

Qs. 1-15. What should come in place of question mark (?) in the following questions?

1. $215 \times ? \times 12 = 136585 + 7895$

- (1) 56 (2) 54 (3) 52
(4) 58 (5) None of these

2. $(203 - 152) \div (0.75 \times 4) = ?$

- (1) 12 (2) 14 (3) 21
(4) 17 (5) None of these

3. $16.513 - 4.328 - 2.014 - 0.577 = ?$

- (1) 8.6 (2) 10.595 (3) 11.6
(4) 9.594 (5) None of these

4. $? \div 48 \times 15 = 405$

- (1) 1224 (2) 1248 (3) 1296
(4) 1272 (5) None of these

5. $33.3 + 3.03 + 0.03 + 30.03 + 0.003 + 303 = ?$

- (1) 366.399 (2) 369.393 (3) 336.933
(4) 339.639 (5) None of these

6. $(7.3\% \text{ of } 436) - (4.8\% \text{ of } 356) = ?$

- (1) 24.348 (2) 10.543 (3) 17.088
(4) 31.828 (5) None of these

7. $1534 \div 26 \times 8 + 12 = (?)^2$

- (1) 24 (2) 18 (3) 22
(4) 16 (5) None of these

8. $(9.75\% \text{ of } 316) - (3.82\% \text{ of } 120) = ?$

- (1) 26.266 (2) 26.226 (3) 26.262
(4) 26.622 (5) None of these

9. $65\% \text{ of } 284 + ? = 300$

- (1) 115.4 (2) 123.6 (3) 146.8
(4) 155.2 (5) None of these

10. $5339 \div ? = 562$

- (1) 9.5 (2) 11.5 (3) 13.5
(4) 15.5 (5) None of these

11. $(32)^2 + \sqrt{?} - (23)^2 = 536$

- (1) 1764 (2) 1849 (3) 1521
(4) 1681 (5) None of these

12. $(56.23 + 93.96 + 17.81) \div 6 = ?$

- (1) 24 (2) 24.5 (3) 26
(4) 32.5 (5) None of these

13. $(34)^{68} \times (34)^{-44} = ?$

- (1) $(34)^4$ (2) $(34)^{-4}$ (3) $(34)^{12}$
(4) $(34)^{\frac{12}{11}}$ (5) None of these

14. $6132 + 5619 - 4725 - ? = 3134 + 1710$

- (1) 2086 (2) 2234 (3) 2182
(4) 2342 (5) None of these

15. $(61)^{10} \times (61)^4 = ?$

- (1) $(61)^6$ (2) $(61)^{34}$ (3) $(61)^{25}$
(4) $(61)^{40}$ (5) None of these

16. The ages of Shauna and Imam are in the ratio of 7 : 3 respectively. After 9 years the ratio of their ages will be 4 : 3. What is age of Imam?

- (1) 7 years (2) 5 years (3) 3 years
(4) 12 years (5) None of these

17. By how much is $\frac{3}{7}$ th of 266 lesser than $\frac{4}{9}$ th of 504?

- (1) 114 (2) 120 (3) 104
(4) 111 (5) None of these

18. If the numerator of a fraction is increased by 200% and the denominator is increased by 300%, the resultant fraction is $\frac{5}{12}$. What was the original fraction?

- (1) $\frac{12}{9}$ (2) $\frac{5}{9}$ (3) $\frac{11}{5}$
(4) $\frac{9}{5}$ (5) None of these

19. Sumant started a business investing Rs 48,000. After 6 months Maurya joined him with a capital of Rs 56,000. At the end of the year the total profit was Rs 24,529. What is the difference between the share of profits of Sumant and Maurya?

- (1) Rs 6,455 (2) Rs 7,775 (3) Rs 5,545
(4) Rs 4,875 (5) None of these

20. In a class of 75 students, each student got sweets that are 20% of the total number of students. How many sweets were there?

- (1) 1100 (2) 1275 (3) 1125
(4) Cannot be determined (5) None of these

21. The compound interest accrued on an amount of Rs 18,000 at the end of three years is Rs 5,958. What would be the simple interest accrued on the same amount at the same rate in the same period?

- (1) Rs 5,100 (2) Rs 5,400 (3) Rs 5,700
(4) Rs 4,800 (5) None of these

22. Which number should replace both the question marks in the following equation?

$$\frac{?}{492} = \frac{123}{?}$$

- (1) 252 (2) 248 (3) 244
(4) 242 (5) None of these

23. What is 25% of 45% of $\frac{4}{9}$ th of 4540?

- (1) 217 (2) 207 (3) 237
(4) 227 (5) None of these

24. A sum of money is divided among A, B, C and D in the ratio of 3 : 7 : 9 : 13 respectively. If the share of B is Rs 9,180 more than the share of A, then what is the total amount of money of A and C together?

- (1) Rs 27,540 (2) Rs 27,560 (3) Rs 26,680
(4) Rs 24,740 (5) None of these

25. One-seventh of a number is 48. What will 72% of that number be?

- (1) 228.46 (2) 237.36 (3) 213.72
(4) 241.92 (5) None of these

Qs. 26-28. In the following number series only one number is *wrong*. Find out the *wrong* number.

26. 21 27 48 75 123 198 323

- (1) 198 (2) 323 (3) 75
(4) 27 (5) None of these

27. 16 17 32 99 392 1960 11784

- (1) 17 (2) 99 (3) 11784
(4) 1960 (5) None of these

28. 5 9 18 34 60 95 144

- (1) 144 (2) 95 (3) 18
(4) 9 (5) None of these

Qs. 29-33. What *approximate* value should come in place of question mark (?) in the following questions? (You are not expected to calculate the exact value.)

29. $(7159 + 6382 + 1156) \div (543 + 499 + 615) = ?$

- (1) 11 (2) 15 (3) 7
(4) 17 (5) 9

30. $544.134 + 8.886 - 5.435 \times 31.002 = ?$

- (1) 212 (2) 438 (3) 196
(4) 552 (5) 384

31. $(619\% \text{ of } 845) \div 723 = ?$

- (1) 12 (2) 7 (3) 19
(4) 23 (5) 29

32. $\sqrt{1562000} = ?$

- (1) 1175 (2) 1200 (3) 1250
(4) 1325 (5) 1485

33. $753362 \times 61 = ? \times 88888$

- (1) 517 (2) 527 (3) 537
(4) 547 (5) 557

Qs. 34-38. Study the table carefully to answer the questions that follow:

Year and Course-wise number of students enrolled in Hobby Classes

Courses → Years ↓	Book Binding	Candle Making	Sculpture Making	Wall Hanging	Flower Arrangement
2002	55	56	45	41	61
2003	76	67	56	54	62
2004	88	62	86	58	48
2005	45	75	75	67	46
2006	43	63	59	77	75
2007	67	56	67	74	84
2008	39	48	58	85	79

34. What is the respective ratio of number of Students enrolled in Sculpture Making to the number of Students enrolled in Book Binding in the year 2005?

- (1) 12 : 11 (2) 15 : 13 (3) 5 : 3 (4) 3 : 1 (5) None of these

35. What is the average number of Students enrolled in the Candle Making over the given years?

- (1) 94 (2) 88 (3) 73 (4) 61 (5) None of these

36. In 2008, the number of Students enrolled in Flower Arrangement is *approximately* what per cent of the number of Students enrolled in Wall Hanging?

- (1) 76 (2) 89 (3) 45 (4) 51 (5) 93

37. What is the difference between the total number of Students enrolled in Candle Making over the given years and the total number of Students enrolled in Wall Hanging over the given years?

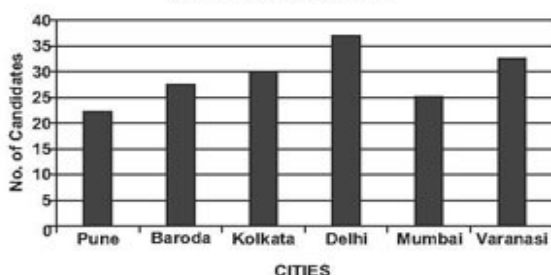
- (1) 39 (2) 27 (3) 32 (4) 26 (5) None of these

38. What is the difference between the average number of Students enrolled in Book Binding over the given years and the average number of Students enrolled in Flower Arrangement over the given years?

- (1) 6 (2) 7 (3) 8 (4) 9 (5) None of these

Qs. 39-43. Study the following graph carefully to answer the questions:

Number of Candidates (in thousands) Appearing for Combined Engineering Entrance Test (CEET) from the given Cities



39. The number of candidates appearing for CEET from Baroda is what per cent of the number of candidates appearing for CEET from Mumbai?

- (1) 110 (2) 90 (3) 85
(4) 103 (5) 117

40. The number of candidates appearing for CEET

from Delhi is what per cent of the total number of candidates appearing for CEET from all the Cities together (rounded off to two digits after decimal)?

- (1) 23.87 (2) 21.43 (3) 19.54
(4) 25.92 (5) None of these

41. What is the respective ratio of the number of students appearing for the CEET from Pune, Kolkata and Mumbai together to the number of students appearing for the CEET from Baroda, Delhi and Varanasi together?

- (1) 10 : 13 (2) 3 : 4 (3) 5 : 6
(4) 16 : 19 (5) None of these

42. What is the respective ratio of the number of candidates appearing for the CEET from Pune to Kolkata?

- (1) 3 : 4 (2) 4 : 5 (3) 11 : 13
(4) 9 : 11 (5) None of these

43. What is the approximate average number of candidates appearing for CEET from all the Cities together?

- (1) 31265 (2) 33456 (3) 29167
(4) 28754 (5) 32442

Qs. 44-48. Study the information carefully to answer the following questions:

There are 22560 employees in an organisation. The ratio of males to females is 7 : 5 respectively. All the employees are in six different departments viz Administration, Receiving and Dispatch, Personnel Department, Accounts, Vigilance and IT. 20 per cent of the females are in receiving and Dispatch. 15 per cent of the males are in Personnel Department. 15 per cent of the total numbers of employees are in Vigilance. Females in IT are 30 per cent of the females in Receiving and Dispatch. 40 per cent of the males are in Administration. Males in Receiving and Dispatch are 50 per cent of the females in the same. 30 per cent of the females are in Accounts. The ratio of males to females in the IT is 3 : 1 respectively. 30 per cent of the total number of employees are in Administration. The ratio of males to females in the Accounts is 23 : 47 respectively.

44. What is the total number of employees in Personnel Department?

- (1) 3384 (2) 3132 (3) 2256
(4) 2820 (5) None of these

45. What is the total number of males in IT?

- (1) 940 (2) 1974 (3) 1380
(4) 1692 (5) None of these

46. What is the total number of females in Vigilance?

- (1) 1474 (2) 1910 (3) 1158
(4) 1880 (5) None of these

47. Number of males in Accounts forms what per cent of the number of females in Receiving and Dispatch? (rounded off to two digits after decimal)

- (1) 45.98 (2) 66.64 (3) 73.40
(4) 53.32 (5) None of these

48. Number of males in Administration forms approximately what per cent of total number of the Employees in the organisation?

- (1) 45 (2) 77 (3) 82 (4) 51 (5) 23

Qs. 49-53. Study the table carefully to answer the questions that follow:

Number of Pass and Fail Students, of five different Classes, over the years

Years	CLASSES									
	VI		VII		VIII		IX		X	
	Pass	Fail	Pass	Fail	Pass	Fail	Pass	Fail	Pass	Fail
2003	56	08	95	10	53	04	84	03	68	11
2004	78	09	82	11	49	06	87	06	62	08
2005	96	13	63	09	68	08	82	08	54	05
2006	56	11	67	06	73	10	95	10	58	09
2007	49	12	85	07	81	11	68	13	82	13
2008	77	07	76	12	90	05	64	15	71	14

49. Which Class has maximum number of Pass Students from all the years together?

- (1) X (2) VI (3) IX (4) VII (5) VIII

50. What is the average number of Pass students of all the classes together in the year 2007?

- (1) 67 (2) 73 (3) 79 (4) 61 (5) None of these

51. What is the respective ratio of the total number of Pass Students of Class VII to that of Class VIII over the years?

- (1) 26 : 23 (2) 12 : 13 (3) 3 : 4
(4) 4 : 7 (5) None of these

52. What is the respective ratio of the total number of Fail students of Class IX to the total number of Fail students of Class VI over the years?

- (1) 5 : 6 (2) 3 : 4 (3) 4 : 9
(4) 7 : 11 (5) None of these

53. What is the average number of Fail students from Class X over the years?

- (1) 11 (2) 12 (3) 14 (4) 10 (5) None of these

Qs. 54-58. Directions: Each question below is followed by two statements A and B. You are to determine whether the data given in the statements is sufficient for answering the question. You should use the data and your knowledge of Mathematics to choose between the possible answers. Give answer:

(1) if the statement A alone is sufficient to answer the question, but the statement B alone is not sufficient.

(2) if the statement B alone is sufficient to answer the question, but the statement A alone is not sufficient.

(3) if both statements A and B together are needed to answer the question.

(4) if either the statement A alone or statement B alone is sufficient to answer the question.

(5) if you cannot get the answer from the statement A and B together, but need even more data.

54. The ages of Shruti and Aditi are in the ratio of 14 : 11. What is the age of Shruti?

A. After 6 years the ratio of Shruti's and Aditi's ages will be 17 : 14.

B. The ages of Aditi and Tulika are in the ratio of 11 : 6.

55. What is the three digit number?

- A. The three digit number is exact multiple of 9.
B. The first and the third digit is 8.
- 56.** What is the rate of interest p.c.p.a on an amount of Rs 15,000 deposited in a Bank?
A. The simple interest for three years is Rs 2,700.
B. The difference between the simple interest and compound interest is Rs 165.24.
- 57.** What is the age of C, in a group of A, B, C, D, E and F whose average age is 26 years?
A. Total of the ages of A and F is 48 years.
B. Total of the ages of B and D is 62 years.
- 58.** How many women can complete a piece of work in 10 days?
A. If the same piece of work is completed by 4 men in 6 days.
B. If the same piece of work is completed by 7 women in 14 days.

ANSWERS AND EXPLANATIONS

1. (1) 2. (4) 3. (4) 4. (3) 5. (2)
6. (5) 7. (3) 8. (2) 9. (1) 10. (1)
11. (4) 12. (5) 13. (1) 14. (3) 15. (2)
16. (3) 17. (5) 18. (2) 19. (1) 20. (3)
21. (2) $CI = P \left[\left(1 + \frac{R}{100} \right)^n - 1 \right] \therefore 5958$
 $\therefore 5958 = 18000 \left[\left(1 + \frac{R}{100} \right)^3 - 1 \right] \Rightarrow R = 10\%$
 $S.I. = \frac{18000 \times 10 \times 3}{100} = \text{Rs } 5400$
22. (5) $\frac{x}{492} = \frac{123}{x} \Rightarrow x = \sqrt{123 \times 492} = 246$
23. (4)
24. (1) A.T.S. $\frac{7-3}{3+7+9+13} x = 9180$
 $\Rightarrow x = 9180 \times \frac{32}{4}$
Reqd amount = $\frac{3+9}{32} \times \frac{9180 \times 32}{4}$
 $= \text{Rs } 27540$
25. (4) $\frac{72}{100} \times 48 \times \frac{7}{1} = 241.92$
26. (2) $21 + 27 = 48, 27 + 48 = 75, 48 + 75 = 123,$
 $75 + 123 = 198, 123 + 198 = 321.$
323 is wrong, it should be 321
27. (4) $16 \times 1 + 1 = 17, 17 \times 2 - 2 = 32,$
 $32 \times 3 + 3 = 99, 99 \times 4 - 4 = 392$
 $392 \times 5 + 5 = 1965, 1965 \times 6 - 6 = 11784$
 $\therefore 1960$ is wrong, it should be 1965
28. (5) By adding $2^2, 3^2, 4^2, 5^2 \dots$ we get the next no.
60 is wrong, it should be 59
29. (5) 30. (5) 31. (2) 32. (3) 33. (1)
34. (3) 35. (4)
36. (5) $79 \times \frac{100}{85} = 93$ approx

37. (5) 38. (1)
 $\frac{27.5}{25} \times 100 = 110$
39. (1) $\frac{37.5}{175} \times 100 = 21.43$
40. (2) $\frac{77.5}{97.5} = \frac{31}{39}$
41. (5) $\frac{22.5}{30.0} = \frac{3}{4}$
42. (1) $\frac{175 \times 1000}{6} = 29166.6 = 29167$
43. (3) $M = \frac{7}{12} \times 22560 = 13160, F = 9400$
- 44-48 $M = \frac{7}{12} \times 22560 = 13160, F = 9400$
 $F(\text{Receiving \& dispatch}) = \frac{20}{100} \times 9400 = 1880$
 $M(\text{Personnel department}) = \frac{15}{100} \times 13160$
 $= 1974$
Total no. of employees in vigilance
 $= \frac{15}{100} \times 22560 = 3384$
 $F(\text{IT}) = \frac{30}{100} \times 1880 = 564$
 $M(\text{Admin}) = \frac{40}{100} \times 13160 = 5264$
 $M(\text{Receiving \& dispatch}) = 1880 \times \frac{50}{100}$
 $= 940$
 $F(\text{Accounts}) = \frac{30}{100} \times 9400 = 2820$
 $M(\text{IT}) = \frac{3}{1} \times 564 = 1692$
Total no. of employees in Admin
 $= \frac{30}{100} \times 22560 = 6768$
 $F(\text{Admin}) = 6768 - 5264 = 1504$
 $M(\text{Accounts}) = \frac{23}{47} \times 2820 = 1380$
44. (5) 45. (4) 46. (5)
47. (3) $\frac{1380}{1880} \times 100 = 73.40$ approx
48. (5) $\frac{5264}{22560} \times 100 = 23.3$
49. (3) 50. (2) 51. (1) 52. (5) 53. (4)
54. (1) $\frac{14x+6}{11x+6} = \frac{17}{14}$, x can be calculated.
Shruti's age = $14x$
55. (3) 8×8 Sum of digits = $8 + x + 8 = 16 + x$
which is div. by 9 if $x = 5 \therefore \text{No.} = 858$
Both A and B are reqd.
56. (1) $R = \frac{I \times 100}{P \times T}$
57. (5)
58. (5)