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Prelims Answer Key

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Solutions

1. Ans. B.
6, 8, 13, 23, ?, 56
The series follow double step difference.
8 – 6 = 2
13 – 8 = 5 (5-2 = 3)
23 – 13 = 10 (10-5 = 5)
? – 23 = x (x-10 = 7, i.e. x= 17)
Thus, ? = 17 + 23 = 40

2. Ans. A.
7, 8, 18, 57, 232, ?
8 = 7*1 + 1
18 = 8*2 + 2
57 = 18*3 +3
232 = 57*4 + 4
1165 = 232*5 + 5

3. Ans. D.
8, 5, 6, 10, 21, ?
5 = 8*0.5 + 1
6 = 5*1 + 1
10 = 6*1.5 + 1
21 = 10*2 + 1
? = 21*2.5 + 1 = 53.5

4. Ans. C.
4, 18, 46, 102, ?, 438
18 = 4 + (7*2)
46 = 18 + (7*4)
102 = 46 + (7*8)
? = 102 + (7*16), i.e. ? = 214
438 = 214 + (7*32)

5. Ans. B.
109, 110, 102, 129, 65, ?
$110 = 109 + 1^3$
$102 = 110 - 2^3$
$129 = 102 + 3^3$
$65 = 129 - 4^3$
$? = 65 + 5^3$, i.e. ? = 190

6. Ans. B.
Required ratio = 1715: 1250 = 343:250

7. Ans. C.
Required total number of sales = 15.5 + 13.5 + 7.5 + 5.6 + 16.3 + 13.5= 71900

8. Ans. A.
Shop P's sales= 91.4
Shop Q's sales=65.05
Shop R's sales=71.9
Shop S's sales=43.8
Shop a T's sales=46.8

9. Ans. C.
Required difference = 6.3 – 5.9 = 0.4

10. Ans. C.
Required total number of sales = 14.4+7.4+15.7=37.5

11. Ans. B.
Take nearest values
$(15)^2 + (19.99)^2 + (24.001)^2 = 225 + 400 + 576 = 1200$ (approx)

12. Ans. C.
12.25 × ? × 21.65 = 3545.64 + 23.36
12*?*22= 3546+23
? = 3569/264 = 13

13. Ans. B.
? = (1005/80) = 12.5625 = 13 (Approx)
14. Ans. B.

$$? = 605 \times \frac{125}{100} + 218 \times \frac{4}{5}$$

$$? = 605 \times \frac{5}{4} + 218 \times \frac{4}{5}$$

$$? = \frac{3025}{4} + \frac{872}{5}$$

$$? = 756.25 + 174.4$$

$$? = 930.65$$

? = 931 (Approx.)

15. Ans. B.
Take nearest values
$\sqrt{580} \times \sqrt[3]{510} + 49.999 \times 3.999 = ?$
24 x 8 + 200 = 392

16. Ans. C.
4005.33 ÷ 19.89 × 1.9 = 4005 ÷ 20 × 2 = 400.5 = 400 (Approx.)

Hence option C is correct

17. Ans. E.
15x 12 + 41 x 21 = ?
180 + 861 = 1041

18. Ans. A.
$23 \times 17.5 \approx 403$ & $321 \div 52 \approx 6$
Then, 403 + 64 – 6 = 466 – 6 = 460

19. Ans. D.

$\frac{7}{8} \times 616 \times 12 \div 16 + ? = 323 + 81 + \frac{4}{3} \times ?$

$539 \times 12 \div 16 + ? = 404 + \frac{4}{3} \times ?$

$539 \times \frac{3}{4} + ? = 404 + \frac{4}{3} \times ?$

$\therefore \frac{4}{3} \times ? - ? = \frac{(1617-1616)}{4}$

$\therefore ? = \frac{3}{4}$

20. Ans. B.
16.007 × 14.995 × 6.080 =?
Approx Value = 16 × 15 × 6
= 1440

21. Ans. C.
? % of 780 = ? × 780/ 100 = 7.8?
Hence ?% of 780 - 335 = 250 → 7.8? = 250 + 335 = 585
? = 585/ 7.8 =75

22. Ans. A.
√? – 21 = √1521 + √576 ---> √? – 21 =63
√? = 84 ---> 7056

23. Ans. E.

$(2\sqrt{2\times2\times2\times7\times7} - 21) + (\sqrt{2\times2\times2} - 7)^2 = (a)^2$

$(2\times14\sqrt{2} - 21) + (2\sqrt{2} - 7)^2 = (a)^2$

$28\sqrt{2} - 21) + 8 + 49 - 28\sqrt{2} = (a)^2$

$28\sqrt{2} - 21 + 57 - 28\sqrt{2} = (a)^2$

$36 = (a)^2$

$a = 6$

24. Ans. C.

$\frac{8.5}{0.25} + \frac{4.4}{0.2} = \frac{x}{100} \times 80$

$34 + 22 = 0.8x$

$56 = 0.8x$

$x = 70$

25. Ans. B.
1456 ÷ 16 × 14 + 22 = (?)^2
91 × 14 + 22 = (?)^2
1274 + 22 = (?)^2
(?)^2 = (36)^2
? = 36

26. Ans. D.
Let the speed of stream be *x* kmph. Therefore,
Downstream speed= 16 kmph
Upstream speed = 11 kmph
Thus, the speed of stream = (16-11)/2=2.5 kmph
Hence, option D is correct.

27. Ans. A.

Principal = $\frac{1200 \times 100}{4 \times 8} = \text{Rs. } 3750$

New principal = 3 × 3750

Simple Interest = $\frac{3 \times 3750 \times 6 \times 3}{100} = \text{Rs. } 2025$

Hence option A is correct

28. Ans. A.

$CI = 1800\left[\left(1 + \frac{4}{100}\right)^2 - 1\right] = 1800 \times \left(\frac{676}{625} - 1\right)$

$= 1800 \times \frac{51}{625} = Rs.146.88$

29. Ans. B.
C.P. of 20 kg of rice = (672/14) × 20 = Rs.960
C.P. of 15 kg of wheat = (432/12) × 15 = Rs.540
C.P. of 16kg of sugar = (504/18) × 16 = Rs.448
Total cost = 960 + 540 + 448 = Rs.1948
Hence option B is correct

30. Ans. A.
Capital of A is employed in business for 10 months = Rs 16000
Capital of B is employed for 8 months = 5/8 × 16000 = Rs 10000
Capital of C is employed for 6 months = Rs 8000
Thus the ratio of distribution of profit = A : B : C
= 16000 × 10 : 10000 × 8 : 8000 × 6 = 160:80:48
= 10:5:3
Therefore the share of B = 5/18 × 6336 = Rs 1760
Hence Option A is correct

31. Ans. E.
Let Samir's monthly salary be Rs. x.
According to the question,
x - (52+23)% of x = 4500
x -75% of x = 4500
25% of x=4500
x= $\frac{4500 \times 100}{25} = Rs.\ 18000$

32. Ans. D.
Suppose the ages of Nishi and Vinnee are 6*x* and 5*x* yr.

$\because \frac{6x+9}{5x+9}=\frac{9}{8}$

48x + 72 = 45x + 81
48x – 45x = 81 - 72
3x = 9
x = 3
Required difference,
6x – 5x = x = 3yr

33. Ans. B.
Let cost price = cp
=> 7200 = CP(100-25)/100
CP = 9600
Selling price to gain 25% profit
=> 9600+9600*25/100
= Rs.12000

34. Ans. C.

Speed of the Car = $\frac{540}{9}=60\text{km/hr}$

Speed of train = 2 x 60 = 120 km/hr
Speed of bike = 2/3 x 120 = 80 km/hr
Distance covered by bike in 5 h = 80 x 5 = 400km
Hence option C is correct

35. Ans. A.

Required days = $\frac{5}{8\times20}+\frac{8}{32\times8}$

$=\frac{2}{32}$

= 16 days

36. Ans. B.
Perimeter of the square = 72 cms
Side of the square = 72/4 = 18 cms
Perimeter of the rectangle = 72/2 = 36 cms
Breadth of the rectangle = 36/2 – 12 = 6 cms
Required difference = 18 – 6 = 12 cms
Hence Option B is correct

37. Ans. A.
There are total 12 balls in a buckets.
Required Probability .

$P(E)=\frac{n(E)}{n(S)}$

$=\frac{4}{12}\times\frac{6}{11}\times\frac{2}{10}\times3!$

$=\frac{4}{12}\times\frac{6}{11}\times\frac{2}{10}\times6=\frac{12}{55}$

38. Ans. E.
ARMOUR = 6 letters whereas R repeated twice

$\therefore \frac{6!}{2!}=\frac{6\times5\times4\times3\times2\times1}{2\times1}=360$

39. Ans. A.
Suppose cost price = ₹ x
90% of 15000 = 108% of *x*

$15000\times\frac{90}{100}=x\times\frac{108}{100}$

$150\times90=x\times\frac{108}{100}$

$x=\frac{150\times90\times100}{108}$

x = ₹ 12500

40. Ans. B.

$\frac{x+y}{2}=27$

$\Rightarrow x+y=54.....(i)$

$\Rightarrow x-y=30.....(ii)$

$so,\ x=42 \text{ and } y=12$

41. Ans. D.
After arranging,
GHC LAT MKU BGP SRW
GHC, BGP and SRW have more than two different consonants.

42. Ans. B.
After arranging,
HGB SLA TMK OGB VSR
Only SLA ends with vowel.

43. Ans. A.
Second letter of the last word from the left is 'R'.
Third letter of the fourth word from the right is 'S'.
So between R and S there is no letter in English alphabetical series.

44. Ans. B.
After arranging,
SRV MKT LAS GHB BGO
LAS is third from right.

45. Ans. B.
After arranging,
HIC MAT NLU CHO TSW
In TSW have no vowels.

46. Ans. D.
Explanation
The number after rearrangement will be 832690714435
Third from the left end after the rearrangement is = 2

47. Ans. D.
Explanation

R	E	C	O	V	E	R	E	D
18	5	3	15	22	5	18	5	4

There are four such pairs

48. Ans. A.
Given statement-
$K > P > Q \geq T$, $K = Y$, $K \leq Z$
for conclusion
I. $Y > T$
$Y=K > P > Q \geq T$
$Y > T$ ---- True
for conclusion
II. $T>Z$
$Z \geq K > P > Q \geq T$
$T>Z$ ---- false
Hence, only conclusion I is true.

49. Ans. D.
Given statement - $A \geq Q$, $B \leq T$, $A = B$,
for conclusion
I. $B = Q$
$B=A \geq Q$
$B=Q$ is false
II. $A>Q$
$A \geq Q$
$A>Q$ is false
Hence, neither conclusion I nor II is true.
50. Ans. D.
Given Statement:
$Z \leq A$, $A>R$, $A = W$
for the conclusion I
$Z \leq A>R$
I. $R<Z$ --- is false
for the conclusion II
$Z \leq A=W$
II. $Z < W$ --- is false
Hence, neither conclusion I nor II is true.

51. Ans. C.
Given statement:
$A = Y \leq C > W$
for the conclusion I
$A = Y \leq C$
$A \leq C$
I. $C=A$ --- is false
for the conclusion II
$A = Y \leq C$
$A \leq C$
II. $C>A$ --- is false
But this forms complementary pairs, hence either conclusion I or II is true.

52. Ans. D.
Given statement:
$K < M$, $Y = X < Z$, $K < Y$
Conclusions:
for conclusion I
$Y>K < M$
I. $Y > M$ --- false
for conclusion II
$Z > X=Y>K < M$
II. $M > Z$ --- false
Hence, neither conclusion I nor II is true.

53. Ans. D.

Floor	Person
7	I
6	L
5	N
4	K
3	M
2	J
1	O

I lives on 7th floor

54. Ans. A.

Floor	Person
7	I
6	L
5	N
4	K
3	M
2	J
1	O

None person lives between L and N

55. Ans. B.

Floor	Person
7	I
6	L
5	N
4	K
3	M
2	J
1	O

J lives on floor numbered 2

56. Ans. C.

Floor	Person
7	I
6	L
5	N
4	K
3	M
2	J
1	O

Five person lives between I and O.

57. Ans. A.

Floor	Person
7	I
6	L
5	N
4	K
3	M
2	J
1	O

If K interchanges his floor with the one who lives on floor number two, then N lives exactly between L and J.

58. Ans. C.

Given arrangement -
1 5 8 4 2 1 5 2 3 4 5 6 7 8 9 5 1 4 1 5 6 8 7 4
9^{th} from the left 21^{st} from left means: 21 - 9 =12^{th} from the left end of the arrangement, i.e, 6.
Hence, option C is correct.

59. Ans. D.

Given arrangement -
1 5 8 4 2 1 5 2 3 4 5 6 7 8 9 5 1 4 1 5 6 8 7 4
There are only three pairs -
158, 152 and 156

60. Ans. B.

Given arrangement -
1 5 8 4 2 1 5 2 3 4 5 6 7 8 9 5 1 4 1 5 6 8 7 4
There is only pairs -
14

61. Ans. C.

Given arrangement -
1 5 8 4 2 1 5 2 3 4 5 6 7 8 9 5 1 4 1 5 6 8 7 4
There are only two such combination -
84 and 7 4

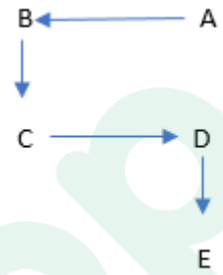
62. Ans. A.

If all the even digit are deleted from the above arrangement, therefore, new arrangement
1 5 1 5 3 5 7 9 5 1 1 5 7
tenth from the right end of the arrangement is 5
Hence, option A is correct.

63. Ans. B.

Position of B from the left end = Total students – Right end + 1 = 54 – 20 + 1 = 35
No of students between A and B = 35 – 15 – 1 = 19 students

64. Ans. A.

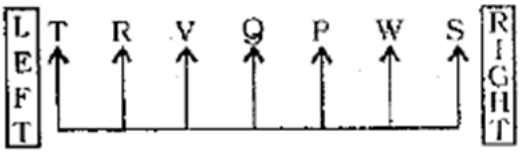


Prakash started at A and walked 30 metres towards West and reached at B, now he took left turn and walked 20 m and reached C, now he took left turn and walked 30m to reach at D, now he turned into right, therefore he was facing south after stopping.

65. Ans. B.

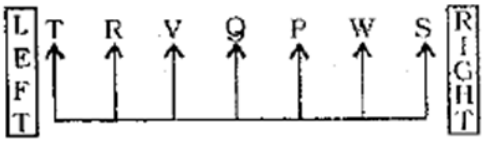
L, Q
If P is taller than only Q we can infer that Q is the shortest. Similarly if S is shorter than only L, we get to know that L is the tallest.

66. Ans. D.



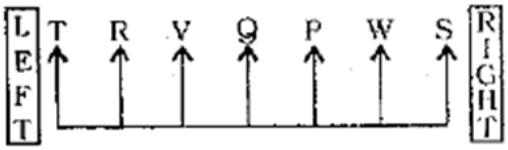
Except in VW, in all others first person is second to the left of the second person
Hence option D is correct

67. Ans. C.



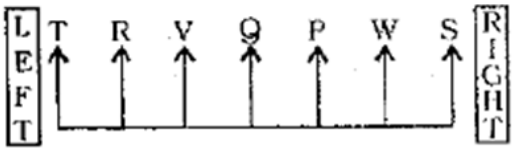
Two persons R and P
Hence option C is correct

68. Ans. B.



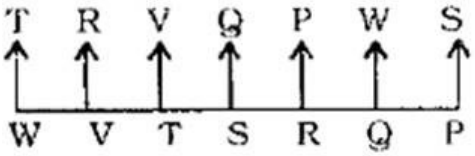
T and S sit at the extreme corners of the line

69. Ans. A.



T is second to the left of V

70. Ans. A.



Hence option A is correct

71. Ans. E.
3%85#6 = FKUDVT (Condition 3 is applicable)

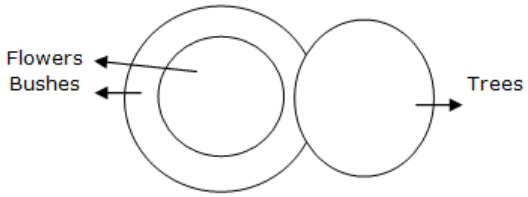
72. Ans. C.
#8@7$9 = VUXPXS (Condition 2 is applicable)

73. Ans. B.
7%96*5 = FKSPBD (None of the condition is applicable.
Hence, the code will be coded as given in the question)

74. Ans. B.
4&86%7 = ANGGKP (Condition 1 is applicable)

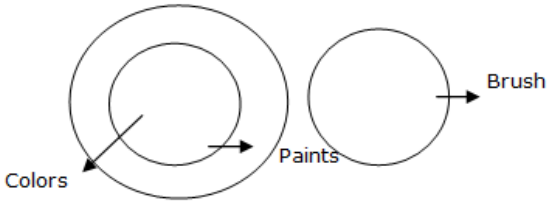
75. Ans. E.
9%8$*6 - FKUQBS
(condition 3 applicable)

76. Ans. A.
The Venn Diagram for the above relation is as follows:



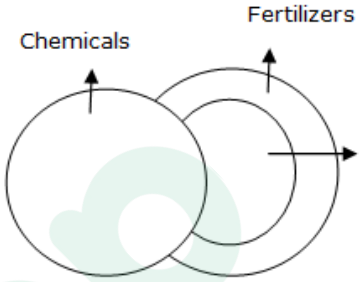
Thus only Conclusion I follow.
Hence Option A is correct

77. Ans. B.
The Venn Diagram for the above relation is as follows:



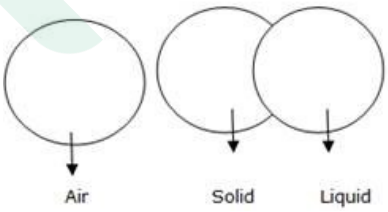
Clearly only Conclusion II follows.
Hence Option B is correct

78. Ans. A.
The Venn Diagram for the above relation is as follows:



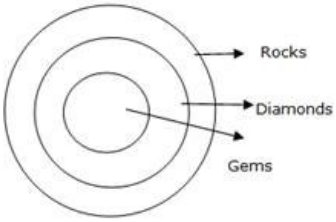
Thus only Conclusion I follows.
Hence Option A is correct

79. Ans. B.
The Venn Diagram for the above relation is as follows:



Thus only Conclusion II follows.
Hence Option B is correct, as no air is solid and some solid are liquids. So, some airs are definitely not liquids.

80. Ans. E.
The relation depicted in the above question is as follows:



Thus both the conclusion follows.
Hence Option E is correct

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