Directions (1 - 5) : In the following questions two equations numbered I and II are given. You have to solve both the equations and   **Give answer if**

(1) x > y   (2) x ≥ y   (3) x < y   (4) x ≤ y

(5) x = y or the relationship cannot be established

1.   I. $\sqrt{1225}\ x + \sqrt{4900} = 0$ II. $(81)^{\frac{1}{4}}\ y + (343)^{\frac{1}{3}} = 0$

2.   I. $\frac{18}{x^2} + \frac{6}{x} - \frac{12}{x^2} = \frac{8}{x^2}$ II. $y^2 + 9.68 + 5.64 = 16.95$

3.   I. $\frac{(2)^5 + (11)^3}{6} = x^3$ II. $4y^3 = -(589 \div 4) + 5y^3$

4.   I. $12x^2 + 11x + 12 = 10\ x^2 + 22x$ II. $13\ y^2 - 18\ y + 3 = 9\ y^2 - 10y$

5.   I. $(x^{\frac{7}{5}} \div 9) = 169 \div x^{\frac{3}{5}}$ II. $y^{\frac{1}{4}} \times y^{\frac{1}{4}} \times 7 = 273 \div y^{\frac{1}{2}}$

6.   The cost of five chairs and three tables is Rs. 3,110. Cost of one chair is Rs. 210 less than cost of one table. What is the cost of two tables and two chairs?

(1) 1,660   (2) 1,860   (3) 2,600   (4) Cannot be determined   (5) None

7.   The respective ratio between the present ages of Ram, Rohan and Raj is 3 : 4 : 5. If the average of their present ages is 28 years then what would be the sum of the ages of Ram and Rohan together after 5 years?

(1) 45 years   (2) 55 years   (3) 52 years   (4) 59 years   (5) None of these

8.   The total area of a circle and a rectangle is equal to 1166 sq. cm. The diameter of the circle is 28 cms. What is the sum of the circumference of the circle and the perimeter of the rectangle if the length of the rectangle is 25 cm?

(1) 186 cm   (2) 182 cm   (3) 184 cm   (4) Cannot be determined   (5) None of these

9.   Raman scored 456 marks in an exam and Sita got 54 percent marks in the same exam which is 24 marks less than Raman. If the minimum passing marks in the exam is 34 percent, then how much more marks did Raman score than the minimum passing marks?

(1) 184   (2) 196   (3) 190   (4) 180   (5) None of these

10.   Smallest angel of a triangle is equal to two-third of the smallest angel of a quadrilateral. The ratio between the angles of the quadrilateral is 3 : 4 : 5 : 6. Largest angle of the triangle is twice its smallest angel. What is the sum of second largest angel of the triangle and largest angel of the quadrilateral?

(1) 160^0 (2)180^0 (3)190^0 (4)170^0 (5)None of these

11.   A 420 metre long train moving with an average speed of 120 km/hr crosses'a platform in 24 seconds. A man crosses the same platform in 4 minutes. What is the speed of man in metre/second?

(1) 2.4   (2) 1.5   (3) 1.6   (4) 2.0   (5) None of these

12.   The simple interest accrued on a sum of certain principal is Rs. 7,200 in six years at the rate of 12 p.c.p.a. What would be the compound interest accrued on that principal at the rate of 5 p.c.p.a. in 2 years?

(1) 1,020   (2) 1055   (3) 1050   (4) 1025   (5) None of these

13. Sum of square of first number and cube of second number together is 568. Also square of the second number is 15 less than square of 8. What is the value of three-fifth of the first number? (assuming both the numbers are positive)
(1) 18   (2) 8   (3) 9   (4) 16   (5) None of these

14. The sum of 8 consecutive odd numbers is 656. Also average of four consecutive even numbers is 87. What is the sum of the smallest odd numbers and second largest even number?
(1) 165   (2) 175   (3) 163   (4) Cannot be determined   (5) None

15. Seema purchased an item for Rs. 9,600 and sold it for a loss of 5 percent. From that money she purchased another item and sold it for a gain of 5 percent. What is her overall gain/loss?
(1) Loss of Rs. 36   (2) Profit of Rs. 24   (3) Loss of Rs. 54   (4) Profit of Rs. 36   (5) None

Directions (16 - 20) **:** Study the table carefully to answer the questions that follow:

Candidates who appeared and passed in the test from four schools in six different years

| Year | School | | | | | | | |
| | A | | B | | C | | D | |
	Appeared	Passed	Appeared	Passed	Appeared	Passed	Appeared	Passed
2004	124	78	445	354	454	343	546	345
2005	234	124	545	435	732	567	565	456
2006	456	235	664	454	693	456	235	112
2007	398	156	345	144	645	545	546	234
2008	546	346	584	354	354	258	656	564
2009	547	435	704	347	578	313	456	252

16. What was the total number of failed candidates from school-C in the year 2008 and the number of candidates who appeared in the exam from school-D in the year 2006?
(1) 335   (2) 325   (3) 322   (4) 332   (5) None of these

17. In which year was the difference between the number of candidates who appeared and passed in the exam from school-B second lowest?
(1) 2004   (2) 2005   (3) 2006   (4) 2007   (5) 2008

18. What was the respective ratio between the number of candidates who appeared from school-C in the year 2006 and the number of candidates who passed in the exam from school-D in the year 2009?
(1) 11 : 4   (2) 11 : 5   (3) 5 : 11   (4) 9 : 11   (5) None of these

19. Number of candidates who passed in the exam from school B in the year 2005 was approximately what percent of number of candidates who appeared from school-A in the year 2008?
(1) 76   (2) 87   (3) 90   (4) 84   (5) 80

20. What was the approximate percent increase in the number of candidates who passed in the exam from school-A in the year 2009 as compared to the previous year?
(1) 22   (2) 39   (3) 26   (4) 30   (5) 34

Directions (21 - 25) **:** What will come in place of the question mark (?) in the following questions?

21. $\frac{1}{6}$ of 92% of $1\frac{1}{23}$ of $(650) = 85 + ?$
(1) 18   (2) 21   (3) 19   (4) 28   (5) None of these

22. $92 \times 576 \div (2\sqrt{1296}) = (?)^3 + \sqrt{49}$
(1) 3   (2) $(9)^2$ (3) 9   (4) 27   (5) None of these

23. $3\frac{1}{4} + 2\frac{1}{2} - 1\frac{5}{6} = \frac{(?)^2}{10} + 1\frac{5}{12}$
(1) 25   (2) $\sqrt{5}$ (3) 625   (4) 15   (5) 5

24. $(\sqrt{8} \times \sqrt{8})^{\frac{1}{2}} + (9)^{\frac{1}{2}} = (?)^3 + \sqrt{8} - 340$
(1) 7   (2) 19   (3) 18   (4) 9   (5) None of these

25. $(15 \times 0.40)^4 \div (1080 \div 30)^4 \times (27 \times 8)^4 = (3 \times 2)^{? + 5}$
(1) 8   (2) 3   (3) 12   (4) 16   (5) None of these

Directions (26 - 30) **:** What approximate value will come in place of the question mark (?) in the following questions? (You are not expected to calculate the exact value.)

26. $\left(\frac{576}{81}\right) \times \frac{399}{39} \div \frac{41}{899} = ?$
(1) 1600   (2) 1650   (3) 1700   (4) 1550   (5) 1750

27. 67.99% of $1401 - 13.99\%$ of $1299 = ?$
(1) 700   (2) 720   (3) 770   (4) 800   (5) 740

28. $5466.97 - 3245.01 + 1122.99 = ? + 2309.99$
(1) 1130   (2) 1000   (3) 1100   (4) 1030   (5) 1060

29. $5998 \div 9.98 + 670.99 - 139.99 = ?$
(1) 1080   (2) 1280   (3) 1180   (4) 1130   (5) 1230

30. $-(4.99)^3 + (29.98)^2 - (3.01)^4 = ?$
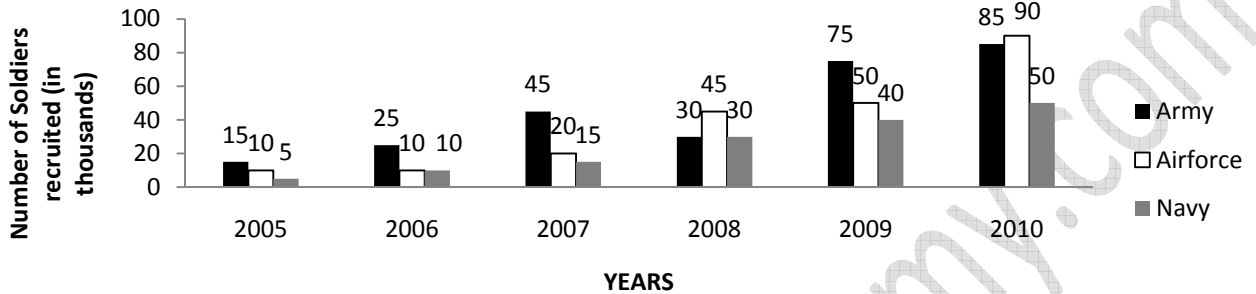(1) 550   (2) 590   (3) 620   (4) 650   (5) 690

Directions (31 - 35) **:** What will come in place of the question mark (?) in the following number series.

31. 1   7   49   343   (?)
(1) 16807   (2) 1227   (3) 2058   (4) 2401   (5) None of these

32. 13   20   39   78   145   (?)
(1) 234   (2) 244   (3) 236   (4) 248   (5) None of these

33. 12   35   81   173   357   (?)
(1) 725   (2) 715   (3) 726   (4) 736   (5) None of these

34. 3   100   297   594   991   (?)
(1) 1489   (2) 1498   (3) 1478   (4) 1498   (5) None of these

35. 112   119   140   175   224   (?)
(1) 277   (2) 276   (3) 287   (4) 266   (5) None of these

Directions (36 - 40) **:** Study the following graph carefully to answer the questions that follow:

Number of Soldiers recruited (in thousands) in three different forces in six different years
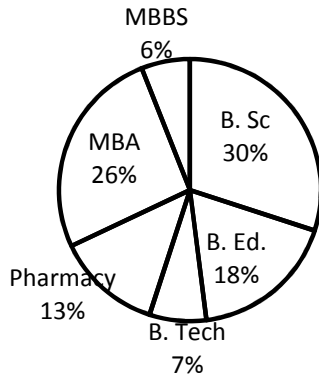

36. What was the average number of soldiers recruited in the Navy over all the years together?
(1) 25,000   (2) 24,000   (3) 2,400   (4) 28,000   (5) None of these

37. Number of soldiers recruited in Navy in the year 2009 was what percentage of soldiers recruited in Army in the year 2006?
(1) 140   (2) 150   (3) 160   (4) 180   (5) None of these

38. If 30 percent of soldiers recruited in Airforce in the year 2010 were females then what is the number of males recruited in Airforce in that year?
(1) 63,000   (2) 6,300   (3) 61,000   (4) 6,100   (5) None of these

39. What was the respective ratio between the number of soldiers recruited for Airforce in the year 2005 and the number soldiers recruited in Army in the year 2009?
(1) 2 : 15   (2) 5 : 13   (3) 2 : 17   (4) 15 : 4   (5) None of these

40. What was approximate percentage decrease in number of soldiers recruited in Army in the year 2008 as compared to the previous year?
(1) 20   (2) 23   (3) 38   (4) 30   (5) 33

Directions (41 - 45) : Study the following Pie-chart given below carefully to answer these questions.

41. What is the value of half of the difference between the number of students in MBA and MBBS?
(1) 800 (2) 1600   (3) 1300   (4) 650 (5) None of these

42. How much more percentage (approximately) of students are in MBA as compared to students in B. Ed.?
(1) 49   (2) 53   (3) 59   (4) 41   (5) 44

43. What is the total number of students in B.Ed., Pharmacy and MBBS together?
(1) 2465   (2) 2565   (3) 2405   (4) 2504   (5) None of these

44. What is the respective ratio between the number of students in Pharmacy and the number of students in B.Tech?
(1) 11 : 13   (2) 13 : 6   (3) 13 : 7   (4) 6 : 13   (5) None of these

Percentage distribution of students in different courses
TOTAL STUDENTS = 6500

45. Number of students in B.Sc. is approximately what percentage of the number of students in B.Ed.?
    (1) 167   (2) 162   (3) 157   (4) 153   (5) 150

Directions (46 - 50) **:** Study the following table carefully to answer the questions that follow:

Amount earned **(in lacs)** by five persons in six different years

Year	Person				
	A	B	C	D	E
2005	2.24	4.33	5.64	3.73	1.69
2006	1.44	3.34	6.93	5.52	5.52
2007	4.63	2.79	7.52	5.68	4.28
2008	6.65	6.63	5.83	6.74	6.83
2009	5.34	4.50	5.94	8.42	5.53
2010	7.38	5.36	7.84	9.45	9.94

46. What was the average of the earning of Person-B in the year 2006, that of person C in the year 2008 and E in the year 2005 together?
    (1) 3.62 lacs   (2) 2.64 lacs   (3) 3.64 lacs   (4) 10.86 lacs   (5) None of these

47. What was the respective ratio between the amount earned by Person-B in the year 2007 and Person-D in the year 2010?
    (1) 32 : 107   (2) 31 : 105   (3) 29 : 107   (4) 32 : 105   (5) None of these

48. What is the approximate percent increase in the amount earned by Person-D in the year 2010 as compared to the previous year?
    (1) 7   (2) 21   (3) 18   (4) 15   (5) 12

49. Whose earning increased consistently from the year 2005 to the year 2010?
    (1) A   (2) B   (3) C   (4) D   (5) E

50. Total amount earned by Person-A in the year 2006 and Person-C in the year 2010 together was approximately what percent of the amount earned by Person-E in the year 2009?
    (1) 151   (2) 155   (3) 168   (4) 174   (5) 162