Practice Set 1

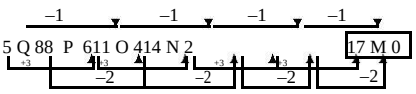
1. As, $2 = (1 \cdot 1) + 1$, $5 = (2 \cdot 2) + 1$, and $16 = (5 \cdot 3) + 1$

Therefore, the next term would be

$(16 \cdot 4) + 1$, i.e. 65

Hence, option (d) is correct.

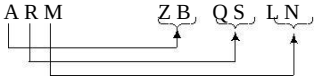
2.



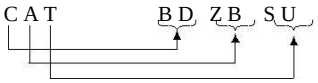
So, the missing term is 17M0.
Hence, option (b) is correct.

3. Here, the rule used is $x^3 : x^2$.
As, $27 = 3^3$ and $9 = 3^2$, so the missing term is 4 such that $8 = 2^3$ and $4 = 2^2$
Hence, option (b) is correct.

4. Each letter is replaced by its two immediate neighbours in the English alphabet; like 'A' is replaced by 'Z and 'B', 'R' by 'Q' and 'S' and so on.

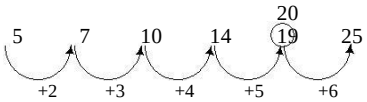


Similarly,



Hence, option (a) is correct.

5. The number of integers skipped in between two successive terms increases by 1.



The fifth term of the series should be 19 but it is given to be 20. So, it is the wrong term.
Hence, option (c) is correct.

6. In figure I, $\sqrt{16} \cdot 7 = 4 \cdot 7 = 28$

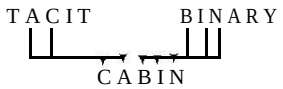
In figure II, $\sqrt{9} \cdot 10 = 3 \cdot 10 = 30$

Likewise, in figure III,

$\sqrt{25} \cdot 2 = 5 \cdot 2 = 10$

Hence, option (b) is correct.

7.



Similarly,

Hence, option (b) is correct.

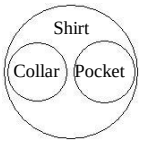
8. Sachin ranks 26th and Anuj is 8 ranks ahead of Sachin. So, Sachin ranks 18th.
Number of students behind Anuj in rank = 42 − 18 = 24

So, Anuj ranks 24 + 1 = 25 th from the last.
Hence, option (b) is correct.

9. B O L D U S K , S H E D O W N

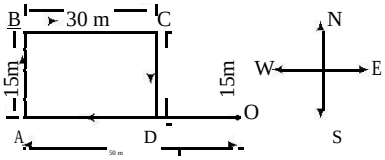
The four words are BOLD, DUSK, SHED and DOWN.
Hence, option (d) is correct.

10. Both 'Pocket' and 'Collar' are parts of a 'Shirt' but Pocket and Collar are different from one another.
So, the correct representation would be



Hence, option (b) is correct.

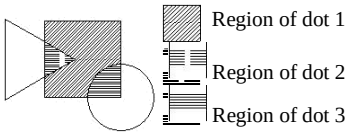
11. The direction diagram can be shown as below:



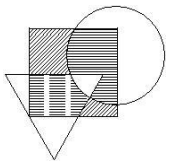
Here, O is taken as the starting point.

As can be seen in the direction diagram, D is the destination point and it is (50–30)m, i.e. 20 m away from the starting point O in the West direction.
Hence, option (d) is correct.

12. In the given figure, there are 3 dots, one of which, say dot 1 is placed only in the square; another one (dot 2) is placed in the region common to the triangle and square and the third dot, dot 3 is placed in the region common to the circle and square.



Out of the four answer figures, only answer figure (c) has a region which is common to the triangle and square only, a region common to the circle and square only and a region exclusive to the square.



Hence, option (c) is correct.

13. Wife of Nisha's husband is Nisha herself. Sister of son is daughter.

So, the girl in the photograph is Nisha's daughter. Conversely, we can say that Nisha is the mother of the girl in the photograph.

Hence, option (a) is correct.

Solutions (Q. Nos. 14-15) The information given can be represented in the below diagram:

	Colour				
	R	B	G	Y	O
A	✗	✗	✗	✗	✓
B	✗	✓	✗	✗	✗
C	✗	✗	✗	✓	✗
D	✓	✗	✗	✗	✗
E	✗	✗	✓	✗	✗

	Mode of Transport				
	Bus	Train	Bike	Scooter	Bicycle
A	✓	✗	✗	✗	✗
B	✗	✗	✓	✗	✗
C	✗	✗	✗	✓	✗
D	✗	✗	✗	✗	✓
E	✗	✓	✗	✗	✗

14. As can be seen from the above diagram, Green colour is liked by E.

Hence, option (d) is correct.

15. Only the combination given in option (b) is incorrect.

The correct combination is Orange-Bus.

Hence, option (b) is correct.

16. Since, no information is given relating the heights of C and D, the arrangement of the six persons in descending order of their heights can be as

A > B > C > D > E > F or A > B > D > C > E > F

So, either of C or D can be third in the descending order of heights.

Hence, option (d) is correct.

17. Consider the pair to the left of (::).

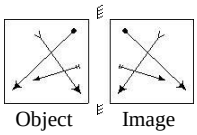
From figure I to figure II, the element of figure I is rotated through 180° to form the left hand side element of figure II and then the mirror image of this LHS element is taken to obtain the RHS element of figure II.

The same rule will be followed by the figures in the pair to the right of (::).
Hence, option (b) is correct.

18. In each step, one dot and one line segment are added to the figure, once to the RHS and next to the RHS part of the figure.

So,  will complete the series as shown below:

Hence, option (d) is correct.

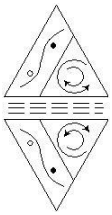
19. 

Hence, option (b) is correct.

20. The curve in the figure is a spiral. It doesn't have any circle.

Hence, option (d) is correct.

21. All the other figures except (c) have an even number of black circles and an odd number of white circles.
Hence, option (c) is correct.

22. 

Hence, option (a) is correct.

23. The number 1 is common to both the positions of the die. So, according to rule 3, 2 will be opposite to 4 and 6 will be opposite to 3.
So, when number 6 is at the bottom, 3 will be on the top.
Hence, option (c) is correct.

24. From 1st March, 2012 to 1st March, 2016, February will come four times, but out of these, it will have 29 days (instead of 28 days) only once, in 2016 (which is a leap year).

Now, there are four complete years from 1st March, 2012 to 29 st February, 2016, three consisting of 365 days each and the fourth one comprising of 366 days. ∴ Total number of days

$= 3 \cdot 365 + 366 = 1461$

$= 208$ weeks 5 days

$\because$ 1461 / 7 $= 208\frac{5}{7}$

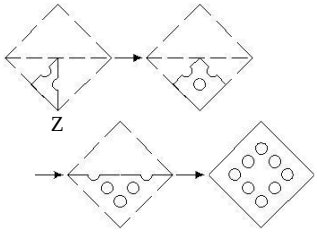
Starting with Thursday, the last day of the week is Wednesday.

Since, there are 5 odd days from 1st March, 2012 to 29 st February, 2016.

∴ Day on 29 th Feb, 2016 = Wednesday + 5 days = Monday.

Thus, 1st March, 2016 would be Monday + 1, i.e. Tuesday.
Hence, option (c) is correct.

25. Upon unfolding the folded paper, represented by figure (*Z*), we get



Hence, option (b) is correct.

26. The maximum number of umbrellas, i.e. 150 were sold in the month of April and the minimum number of umbrellas, i.e. 50 were sold in January.

∴Required ratio = 150 : 50 = 3 : 1

Hence, option (b) is correct.

27. Number of umbrellas sold in January
= 50

Number of umbrellas sold in February
= 130

Increase in the number of umbrellas sold from January to February
$= 130 - 50 = 80$

$\because$ Percentage increase $= \frac{80}{50} \cdot 100\ \%$

$= 160\%$

Hence, option (a) is correct.

28. Let the cost of washing machine = ` X

Given, car cost `8000 more than washing machine cost

∴Cost of car = ` $(X + 8000)$

According to the question,

$\frac{X + 8000}{X} = \frac{11}{7}$

$\Rightarrow 7X + 56000 = 11X$

$\Rightarrow 4X = 56000 \Rightarrow X = 14000$

So, the cost of car = ` $(X + 8000)$

= ` $(14000 + 8000)$ = ` 22000

Hence, option (b) is correct.

29. Let the total salary be ` X

Then, income left = $(100 - 70)\%$ of $[100 - (40 + 20)]\%$ of X

= 30% of 40% of X

$= \frac{30}{100} \cdot \frac{40}{100} \cdot 100\ \%$ of $X = 12\%$ of X

Hence, option (c) is correct.

30. Let CP = X

Then, SP = $\frac{125}{100}X =$ ` $\frac{5X}{4}$

New SP = 75% of $X = \frac{75}{100}X = \frac{3X}{4}$,

Gain = 20%

New SP = 120% of $\frac{3X}{4} \Rightarrow \frac{120}{100} \cdot \frac{3X}{4}$

$= \frac{9X}{10}$

According to the question,

$\Rightarrow \frac{5X}{4} - \frac{9X}{10} = 20 \Rightarrow \frac{(25 - 18)X}{20} = 20$

$\Rightarrow 7X = 400 \Rightarrow X =$ ` 57.14

Hence, option (d) is correct.

31. Let P be the principal. This principal gives ` 1600 as SI in 4 yr at the rate of 4% per annum.

$\therefore \frac{P = SI \cdot 100}{R \cdot T} = \frac{1600 \cdot 100}{4 \cdot 4} \Rightarrow$ ` 10000

Now, P = ` 10000, R = 10% and T = 4yr

Amount after 4 yr = $P\left(1 + \frac{R}{100}\right)^T$

$= 10000\left(1 + \frac{10}{100}\right)^4 = 10000\left(\frac{11}{10}\right)^4$

$= 10000 \cdot \frac{11}{10} \cdot \frac{11}{10} \cdot \frac{11}{10} \cdot \frac{11}{10} =$ ` 14641.10

Compound Interest = ` (14641 − 10000)
= ` 4641

Hence, option (a) is correct.

32. Average of 20 values = 27

Sum of 20 values = $27 \cdot 20 = 540$

If each value is multiplied by 2, then
Total sum = $27 \cdot 2 \cdot 20 = 1080$

New average of 20 values = $\frac{1080}{20} = 54$

Hence, option (b) is correct.

33. Here, time taken by Rahul to do the work = 5 days

Then, work done by Rahul in 1 day = $\frac{1}{5}$

Time taken by Sumit to do the work
= 6 days

Work done by Sumit in 1 day = $\frac{1}{6}$

So, work done by Rahul and Sumit in 1 day = $\frac{1}{5} + \frac{1}{6} = \frac{6 + 5}{30} = \frac{11}{30}$

Therefore, Rahul and Sumit can do the piece of work in $\frac{30}{11}$ days i.e. 2 $\frac{8}{11}$ days

Hence, option (a) is correct.

34. Let the total distance be X km. Time taken at the speed of 80 km/h

$= \frac{X}{80}$ h

Time taken at the speed of 60 Km/h

$= \frac{X}{60}$ h

$\because$ He rested for $\frac{X}{60} - \frac{X}{80}$

$= \frac{80X - 60X}{80 \cdot 60} \Rightarrow \frac{20X}{80 \cdot 60} = \frac{X}{240}$ h

∴Rest per hour = $\frac{X}{240} \div \frac{X}{60} = \frac{X}{240} \cdot \frac{60}{X}$

$= \frac{1}{4}$ h = 15 min

Hence, option (b) is correct.

35. Here, PT is a tangent and PAB is a secant to the circle.

$PT^2 = PA \cdot PB$

$\Rightarrow (12)^2 = X(X + 7) \Rightarrow 144 =$

$X^2 + 7X \Rightarrow X^2 + 7X - 144 = 0$

$\Rightarrow X^2 + 16X - 9X - 144 = 0 \Rightarrow$

$X(X + 16) - 9(X + 16) = 0$

$(X + 16)(X - 9) = 0 \Rightarrow X = 9$

$(\because X = -16$ is not possible)

Hence, option (a) is correct.