1. If the two digits of the age of Rahul are reversed then the new age so obtained is the age of his wife. $\frac{1}{11}$ of the sum of their ages is equal to the difference between their ages. If Rahul is older than his wife then find the difference between their ages
   (a) Cannot be determined
   (b) 8 years
   (c) 10 years
   (d) 9 years

2. A number is greater than the square of 44 but smaller than the square of 45. If one part of he number is the square of 6 and the number is a multiple of 5, then find the number
   (a) 1940   (b) 2080
   (c) 1980   (d) 1982.

3. If a * b = $a^2 + b^2$ then 3 * 5 is equal to
   (a) 16   (b) 34
   (c) 8   (d) 15.

4. Consider the following statements:
   (1) Every integer is a rational number.
   (2) Every rational number is a real number
   Which of the above statements is/are correct?
   (a) 1 only   (b) 2 only
   (c) Both 1 and 2   (d) Neither 1 nor 2.

5. Which of the following is a true statement ?
   (a) π and $\frac{22}{7}$ are both rational
   (b) π and $\frac{22}{7}$ are both irrational
   (c) π is rational and $\frac{22}{7}$ is irrational
   (d) π is irrational and $\frac{22}{7}$ is rational

6. A$_2$ boy was asked to write $2^5 \times 9^2$, but he wrote 2592. The numerical difference between the two is
   (a) 0   (b) 1
   (c) 2   (d) 3

7. A commander of a regiment wishes to arrange his soldiers in the rows either 12, or 15 or 18 or 20 and also wishes to see his regiment arranged in the form of a solid square. What is the least number of soldier in his regiment ?
   (a) 180   (b) 360
   (c) 900   (d) 500

8. Which of the following fraction is the largest ?
   (a) $\frac{2}{3}$ (b) $\frac{59}{90}$
   (c) $\frac{7}{9}$ (d) $\frac{23}{45}$

9. If 9 men working $7\frac{1}{2}$ hours a day can finish a work in 20 days, how many days will be taken by 12 men working 6 hours a days finish the same work. Given that 3 men of the latter type work as much as 2 men of the former type in the same time ?
   (a) 11   (b) $9\frac{1}{2}$
   (c) 13   (d) $12\frac{1}{2}$

10. Yesterday, Priti typed an essay of 5000 words at the speed of 60 words per minute. Today she typed the same essay at 15% faster speed. What is the approximately difference in the time she took to type yesterday and the time she took to type today?
    (a) 20 minutes   (b) 30 minutes
    (c) 10 minutes   (d) 40 minutes

11. On teacher's day, 3200 sweets were to be equally distributed amongst a certain number of children. But on that particular day 80 children remained absent; hence each child got 2 sweets extra. How many children were originally supposed to be there ?
    (a) 320   (b) 500
    (c) 540   (d) 400

12. The simplification of $1+\cfrac{1}{2+\cfrac{1}{1-\cfrac{1}{13}}}$ yields the result
    (a) $\frac{2}{7}$ (b) $\frac{7}{9}$
    (c) $\frac{9}{7}$ (d) $\frac{13}{7}$

13. The digit in the unit's place of $[(251)^{98} + (21)^{29} - (106)^{100} + (705)^{35} - (16)^4 + 259]$ is
    (a) 1   (b) 4
    (c) 5   (d) 6

14. A boy was asked to multiply a given number by 8/17. Instead, he divided the given number by $\frac{8}{17}$ and got the resultant 225 more than

what he should have got if he had multiplied the number by 8/17. The given number was

(a) 8   (b) 17

(c) 64   (d) 136

15. $\left\{ 7\dfrac{1}{2} + \dfrac{1}{2} \div \dfrac{1}{2} \text{ of } \dfrac{1}{4} - \dfrac{2}{5} \times 2\dfrac{1}{3} \div 1\dfrac{7}{8} \text{ of } \left(1\dfrac{2}{5} - 1\dfrac{1}{3} \right) \right\}$ = ?

(a) $3\dfrac{1}{5}$ (b) $2\dfrac{1}{24}$

(c) $4\dfrac{1}{30}$ (d) $4\dfrac{1}{20}$

16. $\sqrt{\dfrac{0.00001225}{0.00005329}}$ is equal to

(a) $\dfrac{25}{77}$ (b) $\dfrac{35}{73}$

(c) $\dfrac{35}{77}$ (d) $\dfrac{25}{73}$

17. Given $\sqrt{2}$ =1.414, the value of $\sqrt{8} + 2\sqrt{32} - 3\sqrt{128} + 4\sqrt{50}$ is

(a) 8.484   (b) 8.526

(c) 8.426   (d) 8.876

18. 609.609/2.03 = ?

(a) 400.3   (b) 300.3

(c) 500.3   (d) 300.1

19. A man spends $\dfrac{2}{5}$ of his salary on house rent. $\dfrac{3}{10}$ of his salary spend on food and $\dfrac{1}{8}$ th of his salary spend on conveyance. If he has Rs. 21,000 left with him, find his expenditure on house rent and food.

(a) 19000   (b) 18000

(c) 12000   (d) 60000

20. Arranging $(2.89)^{0.5}$, $2 - (0.5)^2$, $\sqrt{3}$ and $\sqrt[3]{0.008}$ in ascending order we get

(a) $2 - (0.5)^2, \sqrt{3}, \sqrt[3]{0.008}, (2.89)^{0.5}$

(b) $\sqrt[3]{0.008}, (2.89)^{0.5}, \sqrt{3}, 2 - (0.5)^2$

(c) $\sqrt[3]{0.008}, \sqrt{3}, (2.89)^{0.5}, 2 - (0.5)^2$

(d) $\sqrt{3}, \sqrt[3]{0.008}, 2 - (0.5)^2, (2.89)^{0.5}$

21. The value of $\sqrt{-\sqrt{3} + \sqrt{3 + 8\sqrt{7 + 4\sqrt{3}}}}$

(a) 1   (b) 2

(c) 3   (d) 8.

22. A certain type of board is sold only in lengths of multiples of 2 ft. The shortest board sold is 6 ft and the longest is 24 ft. A builder needs a large quantity of this type of board in $5\dfrac{1}{2}$ ft length. For minimum wastage, the lengths to be ordered should be

(a) 26 ft   (b) 24 ft

(c) 22 ft   (d) 12 ft.

23. The decimal expansion of rational number $\dfrac{37}{2^2 \times 5}$ will terminate after

(a) one decimal place

(b) two decimal places

(c) three decimal places

(d) four decimal places

24. A man leaves $\dfrac{2}{5}$ th of his property for his wife, 1/3rd to his son and the remaining Rs. 4000 for his daughter. The value of his total property (in rupees) is

(a) 15000   (b) 15500

(c) 15750   (d) 16000

25. How many perfect squares lie between 120 and 300?

(a) 5   (b) 6

(c) 7   (d) 8

26. If $\sqrt{160801}$ = 401, then value of $\sqrt{16.0801} + \sqrt{1608.01} + \sqrt{0.160801} + \sqrt{0.00160801}$

(a) 43.5611   (b) 44.5511

(c) 43.3311   (d) 40.5411

27. If $\sqrt{23}$ = 4.7958 and $\sqrt{230}$ = 15.1657, find value of $\sqrt{2.3} + \sqrt{2300} + \sqrt{.023}$

(a) 49.626   (b) 49.472

(c) 49.576   (d) 49.475

28. The bowling average of a cricketer was 12.4. He improves his bowling average by 0.2 points when he takes 5 wickets for 26 runs in his last match. The number of wickets taken by him before the last match was

(a) 125   (b) 150

(c) 175   (d) 200

29. A cricketer had a certain average of runs for his 64 innings. In his 65th innings, he is bowled out for no score. This brings down his average by 2 runs. His new average of runs is

(a) 130   (b) 128

(c) 70   (d) 68

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30. The temperature readings one week last year were as follows : 15, 8, 2, 0, -3, -6, -7. What was the average temperature for his week ?

(a) $+1\frac{2}{7}$　　　　(b) $+2\frac{1}{7}$

(c) -2　　　　(d) 0

31. A number p equals $\frac{3}{2}$ the average of 10, 12, and q. What is q in terms of p ?

(a) $\frac{2p}{3}-22$　　　　(b) $\frac{4p}{3}-22$

(c) $2p-22$　　　　(d) $\frac{p}{2}+11$

32. Kamal covered a distance of 9 km by walking at the speed of 3 km/h. He covered a distance of 25 km by cycle at speed of 5 km/h, further she doubled her speed and covered a distance 30 km. Find his average speed ?

(a) $9\frac{11}{5}$　　　　(b) $5\frac{9}{11}$

(c) $11\frac{5}{9}$　　　　(d) $9\frac{5}{11}$

33. Average of n numbers is 64. If $\frac{3}{4}$ of the numbers are increased by 2 each and $\frac{1}{4}$th of numbers are decreased by 2 each. What is the new average?

(a) 63　　　　(b) 65
(c) 64　　　　(d) 62

34. In the expression xy^2, the values of both variables x and y are decreased by 20%. By this, the value of the expression is decreased by

(a) 40%　　　　(b) 80%
(c) 48.8%　　　　(d) 51.2%

35. If x% of y is 100 and y% of z is 200, then find a relation between x and z.

(a) $z=\frac{x}{2}$　　　　(b) $z=2x$

(c) $x=\frac{z}{4}$　　　　(d) $z=4x$.

36. Difference of two numbers is 1660. If $6\frac{1}{2}\%$ of one number is $8\frac{1}{2}\%$ of the other number, the smaller number is

(a) 7055　　　　(b) 5395
(c) 3735　　　　(d) 2075

37. If $l\%$ of p is the same as m% of q, then n% of r is

(a) $\frac{mn}{l}\%$ of p　　　　(b) $\frac{lm}{n}\%$ of p

(c) $\frac{ln}{m}\%$ of p　　　　(d) $\frac{l}{m}\%$ of p

38. If the side of a square is increased by 25 per cent then its area is increased by

(a) 25%　　　　(b) 55%
(c) 40.5%　　　　(d) 56.25%

39. If 24-carat gold is considered to be hundred per cent pure gold, then the percentage of pure gold in 22-carat gold is

(a) $91\frac{3}{4}$　　　　(b) $91\frac{2}{3}$

(c) $91\frac{1}{3}$　　　　(d) $90\frac{2}{3}$

40. In an examination, it is required to get 350 of the aggregate marks to pass. A student gets 32% marks and is declared failed by 70 marks. What are the maximum aggregate marks a student can get ?

(a) 885
(b) 865
(c) 875
(d) Cannot be determined

41. Mixture of milk and water has been kept in two separate containers. Ratio of milk to water in one of the containers is 5 : 1 and that in the other container is 7 : 2. In what ratio the mixtures of these two containers should be added together so that the quantity of milk in the new mixture may become 80% ?

(a) 2 : 3　　　　(b) 3 : 2
(c) 4 : 5　　　　(d) 4 : 3

42. If $W_1 : W_2 = 2 : 3$ and $W_1 : W_3 = 1 : 2$ then $W_2 : W_3$ is

(a) 3 : 4　　　　(b) 4 : 3
(c) 2 : 3　　　　(d) 4 : 5

43. Salaries of A, B and C were in the ratio 3 : 5 : 7, respectively. If their salaries were increased by 50%, 60% and 50% respectively, what will be the new ratio of their respective salaries ?

(a) 9 : 16 : 23　　　　(b) 9 : 21 : 66
(c) 9 : 17 : 23　　　　(d) 9 : 16 : 21

44. If there are *b* boys and *g* girls in a class, what is the ratio of the number of boys to the total number of students?

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(a) $\dfrac{b}{g}$ (b) $\dfrac{b}{b+g}$

(c) $\dfrac{b+g}{b}$ (d) $\dfrac{b-g}{b+g}$

45. If the salary of Tina, Nina and Pinky is in ratio 3 : 5 : 7 and he increment of 15%, 20% and 8% respectively in their salaries, then the new ratio of their salaries is
(a) 252 : 200 : 115
(b) 200 : 252 : 115
(c) 115 : 252 : 200
(d) 115 : 200 : 252

46. $33\dfrac{1}{3}$ per cent of a man's output in making screws is equal to 50 per cent of a second man's daily output. If the second man turns out 1500 screws daily, then the first man's output in terms of making screw is
(a) 500 (b) 1000
(c) 2000 (d) 2250

47. An article is sold at a loss of 10%. Had it been sold for Rs. 9 more, there would have been a gain of $12\dfrac{1}{2}$% on it. The CP of the article is
(a) Rs. 40 (b) Rs. 45
(c) Rs. 50 (d) Rs. 35

48. The cost price of 18 articles is equal to SP of 15 articles. The gain per cent is
(a) 15% (b) 20%
(c) 25 % (d) 18%

49. A man who makes a profit of 25% by selling sugar at Rs. 4.25 kg lowers his price so as to gain only 17 p/kg in what ratio must his sales be increased so that his total profit may be the same as before ?
(a) 1 : 6 (b) 1 : 5
(c) 1 : 4 (d) 1 : 3

50. By selling a hard disk for Rs. 475, a person loses 5%. To get a gain of 5%, he should sell the hard disk for
(a) Rs. 500 (b) Rs. 525
(c) Rs. 535 (d) Rs. 575

51. A sells an article to B making a profit of $\dfrac{1}{5}$ of his outlay. B sells it to C, gaining 20%. If C sells it for Rs. 600 and incurs a loss of $\dfrac{1}{6}$ of his outlay, the cost price of A is
(a) Rs. 600 (b) Rs. 500

(c) Rs. 720 (d) Rs. 800

52. A discount of 30% on marked price of a toy reduces its selling price by Rs. 30.What is the new selling price (in Rs.) ?
(a) 70 (b) 21
(c) 130 (d) 100

53. Successive discounts of 10%, 20% and 30% is equivalent to a single discount of
(a) 60% (b) 49.6%
(c) 40.5% (d) 38%

54. Which of the following successive discount series is the best of all for a customer ?
(a) 30%, 20%, 10%
(b) 25%, 20%, 15%
(c) 30%, 10%, 15%
(d) 25%, 15%, 10%

55. If the cost price and selling price of article are in the ratio 10 : 11, then the percentage of profit is
(a) 10 (b) 9
(c) 3 (d) 1

56. A liquid 'P' is $1\dfrac{3}{7}$ times as heavy as water and water is $1\dfrac{2}{5}$ times s heavy as another liquid Q. The amount of liquid P that must be added to 7 litres of the liquid Q, so that the mixture may weight as much as an equal volume of water, will be
(a) 7 litres (b) $5\dfrac{1}{6}$ litres

(c) 5 litres (d) $4\dfrac{2}{3}$ litres

57. Zinc and copper are in the ratio of 5 : 3 in 200 g of an alloy. How much grams of copper be added to make the ratio as 3 : 5 ?
(a) $133\dfrac{1}{3}$ (b) $\dfrac{1}{200}$
(c) 72 (d) 66

58. A trader has 50 kg of sugar, a part of which he sells at 10% profit and the rest at 5% loss. He gains 7% on the whole. What is the quantity sold at 10% gain and 5% loss ?
(a) 40 kg, 10 kg
(b) 10 kg, 35 kg
(c) 25 kg, 15 kg
(d) 30 kg, 20 kg

59. Two vessels A and b contain acid and water in the ratio 4 : 3 and 5 : 3 respectively. Then the

ratio in which these mixture to be mixed to obtain a new mixture in vessel C containing acid and water in the ratio 3 : 2 is
(a) 5 : 8 (b) 7 : 8
(c) 7 : 5 (d) 4 : 7

60. Prabha purchased 30 kg of rice at the rate of Rs. 17.50 per kg and another 30 kg rice at a certain rate. He mixed the two and sold the entire quantity at the rate of Rs. 18.60 per kg and made 20 per cent overall profit. At what price per kg did he purchase the lot of another 30 kg rice ?
(a) Rs. 14.50 (b) Rs. 12.50
(c) Rs. 15.50 (d) Rs.13.50

61. Sumit, Punit and Ramit started a business by investing their capital in the ratio 1 : 2 : 3. At the end of the business term, they received the profits in the ratio 1 : 2 : 3. Find the ratio of time for which they invested their capitals.
(a) 1 : 1 : 1 (b) 2 : 3 : 4
(c) 2 : 4 : 3 (d) 1 : 3 : 4.

62. Vinod and Ankit started a business, investing amounts in the ratio 2 : 3. If Vinod had invested an additional amount of Rs. 10,000, the ratio of Vinod's investment to Ankit's investment would have been 3 : 2. What was the amount invested by Vinod ?
(a) Rs. 8,000 (b) Rs. 12,000
(c) Rs. 9,000 (d) Rs. 10,000

63. A started a business with Rs. 10,000 and B joined him later with a capital of Rs. 40,000. If at the end of the year, they both get an equal share of the profit, how many months after the business started did B join it ?
(a) 4 months (b) 6 months
(c) 8 months (d) 9 months

64. A and B are partners in a business. A contributes $\frac{1}{4}$th of the capital for 15 months and B received $\frac{1}{4}$th of the profit. Find for how long B's money was used
(a) 1 year (b) 9 months
(c) 6months (d) 10 months

65. Veena started a business, investing Rs. 75,000. After 3 months, Poonam joined her with an amount of Rs. 1,25,000 and after another six months Sarita joined then with an amount of Rs. 1,50,000. Profit earned at the end of three years from when Veena started

the business should be distributed in what ratio among Veena, Poonam and Sarita, respectively ?
(a) 36 : 55 : 54
(b) 18 : 28 : 27
(c) 35 : 54 : 55
(d) 40 : 46 : 45.

66. What sum of money lent at 6% for 4 years will produce the same interest as Rs. 800 for 5 years at $4\frac{1}{4}$% ?
(a) Rs. 625 (b) Rs. 650
(c) Rs. 700 (d) Rs 750

67. The difference between compound interest and simple interest earned on a sum of money at the end of 4 years is Rs.256.40. To find out the sum, which of the following information given in the statements P and Q is/are necessary ?
P: Amount of simple interest occurred after 4 years
Q: Rate of interest per annum
(a) Only P is necessary
(b) Only Q is necessary
(c) Either P or Q is necessary
(d) Neither P nor Q is necessary

68. A tree increase annually by $\frac{1}{8}$th of its height. What will be its height after 2 years if it stands today 64 cm high ?
(a) 72 cm (b) 74 cm
(c) 81 cm (d) 85 cm

69. A can do a work in 7 days. If A does twice as much work as B in a given time, find how long A and B would take to do the work.
(a) $4\frac{2}{3}$ days (b) $4\frac{1}{2}$ days
(c) $4\frac{1}{3}$ days (d) 3 days

70. A can complete 1/3 of a work in 5 days and B complete 2/5 of the work in 10 days. In how many days both A and b together can complete the work ?
(a) 10 (b) $9\frac{3}{8}$
(c) $8\frac{4}{5}$ (d) $7\frac{1}{2}$

71. A and B are walking in the same direction. A who is ahead walks at the rate of $3\frac{1}{2}$ km/h, while B walks at the rate of 4 km/h. If the distance between them is now 6 km, in what time will B overtake A ?
(a) 12 h   (b) 10 h
(c) 8 h   (d) 6 h

72. City Y is half way between two other cities X and Z. All are alongside the river. X boat can go from X to Y and back in 2 h and 15 min and from Z to X in 3 h/min. How long would it take to go from 2 to X ?
(a) $1\frac{1}{3}$ h   (b) $1\frac{1}{2}$h
(c) $1\frac{3}{4}$h   (d) $1\frac{5}{6}$h .

73. I am walking on a platform at 8 km/h. A train comes from behind and crosses me in 30 seconds. If the length of the train be 300 m, its speed is
(a) 40 km/h   (b) 44 km/h
(c) 48 km/h   (d) 52 km/h

74. A train passes a platform, 90 metre long, in 30 seconds and man standing on the platform in 15 seconds. The seed of the train is
(a) 12.4 kmph   (b) 14.6 kmph
(c) 18.4 kmph   (d) 21.6 kmph

75. A man can row 6 km/h in still water. If the river is running at 2 km/h, it takes 3 hours more in upstream than to go downstream for the same distance. How far is the place ?
(a) 24 km   (b) 28 km
(c) 36 km   (d) 40 km

76. When the hands of a clock show 5 o' clock, the angle between them is

(a) 72 degree   (b) 150 degree
(c) 100 degree   (d) 120 degrees

77. P and Q are 27 km away. Two trains with speeds of 24 km/hr and 18 km/hr, respectively, start simultaneously from P and Q and travel in the same direction. They meet at a point R beyond Q. Distance between Q and R is
(a) 126 km   (b) 81 km
(c) 48 km   (d) 36 km.

78. A tank has leak which would empty the completely filled tank in 10 hours. If the tank is full of water and a tap is opened which admits 4 litres of water per minute in the tank, the leak takes 15 hours to empty the tank. How many litres of water does the tank hold ?
(a) 2400   (b) 4500
(c) 1200   (d) 7200

79. Two pipes A and B can fill a tank in 6 hours and 8 hours, respectively. If both the pipes are opened together, then after how many hours should B be closed so that the tank is full in 4 hours ?
(a) $\frac{2}{3}$ (b) 1
(c) 2   (d) $\frac{2}{3}$

80. John can run 1 km in 3 min 10 sec and Paul can cover the same distance in 3 min 20 sec. By what distance can John beat Paul ?
(a) 40 m   (b) 15 m
(c) 50 m   (d) 55 m.

ANSWERS KEYS

1	d	21	b	41	a	61	a
2	c	22	c	42	a	62	a
3	b	23	b	43	d	63	d
4	c	24	a	44	b	64	d
5	d	25	c	45	d	65	a
6	a	26	b	46	d	66	d
7	c	27	a	47	a	67	b
8	c	28	c	48	b	68	c
9	d	29	b	49	b	69	d
10	c	30	a	50	b	70	b
11	d	31	c	51	b	71	a
12	c	32	b	52	a	72	a
13	b	33	b	53	b	73	b
14	d	34	c	54	a	74	d
15	c	35	b	55	a	75	a
16	b	36	b	56	d	76	b
17	a	37	c	57	a	77	b
18	b	38	d	58	a	78	a
19	b	39	b	59	b	79	d
20	b	40	c	60	d	80	c