

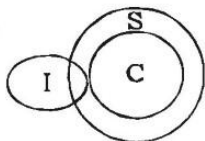
## ANSWER SET - 19

- (1) 2. (4) 3. (3) 4. (2) 5. (4)
- (3) 7. (3) 8. (2) 9. (4) 10. (2)
- (2) 12. (2) 13. (1) 14. (1) 15. (2)
- (3) 17. (2) 18. (1) 19. (1) 20. (1)
- (3) 22. (4) 23. (2) 24. (2) 25. (2)
- (2) 27. (1) 28. (2) 29. (2) 30. (1)
- (3) 32. (3) 33. (4) 34. (4) 35. (4)
- (2) 37. (3) 38. (1) 39. (3) 40. (4)
- (4) 42. (1) 43. (2) 44. (2) 45. (4)
- (2) 47. (3) 48. (3) 49. (4) 50. (1)
- (3) 52. (3) 53. (2) 54. (1) 55. (1)
- (2) 57. (3) 58. (4) 59. (1) 60. (3)
- (3) 62. (1) 63. (1) 64. (3) 65. (4)
- (4) 67. (4) 68. (3) 69. (2) 70. (4)
- (3) 72. (4) 73. (1) 74. (2) 75. (4)
- (2) 77. (2) 78. (4) 79. (1) 80. (4)
- (3) 82. (3) 83. (2) 84. (1) 85. (4)
- (3) 87. (1) 88. (4) 89. (3) 90. (2)
- (1) 92. (2) 93. (4) 94. (4) 95. (1)
- (4) 97. (1) 98. (3) 99. (2) 100. (4)

## EXPLANATION - 19

- (1) 2nd October is celebrated as Gandhi's birthday and 14th November is celebrated as **Nehru's** birthday.
- (4)  $6 \times 2 \times 3 = 36$   
 $\Rightarrow 36 \times 1.5 = 54$   
 $2 \times 8 \times 4 = 64 \Rightarrow 64 \times 1.5 = 96$
- (3) Ben stokes represents **England** cricket team and Ashish Nehra represents Indian cricket team.
- (2)  $18 \div 2 = 9 \Rightarrow 9 \times 9 \times 9 = 729$   
 $14 \div 2 = 7 \Rightarrow 7 \times 7 \times 7 = 343$
- (4) Except **406**, others are completely divisible by 17.
- (3) Except **Guwahati**, others are capital cities.
- (3) Except **Dream**, others are reality.
- (2) Only **Kidney** is an Internal organ.
- (4) Number of boys in the row =  $(18 + 6 + 5) = 29$   
Anil is just left of Arun. So, Anil is 17th from the left end.  
Number of boys to the right of Anil =  $(29 - 17) = 12$   
So, Anil is **13th** from the right end of the row.

10. (2)

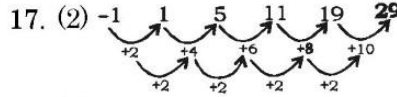
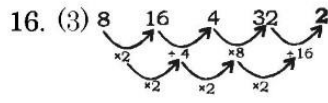


1. False 2. True  
Only conclusion (2) follows
- (2)  $12 \times 8 = 6 \times 16$ ,  $14 \times 5 = 10 \times 7$ ,  $18 \times 9 = 27 \times 6$
- (2)  $87 = 29 + 58 = 13 + 22 + 52$   
 $= 17 + 29 + 6 + 35$
- (1) LCM (12,8) = 24

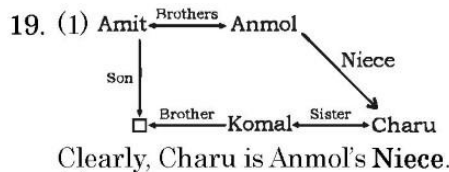
$$\begin{aligned} \text{LCM}(8,6) &= 24 \\ \text{LCM}(6,4) &= 12 \\ \text{LCM}(4,10) &= 20 \\ \text{LCM}(10,15) &= 30 \\ \text{LCM}(15,12) &= 60 \end{aligned}$$

14. (1)

15. (2) NATIVE



- (1) Continuous prime number has been used by considering three digits at a time in given pattern.  
2 3 5, 3 5 7, 5 7 1 1, 1 1 1 3 1 7  
235/357/571/171/113/111/317



Clearly, Charu is Anmol's **Niece**.

20. (1) abcd/ebcd/afcd/abgd/abch

21. (3) After changing the sign, we have

$$\begin{aligned} &= 18 - 16 + 4 + 2 \times 5 \\ &= 18 - 4 + 10 \\ &= 24 \end{aligned}$$

22. (4)

23. (2)  $18 \div 6 - 1 \times 2 = 3 - 2 = 1$

24. (2)

25. (2) 68 86 41 34

R I D E

51. (3) C.P. of 120 cups = ₹  $120 \times 8 =$   
₹ 960

20 cups are broken

∴ S.P. of 100 cups = ₹  $(100 \times 12)$

= ₹ 1200

Profit = ₹  $(1200 - 960) =$  ₹ 240

$$\therefore \text{Profit percent} = \frac{240}{960} \times 100$$

= 25 %

52. (3)  $\cos \theta \cdot \csc 29^\circ = 1$

$$\Rightarrow \csc 29^\circ = \frac{1}{\cos \theta} = \sec \theta$$

$$\Rightarrow \csc 29^\circ = \csc (90^\circ - \theta)$$

$$\Rightarrow 29^\circ = 90^\circ - \theta$$

$$\Rightarrow \theta = 90^\circ - 29^\circ = 61^\circ$$

53. (2) Given equations are:

$$3x + 4y = 5 \quad \dots(i)$$

$$x + 2y = 2 \quad \dots(ii)$$

On solving (i) & (ii)

$$\text{We will get } x = 1 \text{ and } y = \frac{1}{2}$$

$$\therefore 3x + 4y = 3 \times 1 + 4 \times \frac{1}{2} = 5$$

54. (1) Let the first train meet the second in x hrs after the start, then

$$40x + (x - 2) \times 50 = 110 \text{ (the 2nd train takes } (x - 2) \text{ hrs. as the train starts two hours later than the 1st)}$$

$$\Rightarrow 90x = 110 + 100 = 210$$

$$\therefore x = \frac{210}{90} \text{ hrs} = \frac{7}{3} \text{ hrs} = 2\frac{1}{3} \text{ hrs}$$

= 2 hrs 20 min

∴ Two trains meet at (9a.m + 2hrs 20 min) = **11.20 a.m.**

55. (1)  $x + \frac{1}{x} = \sqrt{2} \Rightarrow \left(x + \frac{1}{x}\right)^2 = 2$

$$\Rightarrow \left(x + \frac{1}{x}\right)^2 - 4 = 2 - 4$$

$$\Rightarrow \left(x - \frac{1}{x}\right)^2 = -2$$

$$\Rightarrow x - \frac{1}{x} = \sqrt{-2}$$

56. (2) Let there be x men originally, then 1 man will do the work in  $50x$  days.

Also, 1 man does the work in  $(x + 8)$  30 days.

$$\text{Now, } 50x = 30(x + 8)$$

$$\Rightarrow 20x = 240$$

$$\therefore x = \frac{240}{20} = 12 \text{ men}$$

∴ There were **12 men** originally.

57. (3) S.I. at the rate of 6% for 2 year

$$= \frac{P \times 6 \times 2}{100} = \frac{12P}{100} \quad \dots(i)$$

S.I. at the rate of 5% for next 4 year

$$= \frac{P \times 5 \times 4}{100} = \frac{20P}{100} \quad \dots(ii)$$

S.I. at the rate of 8% for next 2 year

$$= \frac{P \times 8 \times 2}{100} = \frac{16P}{100} \quad \dots(iii)$$

$$\text{Total S.I.} = \frac{12P}{100} + \frac{20P}{100} + \frac{16P}{100}$$

$$\Rightarrow \frac{48P}{100} = ₹ 1440$$

$$\Rightarrow P = \frac{1440 \times 100}{48} = ₹ 3000$$

∴ Required sum = ₹ 3000

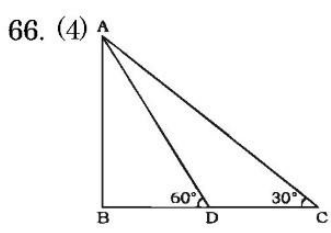
58. (4)  $\text{Gain \%} = \frac{\text{Error}}{\text{True value} \cdot \text{Error}} \times 100$   
 $= \frac{280}{720} \times 100 = 38\frac{8}{9}\%$

59. (1) 1 day's work of 2(A + B + C)  
 $= \frac{1}{12} + \frac{1}{18} + \frac{1}{30}$   
 $= \frac{15+10+6}{180} = \frac{31}{180}$  part  
 A + B + C = 1 day's work  
 $= \frac{1}{2} \times \frac{31}{180}$  part  
 $\therefore$  Required number of days  
 $= \frac{180 \times 2}{31} = \frac{360}{31} = 11\frac{19}{31}$  days

61. (3) Total amount is 100%  
 Percent of amount left =  $(100 - (32 + 53)) = 15\%$   
 So, Amount left =  $\frac{14160}{15} \times 100$   
 $= ₹ 94400$

63. (1)  $\sec\theta = a + \frac{1}{4a}$ ,  
 $\cos\theta = \frac{4a}{4a^2 + 1}$   
 $\frac{\tan\theta + \sec\theta}{2} = \frac{\frac{4a^2 - 1}{4a} + \frac{4a^2 + 1}{4a}}{2}$   
 $= \frac{4a^2 - 1 + 4a^2 + 1}{2 \cdot 4a} = \frac{2a}{2} = a$

65. (4) Strength of milk in the first mixture =  $\frac{9}{9+4} = \frac{9}{13}$   
 Strength of milk in the second mixture =  $\frac{7}{7+4} = \frac{7}{11}$   
 $\therefore$  Required ratio =  $\frac{9}{13} : \frac{7}{11}$   
 $= 9 \times 11 : 7 \times 13$   
 $= 99 : 91$



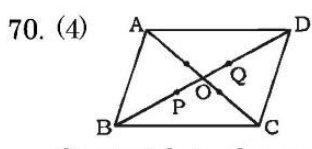
Required height  
 $= \frac{70}{\cot 30^\circ - \cot 60^\circ}$

$$= \frac{70}{\sqrt{3} - \frac{1}{\sqrt{3}}} = 70 \times \frac{\sqrt{3}}{2} = 35\sqrt{3} \text{ m}$$

67. (4)  $\sin^2 1^\circ + \sin^2 3^\circ + \dots + \sin^2 85^\circ + \dots + \sin^2 89^\circ$   
 $= \sin^2 1^\circ + \dots + \cos^2 1^\circ (\sin^2 89^\circ = \cos^2 1^\circ)$   
 $[\therefore \sin(90^\circ - \theta) = \cos \theta^\circ]$   
 It is a series of AP  
 $89 = 1 + (n - 1) \times 2 \therefore n = 45$   
 $\sin^2 45^\circ$   
 $\swarrow \quad \searrow$   
 22 terms    22 terms  
 $= 22 + \sin^2 45^\circ = 22\frac{1}{2}$   
 $\therefore 1 + \sin^2 1^\circ + \sin^2 3^\circ + \sin^2 5^\circ + \dots + \sin^2 85^\circ + \sin^2 87^\circ + \sin^2 89^\circ = 22\frac{1}{2} + 1 = 23\frac{1}{2}$

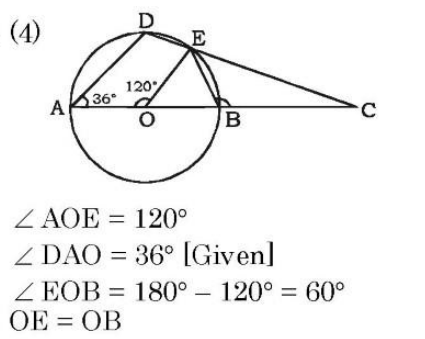
68. (3) Two angles = A and B and  $A > B$ .  
 $\therefore A + B = 120^\circ$   
 $= \frac{120 \times \pi}{180}$  radian  
 $\Rightarrow A + B = \frac{2\pi}{3}$  radian ... (i)  
 Also,  $A - B = \frac{\pi}{6}$  ... (ii)  
 On adding both equations,  
 $\Rightarrow 2A = \frac{2\pi}{3} + \frac{\pi}{6}$   
 $\Rightarrow 2A = \frac{4\pi + \pi}{6} = \frac{5\pi}{6}$   
 $\therefore A = \frac{5\pi}{12}$  radian

69. (2) Area of the floor =  $9 \times 4 = 36$  sq. m  
 $= 3600$  sq. dm.  
 Area of a square tile =  $6 \times 6 = 36$  sq. dm  
 $\therefore$  Number of tiles =  $\frac{3600}{36} = 100$



70. (4) Centroid is the point where medians intersect.  
 Diagonals of parallelogram bisect each other.  
 $OP = \frac{1}{3} \times 3 = 1$  cm

$OQ = \frac{1}{3} \times 3 = 1$  cm  
 $\therefore PQ = 1 + 1 = 2$  cm  
 71. (3) Let required number of wickets = x  
 ATQ,  
 $10.6 \times x + 26 = (x + 5) (10.6 - 0.6)$   
 $= 10.6x + 26 = (x + 5) \times 10$   
 $\Rightarrow 10.6x + 26 = 10x + 50$   
 $\Rightarrow 10.6x - 10x = 50 - 26$   
 $\Rightarrow 0.6x = 24$   
 $\Rightarrow x = \frac{24}{0.6} = 40$   
 $\therefore$  Required number of wickets = 40



$\angle AOE = 120^\circ$   
 $\angle DAO = 36^\circ$  [Given]  
 $\angle EOB = 180^\circ - 120^\circ = 60^\circ$   
 $OE = OB$   
 $\therefore \angle OEB = \angle OBE = \frac{120}{2} = 60^\circ$   
 $\therefore \angle CBE = 180^\circ - 60^\circ = 120^\circ$

73. (1) Percentage increase  
 $= \left( \frac{15 - 9}{9} \times 100 \right) \%$   
 $= \frac{600}{9} \% = 66\frac{2}{3} \%$

74. (2) Required Average Sale  
 $= \frac{9 + 12 + 30 + 18 + 18 + 15}{6}$  crore  
 $= \frac{102}{6} = 17$  crore

75. (4) Required Total Sale  
 $= (6 + 6 + 9 + 12 + 30 + 18 + 18 + 15 + 21 + 21)$  crore  
 $= 156$  crore