

# MENTAL ABILITY

1. Pratik remembers that his brother's birthday falls after 20<sup>th</sup> June but before 24<sup>th</sup> June while his sister Sakshi remembers that her brother's birthday falls after 22<sup>nd</sup> June but before 27<sup>th</sup> June. On what date does her brother's birthday fall.

- (1) 22<sup>nd</sup> June                      (2) 23<sup>rd</sup> June  
 (3) 21<sup>st</sup> June                      (4) 24<sup>th</sup> June

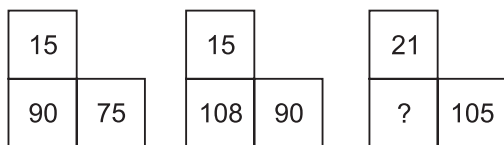
2. Rohit left home and cycled 10 km towards South, then turned right and cycled 5 km and then again turned right and cycled 10 km. After this he turned left and cycled 10 km. How many kilometers will he have to cycle to reach his home straight?

- (1) 10 km                          (2) 15 km  
 (3) 20 km                          (4) 25 km

3. If in a certain "when" means 'x', "you" means '÷(divide)', "come" means '-' and "will" means '+', then what will be the value of "8 when 12 will 16 you 2 come 10"?

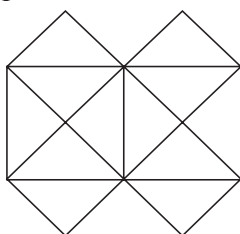
- (1) 45                              (2) 112  
 (3) 96                              (4) 94

4. A set of figures carrying certain characters is given. If the characters in each set follow a similar pattern, find the missing character.



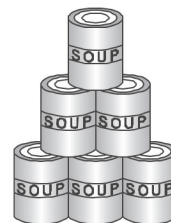
- (1) 78                              (2) 140  
 (3) 126                          (4) 132

5. How many squares are there in the given figure?



- (1) 6                              (2) 7  
 (3) 8                              (4) 9

6. Rohan plans to make display by stacking cans. The top 3 rows are shown here. The display will be total of 9 rows.



How many cans in all will Rohan need to make display?

- (1) 49                              (2) 45  
 (3) 47                              (4) 42

7. Given that ☺ + ☹ + ☹ = ☹ + ☹ + ☹ + ☹. If each ☹ stands for  $\frac{1}{4}$ , what does each ☺ stand for?

- (1)  $\frac{3}{4}$                               (2)  $\frac{3}{2}$   
 (3)  $\frac{3}{8}$                               (4)  $\frac{3}{5}$

8. Five boys A, B, C, D and E are standing in a row. A is between C and D and B is between D and E. Which of the following pairs represents the boys standing at both the ends?

- (1) E, C                              (2) C, B  
 (3) E, A                              (4) A, C

9. Rohit earns more than Farhan but not as much as Jay. Krish earns less than Jay but not as little as Farhan. Mohit earns more than Farhan but not as much as Rohit. If they are arranged according to their earnings, who will be in the middle?

- (1) Mohit                              (2) Krish  
 (3) Rohit                              (4) Data inadequate

10. Solve the series : 21, 25, 33, 49, 81, (?)

- (1) 101                              (2) 132  
 (3) 113                              (4) 145

# MATHEMATICS

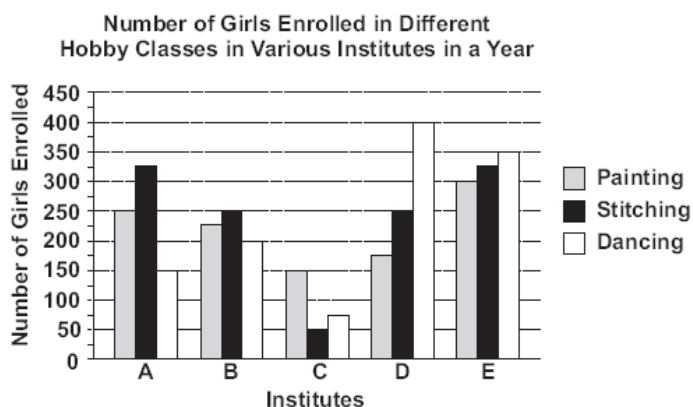
11. In a class test (+3) marks are given for every correct answer and (-2) marks are given for every incorrect answer and no marks for not attempting any question Radhika scored 24 marks, if she got 12 correct answers, how many questions has she attempted incorrectly?

- (1) 3 (2) 4  
(3) 5 (4) 6

12. Satpal walks  $\frac{2}{3}$  km from a place P, towards east and then from there  $1\left(\frac{5}{7}\right)$  km towards west. Where will he be now from P?

- (1)  $1\left(\frac{1}{21}\right)$  km west of P  
(2)  $1\left(\frac{2}{21}\right)$  km west of P  
(3)  $1\left(\frac{2}{21}\right)$  km east of P  
(4)  $2\left(\frac{2}{21}\right)$  km east of P

(For question 13-14) Study the graph carefully to answer the following questions.



13. What is the difference between the total number of girls enrolled in stitching and painting from all institutes together?

- (1) 50 (2) 25  
(3) 100 (4) 85

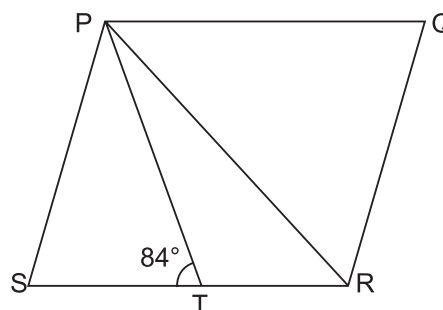
14. What is the total number of girls enrolled in dancing from all institutes together?

- (1) 1275 (2) 1175  
(3) 1100 (4) 1200

15. In a bag there are 5 and 2 rupee coins. If they are equal in number and their worth is ₹ 70, then the number of coins of ₹ 5 and ₹ 2 is:

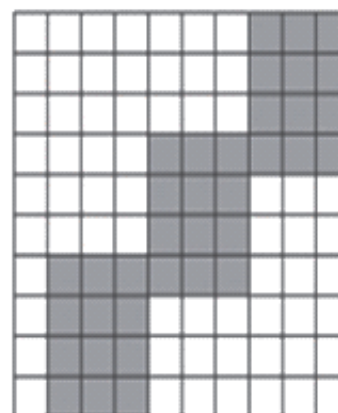
- (1) 5 (2) 10  
(3) 18 (4) 15

16. In the given figure,  $PQ \parallel RS$ ,  $RS \parallel QR$  and  $\angle RPT$  is  $\frac{1}{4}$  as much as  $\angle PTS$ . What is the value of  $\angle RPQ$ ?



- (1)  $84^\circ$  (2)  $63^\circ$   
(3)  $42^\circ$  (4)  $52^\circ$

17. The percent that represents the shaded region in the figure is



- (1) 36%  
(2) 64%  
(3) 27%  
(4) 48%

18. For any rational number  $a, b, c$ , which among the following is false.
- (1)  $a \times b = b \times a$
  - (2)  $a \times (b - c) = a \times b - a \times c$
  - (3)  $a \times \left(\frac{b}{c}\right) = \frac{(a \times b)}{(a \times c)}$
  - (4)  $a \times (b + c) = a \times b + a \times c$
19. The area of a square and a rectangle are equal. If the side of the square is 40 cm and the breadth of the rectangle is 25 cm, find the length of the rectangle.
- (1) 64
  - (2) 68
  - (3) 70
  - (4) 65
20. Raju's father's age is 5 years more than three times Raju's age. Raju's father is 44 years old. Find Raju's age?
- (1) 15
  - (2) 14
  - (3) 13
  - (4) 23
21. Simplify:  $\frac{(3 \times 7^2 \times 11^8)}{(21 \times 11^3)}$
- (1) 1127357
  - (2) 77
  - (3) 847
  - (4) None of these
22. Which of the letter has horizontal as well as vertical line of symmetry?
- A      B      H      S**
- (1) A
  - (2) B
  - (3) H
  - (4) S
23. Write a pair of integers whose product is  $-12$  and there lies seven integers between them (excluding the given integers)
- (1) 4, 3
  - (2) 2,  $-6$
  - (3)  $-4, 3$
  - (4)  $-2, 6$
24. The angles between North and West, South and East are
- (1) complementary
  - (2) supplementary
  - (3) both are acute.
  - (4) both are obtuse.
25. How many numbers from 11 to 50 are there which are exactly divisible by 7 not by 3?
- (1) Two
  - (2) Four
  - (3) Five
  - (4) Six
26. Solve the problem:  $\frac{121}{[17 - \{15 - 3(7 - 4)\}]}$
- (1) 11
  - (2) 10
  - (3)  $-11$
  - (4)  $-12$
27. Convert the following fraction to Percentage:  $\frac{13.03}{100}$
- (1) 1.303
  - (2) 0.1303
  - (3) 1303
  - (4) 13.03
28. The runs scored in a cricket match by 11 players is as follows:  
6, 15, 120, 49, 93, 80, 11, 10, 15, 8, 10, 15. Find median and mode respectively:
- (1) 15, 10
  - (2) 15, 15
  - (3) 80, 15
  - (4) 15, 80
29. 76.8 m of cloth has been cut into pieces 1.2 m long. Find the number of pieces that can be cut.
- (1) 66
  - (2) 64
  - (3) 68
  - (4) 63
30. Find the value of  $\frac{-9}{5} + \frac{-8}{5} \div \frac{5}{2} \times \frac{-5}{4}$
- (1)  $-1$
  - (2)  $-3$
  - (3) 2
  - (4)  $-8$

31. In a school  $\frac{3}{5}$  of the students are girls. If the number of boys in the school is 200, find the total number of students in the school.
- (1) 300 (2) 500  
(3) 200 (4) 100
32. Which of the following statements is correct?
- (1) A triangle can have two obtuse angles.  
(2) The difference of any two sides of a triangle is greater than the third side.  
(3) A triangle can have a right angle and two acute angle of different measures.  
(4) A triangle can have a right angle and an obtuse angle.
33. The length of a rectangle is two times its breadth, its perimeter is 60 cm, then the length is
- (1) 20 (2) 15  
(3) 10 (4) 30
34. In a parking lot, 1 out of every 8 cars is blue. What percent of the cars in this lot are blue?
- (1) 1.25 % (2) 7 %  
(3) 9 % (4) 12.5%
35. Simplify:  $\frac{(3^5 10^5 25)}{(5^7 6^5)}$
- (1)  $\frac{1}{5}$  (2) 5  
(3) 1 (4) 3
36. The ratio of Ram's money to Shyam's money is 3:8. If Ram gives  $\frac{1}{2}$  of his money to Shyam, what will be the new ratio of Ram's money to Shyam?
- (1) 4:18 (2) 3:19  
(3) 2:18 (4) 4:19
37. Rocky moves 9 steps towards left on the number line starting from zero. Again he moves 3 steps towards right. What number will he finally arrive at? ( Each step is equal to one unit on the number line.)
- (1) 12 (2) 6  
(3) -6 (4) -12
38. Subtract  $\frac{-3}{5}$  from its reciprocal.
- (1)  $\frac{16}{15}$  (2)  $\frac{-34}{15}$   
(3)  $\frac{-29}{9}$  (4)  $\frac{-16}{5}$
39. Which of the following letters does not have a line of symmetry?
- (1) X (2) D  
(3) O (4) F
40. Find the number:  $3 \times 10^4 + 7 \times 10^2 + 5 \times 10^0$
- (1) 30750  
(2) 37050  
(3) 30705  
(4) 30700

## INTERACTIVE SECTION

41. Divide the difference of  $\frac{3}{7}$  and  $\frac{2}{5}$  by the product of  $\frac{4}{5}$  and  $\frac{25}{2}$
- (1)  $\frac{2}{7}$  (2)  $\frac{9}{35}$   
(3)  $\frac{1}{350}$  (4)  $\frac{2}{75}$
42. Find the mean of the data:  
13, 16, 12, 14, 19, 12, 14, 13, 14
- (1) 14.11 (2) 15.11  
(3) 14.21 (4) 15.21
43.  $\frac{20}{3}$  litres milk is being distributed among 10 persons. How much milk would one person get?
- (1)  $\frac{2}{3}$  litre (2)  $\frac{1}{3}$  litre  
(3)  $\frac{4}{3}$  litre (4)  $\frac{2}{3}$  ml.

44. "To complete one set of pipe installations, the plumber needs the following components: "4 long pipes, 8 short pipes and 12 fittings."

He has 66 long pipes, 46 short pipes, and 444 fittings in stock. How many sets can bob install?

- (1) 5 (2) 6  
(3) 31 (4) 16

45. There are 6 marbles in a box with numbers 1 to 6 marked on each of them. What is the probability of drawing a marble with number 5?

- (1)  $\frac{1}{5}$  (2)  $\frac{1}{2}$   
(3)  $\frac{1}{3}$  (4)  $\frac{1}{6}$

46. The average of three number is  $9m + 8$ . Two of the three numbers are  $2m + 3$  and  $4m + 5$ . Express the third number in terms of  $m$  in the simplest form?

- (1)  $9m + 8$   
(2)  $27m + 24$   
(3)  $21m + 16$   
(4)  $21m + 32$

47. The percentage of marks obtained by Arun in Mathematics if he got 48 out of 80 is

- (1) 50%  
(2) 60%  
(3) 40%  
(4) 70%

48. Find the value of the expression given below?

$$\left(\frac{3a^2 + 2a \times 5 - 4}{4}\right) + 5a - 2, \text{ when } a = 4$$

- (1) 24 (2) 36  
(3) 27 (4) 39

49. 5, 6,  $x$  are in continued proportion, the value of  $x$  is

- (1)  $\frac{30}{7}$  (2)  $\frac{33}{4}$   
(3)  $\frac{37}{2}$  (4)  $\frac{36}{5}$

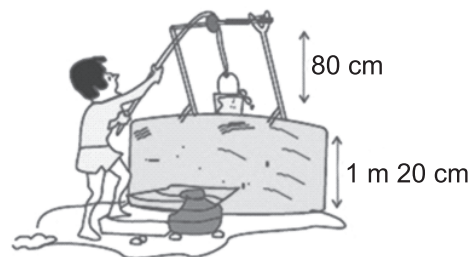
50. The ratio of angles of a triangle is 2:3:4. The largest angles of the triangle is

- (1)  $60^\circ$   
(2)  $120^\circ$   
(3)  $80^\circ$   
(4)  $150^\circ$

51. In our office there are 60% female employees.50% of all the male employees are computer literate. If there 62 % employees are computer literate, out of total 1600 employees, then the number of female employees who are computer literate is

- (1) 690  
(2) 672  
(3) 900  
(4) Can't be determined

52. Water level in a well was 20 m below ground level. During rainy season, rain water collected in different water tanks was drained into the well and the water level rises 5m above the previous level. The wall of the well is 1 m 20 cm high and a pulley is fixed at height 80 cm. Raghu wants to draw water from the well. The minimum length of the rope that he can use is.

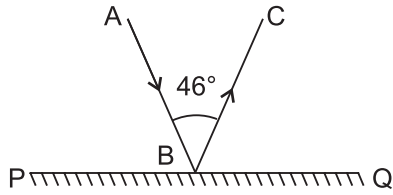


- (1) 17 m (2) 18 m  
(3) 96 m (4) 97 m

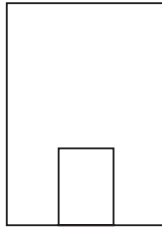
53. A shopkeeper sells mangoes in two types of boxes, one small and one large. A large box contains as many as 8 small boxes plus 4 loose mangoes. What is the number of mangoes in each small box. The number of mangoes in a large box is given to be 100.

- (1) 12 (2) 14  
(3) 16 (4) 20

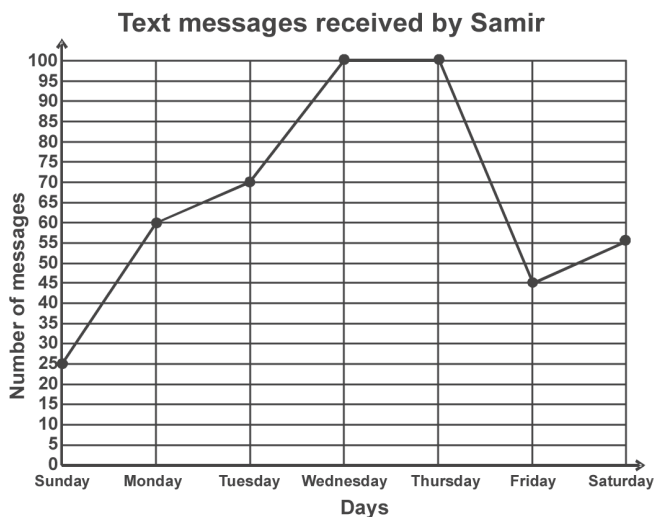
54. In the Figure PQ is a mirror, AB is the incident ray and BC is the reflected ray. If  $\angle ABC = 46^\circ$ , then  $\angle ABP$  is equal to



- (1)  $44^\circ$                       (2)  $67^\circ$   
 (3)  $13^\circ$                       (4)  $62^\circ$
55. A door frame of dimensions  $3\text{ m} \times 2\text{ m}$  is fixed on the wall of dimension  $10\text{ m} \times 10\text{ m}$ . Find the total labour charges for painting the wall if the labour charges for painting  $1\text{ sqm}$  of the wall is ₹ 2.50.



- (1) ₹ 250                      (2) ₹ 265  
 (3) ₹ 244                      (4) ₹ 235
56. Read the graph and answer the given question. On which day did Samir receive exactly 60 text messages?



57. Rahul has saved ₹ 20 when a discount of 25% was given. What was the price of the sweater before discount?

- (1) 70                      (2) 80  
 (3) 90                      (4) 85
58. Kartik can throw a ball  $50\left(\frac{3}{5}\right)$  meters high. Ayan can throw the same ball  $48\left(\frac{1}{3}\right)$  metres high. How much farther can Kartik throw the ball than Ayan?

- (1)  $2\left(\frac{3}{5}\right)$                       (2)  $2\left(\frac{4}{15}\right)$   
 (3)  $2\left(\frac{3}{5}\right)$                       (4)  $2\left(\frac{4}{5}\right)$
59. Two equal containers are filled with a mixture of milk and water. The concentration of milk in each of the containers is 20% and 25% respectively. What is the ratio of water in both the containers respectively?

- (1) 15 : 16                      (2) 16 : 15  
 (3) 4 : 5                      (4) 5 : 4
60. Anju on her birthday wants to treat 4 of her friends along with herself an ice cream cone costing ₹17.65 each. She has only ₹31.45 with her. She asks her father to give the remaining money. How much money should Anju take from her father?

- (1) 19.15                      (2) 20.15  
 (3) 19.25                      (4) 20.25



**END OF THE EXAM**