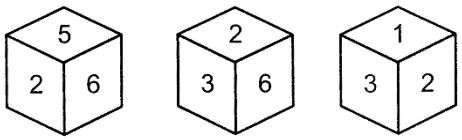
Quantitative Aptitude and Reasoning

1. If a and b are odd numbers, then which of the following is even?
(a) a + b
(b) a + b + 1
(c) ab
(d) ab + 2

2. A rectangular courtyard 3.78 metres long and 5.25 metres wide is to be paved exactly with square tiles, all of the same size. What is the largest size of the tile which could be used for the purpose?
(a) 14 cm
(b) 21 cm
(c) 42 cm
(d) None of these

3. If $\frac{a}{b}=\frac{4}{5}$ and $\frac{b}{c}=\frac{15}{16}$, then $\frac{c^2+a^2}{c^2+a^2}$ is equal to _____.
(a) $\frac{1}{7}$
(b) $\frac{7}{25}$
(c) $\frac{3}{4}$
(d) $\frac{7}{15}$

4. Three different positions of a dice are shown below. Find the number on the face opposite to the face showing 2.



(a) 3
(b) 4
(c) 5
(d) 6

5. The age of a man is three times the sum of the ages of his two sons. Five years hence, his age will be double of the sum of the ages of his sons. The father's present age is _____.
(a) 40 years
(b) 45 years
(c) 50 years
(d) 55 years

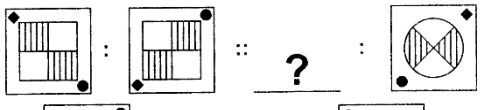
6. Find the value of $\frac{(243)^{0.13}\times(243)^{0.07}}{(7)^{0.25}\times(49)^{0.075}\times(343)^{0.2}}$
(a) $\frac{3}{7}$
(b) $\frac{7}{3}$
(c) $1\frac{3}{7}$
(d) $2\frac{2}{7}$

7. The value of $\frac{(469+174)^2-(469-174)^2}{469\times174}$ = ____.
(a) 2
(b) 4
(c) 295
(d) 643

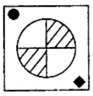
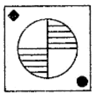
8. 1100 boys and 700 girls are examined in a test. 42% of the boys and 30% of the girls passed. The percentage of the total who failed is _____.
(a) 58%
(b) $62\frac{2}{3}\%$
(c) 64%
(d) 78%

9. The price of a VCR is marked as a 12000. If successive discounts of 15%, 10% and 5% be allowed, then at what price does a customer buy it?
(a) Rs. 8400
(b) Rs. 8721
(c) Rs. 8856
(d) None of these

10. There is a certain relationship between the pair of figures on either side of : :. Identify the relationship and find the missing figure.



(a) 
(b) 

(c)  (d) 

11. A bag contains 6 black and 8 white balls. One ball is drawn at random.
What is the probability that the drawn ball is white?

(a) $\frac{3}{4}$

(b) $\frac{4}{7}$

(c) $\frac{1}{8}$

(d) $\frac{3}{7}$

12. A can finish a work in 18 days and B can do the same work in half the time taken by A. What part of the same work they can finish in a day if they work together?

(a) $\frac{1}{6}$

(b) $\frac{1}{9}$

(c) $\frac{2}{5}$

(d) $\frac{2}{7}$

13. Select the correct mirror image of the given below combination of letters and numbers, if the mirror is placed vertically to the left.
M9GRO361

(a) 

(b) 

(c) 

(d) 

14. A shopkeeper allows a discount of 10% on the marked price of an item but charges a sales tax of 8% on the discounted price. If the customer pays Rs. 680.40 as the price including the sales tax, then what is the marked price of the item?

(a) Rs. 630
(b) Rs. 700
(c) Rs. 780
(d) Rs. 680

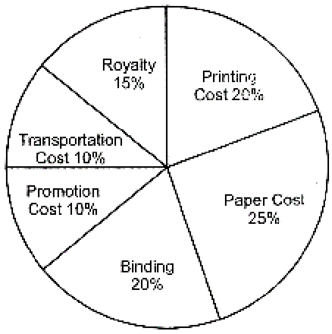
15. Sam invested Rs. 15000 @ 10% per annum for one year. If the interest is compounded half-yearly, then the amount received by Sam at the end of the year will be __________.

(a) Rs. 16500
(b) Rs. 16525.50
(c) Rs. 16537.50
(d) Rs. 18150

16. A closed metallic cylindrical box is m high and its base radius is 35 cm. If the metal sheet costs Rs. 80 per m^2, then find the cost of the material used in the box.

(a) Rs. 281.60
(b) Rs. 290
(c) Rs. 340.50
(d) Rs. 500

DIRECTION: The following pie-chart (not drawn to scale) shows the percentage distribution of the expenditure incurred in publishing a book. Study the pie-chart and answer the questions 17 and 18.



17. Which two expenditures together have a central angle of 108°?

(a) Binding and Transportation Cost
(b) Printing and Paper Cost
(c) Royalty and Promotion Cost
(d) Binding and Paper Cost

18. If for an edition of the book, the cost of paper is Rs. 56250, then find the promotion cost for this edition.

(a) Rs. 20000 (b) Rs. 22500
(c) Rs. 25500 (d) Rs. 28125

19. Tickets numbered 1 to 30 are mixed up and then a ticket is drawn at random.
What is the probability that the drawn ticket has a number which is divisible by both 2 and 6?

(a) $\frac{1}{2}$ (b) $\frac{2}{5}$

(c) $\frac{8}{15}$ (d) $\frac{1}{6}$

20. The maximum length of a pencil that can be kept in a rectangular box of dimensions $8\ cm \times 6\ cm \times 2\ cm$, is _____.

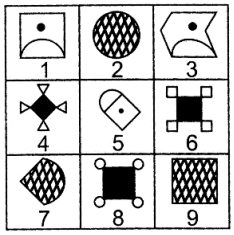
(a) $2\sqrt{13}cm$

(b) $2\sqrt{14}cm$

(c) $2\sqrt{26}cm$

(d) $10\sqrt{2}cm$

21. Group the given figures into three classes using each figure only once.



(a) 1, 3, 5; 2, 7, 9; 4, 6, 8

(b) 1, 5, 7; 2, 6, 9; 3, 4, 8

(c) 1, 6, 9; 2, 4, 7; 3, 5, 8

(d) 1, 3, 5; 2, 9, 8; 4, 6, 7

22. Two rows of numbers are given. The resultant of each row is to be worked out separately based on the following rules and the question below the rows of numbers is to be answered. The operations of numbers in each row progress from left to right.

Rules:

(i) If an odd number is followed by another odd number, they are to be multiplied.

(ii) If an even number is followed by another even number, the first number is to be divided by the second number.

(iii) If an even number is followed by the perfect square of an odd number, the first number is to be subtracted from the second number.

(iv) If an odd number is followed by an even number, they are to be added.

(v) If an even number is followed by an odd number which is not a perfect square, the square of the odd number is to be added to the even number.

16 8 3

21 12 9

If x and y be the resultants of first and second rows respectively, then what will be the value of y ÷ x?

(a) 18

(b) 80

(c) 27

(d) 16

23. A group of students decided to collect as many praise from each member of the group as the number of members in the group. If the total collection amounts to Rs. 59.29, then find the number of members in the group.

(a) 57

(b) 67

(c) 77

(d) 87

24. Simplify : $\frac{(x-5)(x-3)(x^2-9x+14)}{(x^2-12x+35)(x-3)}$

(a) $x-1$

(b) $x-2$

(c) $x-7$

(d) $(x-1)(x-2)$

25. Match the following.

(1)	Rectangle	(p)	A quadrilateral having its opposite sides equal and parallel.
(2)	Square	(q)	A parallelogram having its opposite sides equal and each of the angle is a right angle.
(3)	Parallelogram	(r)	A parallelogram having all sides equal and each of the angle is a right angle.
(4)	Rhombus	(s)	Aquadrilateral in which a pair of opposite sides are parallel.
(5)	Trapezium	(t)	Apara Helogram having all sides equal.

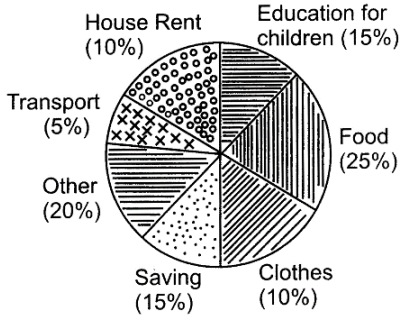
(a) $1 \to (t), 2 \to (s), 3 \to (r), 4 \to (p), 5 \to (q)$
(b) $1 \to (p), 2 \to (q), 3 \to (r), 4 \to (s), 5 \to (t)$
(c) $1 \to (r), 2 \to (q), 3 \to (t), 4 \to (p), 5 \to (s)$
(d) $1 \to (q), 2 \to (r), 3 \to (p), 4 \to (t), 5 \to (s)$

26. The sum of two numbers is 15 and the difference of their squares is 15. The difference of the numbers is __.
(a) 0
(b) 1
(c) 4
(d) 6

27. A sum of Rs. 1550 was lent partly at 5% and partly at 8% p.a. simple interest.
The total interest received after 3 years was Rs. 300. The ratio of the money lent at 5% to that of lent at 8% is __.
(a) 5 : 8
(b) 8 : 5
(c) 16 : 15
(d) 31 :6

28. Three solid cubes of sides 1 cm, 6 cm and 8 cm respectively are melted to form a new cube. Find the surface area of the cube so formed.
(a) 520 cm^2
(b) 486 cm^2
(c) 289 cm^2
(d) 300 cm^2

29. Adjoining pie chart gives the expenditure (in percentage) on various items and savings of a family during a month.



The item on which expenditure is equal to the total savings of the family, is __.
(a) Food
(b) Others
(c) Clothes
(d) Education for children

30. If it is possible to make a meaningful word with the second, fourth, sixth and eighth letters of the word UMBRELLA, then which of the following will be the third letter of that word? If more than one such word can be formed, give 'Z' as the answer. If no such word can be formed give 'X' as the answer.
(a) X
(b) M
(c) Z
(d) R

Answer – Key				
1. A	**2.** B	**3.** B	**4.** B	**5.** B
6. A	**7.** B	**8.** B	**9.** B	**10.** B
11. B	**12.** A	**13.** A	**14.** B	**15.** C
16. A	**17.** A	**18.** B	**19.** D	**20.** C
21. A	**22.** C	**23.** C	**24.** B	**25.** D
26. B	**27.** B	**28.** B	**29.** D	**30.** D