 $= (3+7+11+\dots+23) + (2+6+10+\dots+22) + 27^2$
 $= \frac{6}{2} \times (3+23) + \frac{6}{2} (2+22) + 27^2$
 $= 3 \times 26 + 3 \times 24 + 27^2$
 $= 3(26+24) + 27^2$
 $= 150 + 729$
 $= \mathbf{879}$
27. (C) $x = -2, 3$ and -5 , satisfies the equation $x^3 + 4x^2 - 11x - 30 = 0$
 $\therefore \mathbf{(x-3), (x+2) \text{ and } (x+5)}$ are the factors of $x^3 + 4x^2 - 11x - 30$
28. (B) Let the length of train be L
 ATQ,

$$\frac{L}{40 \times \frac{5}{18}} = 9$$

$$\Rightarrow L = \frac{9 \times 40 \times 5}{18} m$$

$$\Rightarrow \mathbf{L = 100m}$$
29. (B) R (radius) = 5cm
 H (height) = 12cm
 l (slant height) = $\sqrt{(5)^2 + (12)^2} = 13$ cm
 Curved surface area of cone = $\pi.R.l$
 $= \frac{22}{7} \times 5 \times 13 = \mathbf{204.28 \text{ cm}^2}$
30. (D) As the power of all terms of the expression are not same,

- the value of $\frac{3A^2 + 4B}{3A - 4B^2}$ cannot be determined.
31. (D)

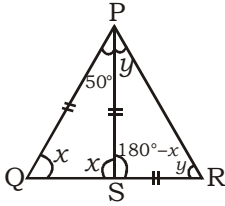
A	B
Efficiency	3 : 1
Day	1 : 3

 ATQ,
 $(3 - 1)$ units = 2 units = 40 days
 $\Rightarrow 1$ unit = 20 days
 A \Rightarrow 20 days
 B \Rightarrow 60 days
 Let work be 60 units
 A's one day work = 3 units
 B's one day work = 1 units
 (A + B)'s one day work = 4 units
 \therefore Required number days = $60 \times \frac{2}{3 \times 4}$
 $= \mathbf{10 \text{ days}}$
32. (B) $N = 270 \times 126 \times 324 \times 55$
 $= 2^4 \times 3^9 \times 5^2 \times 7 \times 11$
 \therefore maximum value of $m = \mathbf{9}$
33. (B) Let the price of chair be x and that of table by y .
 ATQ,
 $2x + y = 800 \quad \dots(1)$
 $x + 2y = 700 \quad \dots(2)$
 $mx + my = 27500 \quad \dots(3)$
 Adding equation (1) & (2),
 $3x + 3y = 1500$
 $\Rightarrow x + y = 500 \quad \dots(4)$
 Dividing (3) by (4)

$$\frac{mx + my}{x + y} = \frac{27,500}{500}$$

 $\Rightarrow \mathbf{m = 55}$
34. (C) Let the four consecutive even numbers = 2, 4, 6 & 8
 L.C.M of 2, 4, 6, 8 is 384
 \therefore Required number = $\mathbf{384}$

35. (C)



In ΔPQS ,

$$50^\circ + x + x = 180^\circ$$

$$\Rightarrow 2x = 130^\circ$$

$$\Rightarrow x = 65^\circ$$

In ΔPSR ,

$$180^\circ - x + y + y = 180^\circ$$

$$\Rightarrow -x + 2y = 0$$

$$\Rightarrow x = 2y$$

$$\Rightarrow y = \frac{65^\circ}{2} = 32.5^\circ$$

$$\angle QPR = \angle QPS + \angle SPR = 50^\circ + 32.5^\circ$$

$$\therefore \angle QPR = 82.5^\circ$$

36. (B) Let the side of square be a and that of triangle be b .

ATQ,

$$\sqrt{2}a = 15\sqrt{2}$$

$$\Rightarrow a = 15\text{cm}$$

$$\text{Perimeter of square} = 4 \times 15 = 60\text{ cm}$$

$$\text{Perimeter of triangle} = 60\text{ cm} = 3b$$

$$\Rightarrow b = 20\text{ cm}$$

$$\begin{aligned} \Rightarrow \text{Area of triangle} &= \frac{\sqrt{3}}{4} b^2 = \frac{\sqrt{3}}{4} \times 20 \times 20 \\ &= 100\sqrt{3}\text{ cm}^2 \end{aligned}$$

37. (A) Volume of sphere = $\frac{4}{3}\pi (6)^3$

$$= 288\pi\text{ cm}^3$$

Let the radius of wire be r

$$\text{volume of wire} = \pi r^2 \cdot 72 \times 100$$

$$\text{ATQ, } 288\pi = 72 \times 100 \times \pi r^2$$

$$\Rightarrow \frac{4}{100} = r^2$$

$$\Rightarrow r = 0.2\text{ cm}$$

38. (D) Required percentage

$$\frac{65}{(25 + 65)} \times 100$$

$$= \frac{65}{90} \times 100 = 72.23$$

39. (C) Number of cars manufactured in month of April and May = $2620 - 1520 = 1100$

$$40. (B) \sqrt{-\sqrt{3} + \sqrt{3 + 8\sqrt{7 + 4\sqrt{3}}}}$$

$$= \sqrt{-\sqrt{3} + \sqrt{3 + 8\sqrt{(2 + \sqrt{3})^2}}}$$

$$= \sqrt{-\sqrt{3} + \sqrt{3 + 8(2 + \sqrt{3})}}$$

$$= \sqrt{-\sqrt{3} + \sqrt{3 + 16 + 8\sqrt{3}}}$$

$$= \sqrt{-\sqrt{3} + \sqrt{19 + 2 \times 4 \times \sqrt{3}}}$$

$$= \sqrt{-\sqrt{3} + \sqrt{(4 + \sqrt{3})^2}}$$

$$= \sqrt{-\sqrt{3} + 4 + \sqrt{3}}$$

$$= \sqrt{4} = 2$$

RRB ALP - 07 (ANSWER KEY)

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|---------|---------|---------|---------|
| 1. (C) | 20. (D) | 39. (C) | 58. (C) |
| 2. (A) | 21. (A) | 40. (B) | 59. (B) |
| 3. (D) | 22. (C) | 41. (D) | 60. (C) |
| 4. (A) | 23. (D) | 42. (B) | 61. (A) |
| 5. (D) | 24. (A) | 43. (A) | 62. (B) |
| 6. (B) | 25. (C) | 44. (B) | 63. (B) |
| 7. (B) | 26. (D) | 45. (B) | 64. (D) |
| 8. (A) | 27. (C) | 46. (C) | 65. (D) |
| 9. (A) | 28. (B) | 47. (B) | 66. (B) |
| 10. (C) | 29. (B) | 48. (B) | 67. (C) |
| 11. (B) | 30. (D) | 49. (B) | 68. (D) |
| 12. (B) | 31. (D) | 50. (C) | 69. (D) |
| 13. (B) | 32. (B) | 51. (C) | 70. (C) |
| 14. (A) | 33. (B) | 52. (C) | 71. (A) |
| 15. (D) | 34. (C) | 53. (A) | 72. (C) |
| 16. (D) | 35. (C) | 54. (B) | 73. (B) |
| 17. (C) | 36. (B) | 55. (C) | 74. (A) |
| 18. (D) | 37. (A) | 56. (B) | 75. (B) |
| 19. (B) | 38. (D) | 57. (D) | |