e1 *Coaching center*
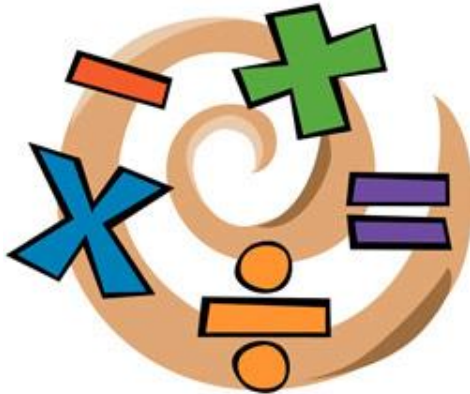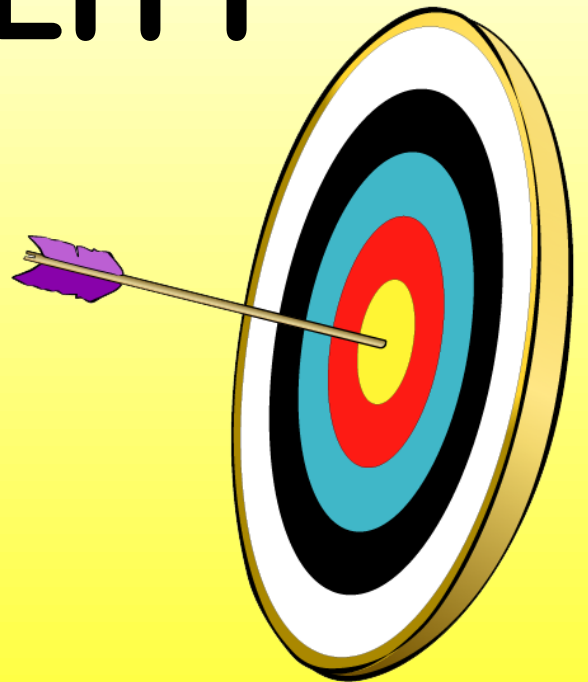
Classes by most Govt. exams cleared faculties in AMRITSAR

ARITHMETIC ABILITY

BANK PO • SSC • CDS • PUNJAB GOVT. JOBS

CONTENTS

1. PERCENTAGE

<u>Space for concepts and important points</u>

e1 coaching center

Scf-35, Kabir park, Amritsar

90567-03131

2

CLASS ASSIGNMENT

Find X% of Y

X	Y
30	240
50	700
45	320
22	480
38	720
90	350
16.66	216
37.5	640
33.33	150
83.33	144
66.66	270
28.56	980
87.5	1280
62.5	1360
44.44	1350
36.36	1320

1. What will be 80% of a number whose 200% is 90?
   a) 144   b) 72
   c) 36   d) 54

2. 25% of a number is less than 18% of 650 by 19. The number is
   a) 450   b) 544
   c) 380   d) 392

3. If 37 ½ % of a number is 900, then 62 ½ % of the number will be
   a) 1200   b) 1350
   c) 1500   d) 540

4. If 11 % of a number exceeds 7% of the same by 18, the number is
   a) 72   b) 360
   c) 450   d) 720

5. Two candidates fought an election. One got 65% of the votes and won by 300 votes. The total number of votes polled is
   a) 600   b) 800
   c) 1000   d) 1200

6. When 40% of a number is added to 42, the result is the number itself. The number is
   a) 82   b) 105
   c) 70   d) 72

7. If 75% of the students in a school are boys and the number of girls is 420, the number of boys is
   a) 1176   b) 1260
   c) 1350   d) 1125

8. A man received 15% increase in his salary. If his new salary is Rs.1932, his original salary (in rupees) was :
   a) 1642.20   b) 1820
   c) 1690   d) 1680

9. A student got 23% marks and failed by 15 marks, another student got 35 % marks and passed by 21 marks. Find
   a) maximum marks
   a) 300   b) 1200
   c) 500   d) 600

b) passing percentage
 a) 36%   b) 28%
 c) 30%   d) 38%

c) passing marks?
 a) 69   b) 105
 c) 90   d) 84

10. A student got 240 marks in a test and he
 failed by 6% point, another student got 320
 marks and passed by 4% points. Find the
 a) maximum marks
  a) 300   b) 500
  c) 800   d) 700

b) passing marks
 a) 260   b) 288
 c) 280   d) 262

c) passing %?
 a) 36%   b) 30%
 c) 40%   d) 35%

11. After spending 40% on machinery, 25% on
 building,15% on raw material and 5% on
 furniture, a small scale industry owner had
 a balance of Rs.130500. Total money with
 him (in rupees) was
 a) 650000   b) 722500
 c) 870000   d) 1390

12. A man spent 20% of his monthly earning
 on house rent. Out of the balance, he spent
 75% on the other house expenses. If he had
 a balance of Rs.250 at the end of the
 month, the monthly earning of the man (in
 rupees) is
 a) 5000   b) 1250
 c) 1500   d) 2500

13. A person purchased some electronic items,
 60% of those were colored T.Vs. 5% of
 T.Vs were found to be defective. Defective
 T.Vs are what % of total items
 a) 3%   b) 6%
 c) 9%   d) 10%

14. A number increased by 37 ½ % gives 33.
 The number is
 a) 27   b) 25
 c) 22   d) 24

15. The population of a village is 5000 and it
 increases at the rate of 20% p.a. After 2
 years, the population will be
 a) 7000   b) 7200
 c) 6202   d) 6300

16. The forest cover in town A in 2002 was
 1200 hectares. It increased by 5% and
 10% respectively during years 2003 and
 2004. Find the forest cover of 'A' in
 2004.

4

a) 1380   b)1386

c) 1320   d) none

c) $\frac{4}{13}$ d) $\frac{4}{15}$

17. The number of colleges in a town increases by 5% annually. If it is 15435 now, the number of colleges 2 years ago was
a) 14000   b) 13930
c) 13700   d) 14800

18. The value of a machine depreciates at the rate of 16% per annum. If the price of a new machine is Rs.62500 its value after 3 years, in rupees) will be
a) 32500   b) 36054
c) 37044   d) 38400

19. The value of a machine depreciates at the rate of 10% per annum. It was purchased 3 years ago. If it's present value is Rs.26389.80, the purchase price of the machine (in rupees), was
a) 32000   b) 36200
c) 37500   d) 35600

20. After increasing the numerator of a fraction by 20% and decreasing the denominator by 30% we got 4/5. What is the original fraction.
a) $\frac{7}{13}$ b) $\frac{7}{15}$

21. The length and breadth of a square are increased by 30% and 20% respectively. The area of the rectangle formed exceeds the area of the square by
a) 20%   b) 36%
c) 50%   d) 56%

22. The length of a rectangle is increased by 30% and breadth decreased by 20%. The % change in area of rectangle is
a) 56% increase
b) 16% decrease
c) 4% increase
d) 4% decrease

23. On decreasing the price of fans by 30%, the sale is increased by 20%. What is the effect on the income of shopkeeper?
a) 10% increase
b) 10% decrease
c) 16% increase
d) 16% decrease

24. The radius of a circle is increased by 1%. What is the increase per cent in its area?
a) 1%   b) 1. 1%
c) 2.01%   d) 2%

5

25. In measuring the side of a square, an error of 5% in excess is made. The error percent in the calculated area is
a) 10%   b) 10.25%
c) 10.5%   d) .25%

26. Water tax is increased by 20% and its consumption is decreased by 20%. Find change in the expenditure
a) nil
b) 5% decrease
c) 4% increased
d) 4% decrease

27. A man's wages were decreased by 50%. Again the reduced wages were increased by 50%. He lost
a) 25%   b) 2.5%
c) .25%   d) 0%

28. The length of a rectangle is increased by 20 % then by how much the breadth should be decreased so that the area remains the same?
a) 20%   b) 10%
c) 16.66%   d) 33.33%

29. The price of cooking oil has increased by 25%. The percentage of reduction that a family should affect in the use of cooking oil so as not to increase the expenditure on this account is
a) 15%   b) 20%
c) 25%   d) 33.33%

30. The price of a commodity has increased by 60%. In order to restore to the original price, the new price must be reduced by
a) 33%   b) 37.5%
c) 40%   d) 45%

31. The price of sugar decreased by 20 %, due to which a person can now buy 3 kg of sugar more than earlier in Rs.600. Find the earlier price of sugar?
a) 50   b) 40
c) 36   d) none

32. The price of eggs reduced to 75% and now a person can buy 2 dozen eggs more in rs.162. Find the original price of eggs per dozen?
a) 25   b) 54
c) 27   d) 20.25

33. In 2014, 60% students in a school were boys. Due to new admissions in 2015, the number of boys increased by 20% and number of girls increased by 30%. Find the % increase in the strength of school due to admissions.
a) 76%   b) 26%
c) 24%   d) 74%

34. X's salary is half that of Y, If X got a 50% rise in his salary and Y got a 25% rise in his salary, then the percentage increase in Combined salaries of both is
a) 30   b) 33.33
c) 37   d) 75

35. A man spends 75% of his income. His income is increased by 20% and he increased his expenditure by 10%. His savings are increased by
a) 10%   b) 17.5%
c) 37.5%   d) 50%

36. A mixture of 40 liters of milk and water contains 10% water. How much water should be added to it so that water may be 20% in the new mixture?
a) 5 liters   b) 4 titers
c) 6.5 liters   d) 7.5 liters

37. One liter of water is added to 5 liters of a 20% solution of alcohol in water. The strength of alcohol is now
a) 12 .5 %   b) 16.66 %
c) 16%   d) 24%

38. One liter of water evaporated from 6 liters of a solution containing 4% of sugar. The percentage of sugar in the remaining solution is
a) 1%   b) 5%
c) 4.8%   d) 3%

39. If A's income is 30% more than B's, then how much percent is B's income less than A's?
a) 30%   b) 25%
c) 23 1/13 %   d) 33 %

40. If A's income is 30% less than B's, then how much percent is B's income more than A's?
a) 30%   b) 32 %
c) 42.84 %   d) 51%

41. If A's income is 25% more than B's and B's income is 20% more than C's, by what percent is A's income more than C's
a) 15%   b) 25%

c) 33%   d) 50%

42. Two numbers are less than a third number by 30% and 37% respectively. How much per cent is the second number less than the first?
a) 7%   b) 4%
c) 11.11%   d) 10%

43. 5% income of A is equal to 15% income of B and 10%income of B is equal to 20% income of C. If income of C is Rs.2000, then total income of A, B and C is
a) 6000   b) 9000
c) 12000   d) 18000

44. What is 170% of 1140?
a) 1938   b) 1824
c) 1995   d) 1881
e) NOT

45. 65g is what percent of 2 kg?
a) $\frac{13}{4}$ b) $\frac{65}{2}$
c) $\frac{15}{8}$ d) $\frac{13}{8}$

46. $\frac{2}{3}$ is what percent of $\frac{1}{3}$?
a) 50   b) 33.33
c) 150   d) 200

47. What is 20% of 25% of 300?
a) 15   b) 60
c) 45   d) 392

48. If $83\frac{1}{3}$% of a number is 900, then 44.44% of the number will be
a) 333.33   b) 480
c) 2430   d) 520

49. If 32% of a number exceeds 27% of the same by 28, the number is
a) 560   b) 360
c) 460   d) 720

50. When 30% of a number is added to 54, the result is 20% more than the number. The number is
a) 72   b) 60
c) 70   d) 108

51. If 8% of x is the same as 4% of y, then 20% of x is the same as:
a) 10% of y   b) 16% of y
c) 80% of y   d) 50 % of y

52. If 80% of A=50% of B and B=x% of A, then the value of x is
a) 400   b) 300
c) 160   d) 150

53. If p% of p is 36, then p is equal to:
a) 3600   b) 600
c) 60   d) 15

54. If 30% of A is added to 40% of B, the answer is 80% of B. What percent of A is B?
a) 30%   b) 40%
c) 70%   d) 75%

55. If $30\% \, of \, (x-y) = 20\% \, of \, (x+y)$, then what percent of x is y?
a) 25   b) 20
c) 30   d) 24

56. $(x\% \, of \, y + y\% \, of \, x)$ is:
a) $x\% \, of \, y$ b) $y\% \, of \, x$
c) $2\% \, of \, xy$ d) $xy\% \, of \, 3$

57. The difference of two numbers is 45% of their sum. The ratio of the larger number to the smaller number is
a) 20:9   b) 9:20
c) 29:11   d) 11:29

58. Product of one third of a number and 150% of another number is what percent of the product of the original numbers?
a) 80   b) 50
c) 75   d) 120
d) None of these

59. Two candidates fought an election. One of them got 64% of the total votes polled and won with 392 votes. What was the total number of votes polled?
a) 1500   b) 1580
c) 1550   d) can't say
e) NOT

60. If 55% of the population of a city is male and the number of females is 1350, the number of males is
a) 1570   b) 1450
c) 1550   d) 1650

61. 405 sweets were distributed equally among children in such a way that the number of

sweets received by each child is 20% of the total number of children. How many sweets did each child receive?

a) 15   b) 45
c) 9   d) 18
e) None of these

62. The sum of number of boys and girls in a school is 150. If the number of boys is x, the number of girls becomes x% of the total number of students. The number of boys is

a) 90   b) 50
c) 40   d) 60

63. A man received $22\frac{1}{2}$% increase in his salary. If his new salary is Rs.9800, his original salary (in rupees) was :

a) 4500   b) 1800
c) 8000   d) 8100

64. In a college, 40% of the students were allotted group A, 75% of remaining were given group B and the remaining 12 students were given group C. Then the number of students who applied for the groups is

a) 100   b) 60
c) 80   d) 92

65. In an examination, a student who gets 20% of the maximum marks fails by 5 marks. Another student who scores 30% of the maximum marks gets 20 marks more than the pass marks. Find

a) maximum marks

a) 350   b) 200
c) 250   d) 400

b) passing percentage

a) 32%   b) 23%
c) 22%   d) 20%

c) passing marks?

a) 45   b) 50
c) 66   d) 55

66. Rubina decided to donate 16% of her monthly salary to an NGO. On the day of donation she changed her mind and donated Rs.6567 which was 75% of what she had decided earlier. How much is Rubina's monthly salary?

a) 8756   b) 54725
b) 656700   d) 45696
e) None of these

67. Vaisali spent Rs.31897 on the air conditioner for her home, Rs.38789 on buying plasma television and the remaining 23% of the total amount she had as cash with her. What was the total amount?

a) 74625   b) 86750
c) 91800   d) can't say
e) None of these

68. Ms. Puja Pushpan invest 13% of her monthly salary, i.e. Rs.8554 in Medical Policies. Later she invest 23% of her monthly salary on Child Education Policies; also she invest another 8% of her monthly salary on Mutual Funds. What is the total annual amount invested by Ms. Puja Pushpan?

a) 28952   b) 43428
c) 347424   d) 173712
e) None of these

69. Mr. Girdhar spends 50% of his monthly income on household items and out of the remaining he spends 50% on transport, 25% on entertainment, 10% on sports and remaining amount of Rs.900 is saved. What is Mr. Girdhar's monthly income?

a) 6000   b) 12000
c) 9000   d) can't say
e) None of these

70. An HR company employs 4800 people, out of which 45% are males and 60% of males are either 25 years or older. How many males are employed in HR company who are younger than 25 years?

a) 2480   b) 2320
c) 1278   d) 864
e) None of these

71. Out of 2500 people, only 60% have saving habit. If 30% save with bank, 32% with post office and the rest with shares, the number of shareholders are

a) 450   b) 570
c) 950   d) 1250

72. In an election between two candidates, 75% of the voters cast their votes, out of which 2% votes were declared invalid. A candidate got 9261 votes which were 75% of the valid votes. The total number of voters enrolled in that election was

a) 16800   b) 23500
c) 22000   d) 27500

73. A number increased by 55.55% gives 126. The number is

a) 27   b) 72
c) 81   d) 90

74. If the population of a town is 64000 and its annual increase is 10%, then its correct population at the end of 3 years will be:

a) 80000   b) 85154
c) 85000   d) 85100

75. A district has 64000 inhabitants. If the population increases at the rate of $2\frac{1}{2}$% per annum, the number of inhabitants at the end of 3 years will be

a) 70000   b) 69200
c) 68921   d) 68911

76. The price of an article was first increased by 10% and then again by 20%. If the last increased price be Rs.33, the original price was
a) 30 b) 27.50
b) 26.50 d) 25

77. A papaya tree was planted 2 years ago. It increases at the rate of 20% every year. If at the present, the height of tree is 540 cm, what was it when the tree was planted?
a) 324 cm b) 400 cm
c) 375 cm d) 432 cm

78. The value of a machine depreciates by 5% every year. If its present value is Rs.2,00,000, its value after two years will be was
a) 1,80,500 b) 1,80,000
c) 1,99,000 d) 2,10,000

79. The value of a machine is Rs.6250. It decreases by 10% during the first year, 20% during the second year and 30% during the third year. What will be the value of the machine after 3 years?
a) 2650 b) 3050
c) 3150 d) 3510

80. The value of a property decreases every year at the rate of 5%. If its present value is Rs.4,11,540, what was the value 3 years ago?
a) 4,50,000 b) 4,60,000
c) 4,75,000 d) 4,80,000

81. The numerator of a fraction is increased by 20% and the denominator is decreased by 20%. The value of the fraction becomes $\frac{4}{5}$. The original fraction is
a) $\frac{2}{3}$ b) $\frac{8}{15}$
c) $\frac{7}{11}$ d) $\frac{4}{5}$

82. If the numerator of a fraction is increased by 400% and the denominator is increased by 500%, the resulting fraction is $\frac{20}{27}$. What was the original fraction?
a) $\frac{9}{8}$ b) $\frac{11}{12}$
c) $\frac{3}{4}$ d) can't say
e) None of these

83. If the numerator of a fraction is increased by $\frac{1}{4}$ and the denominator is decreased by $\frac{1}{3}$, the new fraction obtained is $\frac{33}{64}$. What was the original fraction?
a) $\frac{9}{11}$ b) $\frac{5}{7}$
c) $\frac{3}{7}$ d) $\frac{7}{9}$
e) None of these

84. When the price of cloth was reduced by 25%, the quantity of cloth sold increased by 20%. What was the effect on gross receipt of the shop?
a) 5% increase b) 5% decrease
b) 10% increase d) 10% decrease

85. The number of seats in a cinema hall is increased by 25%. The cost of each ticket is also increased by 10%. The effect of these changes on the revenue collection will be an increase of
a) 37.5% b) 45.5%
c) 47.5% d) 49.5%

86. If the price of a book is first decreased by 25% and then increased by 20%, the net change in the price of the book will be
a) 10% decrease b) 5% decrease
c) no change d) 5% increase

87. The number of employees working in a farm is increased by 25% and the wages per head are decreased by 25%. If it results in $x\%$ decrease in total wages, then the value of x is
a) 0 b) 25
c) 20 d) $\frac{25}{4}$

88. The strength of a school increases and decreases every alternate year. It starts with increase by 10% and thereafter the percentage of increase/decrease is the same. Which of the following is definitely true about the strength of school in 2000 as compared to that in 1996?
a) Increase approximately by 2%
b) Decrease approximately by 2%
c) Increase approximately by 20%
d) Decrease approximately by 20%
e) None of these

89. The price of an article was increased by r%. Later the new price was decreased by r%. If the latest price was Rs.1, then the original price was
a) Rs.1
b) Rs.$\frac{1-r^2}{100}$
c) Rs.$\frac{\sqrt{1-r^2}}{100}$
d) Rs.$\left(\frac{10000}{10000 \quad 2}\right)$

90. The base of a triangle is increased by 20 % then by how much the height should be decreased so that the area remains the same?
a) 20% b) 10%
c) 16.66% d) 33.33%

91. The production in an industry is decreased by 20% due to the retirement of senior employees. By what percent should the

10

working hours be increased to restore the original production?

a) 18%   b) 20%

c) 22%   d) 25%

92. If the duty on an article is reduced by 40% of its present rate, by how much percent must its consumption increase in order that the revenue remains unaltered?

a) 60%   b) 62.33%

c) 72%   d) 66.66%

93. A number is increased by 20% and then again by 20%. By what percent should the increased number be reduced so as to get back the original number?

a) $30\frac{5}{9}\%$ b) $19\frac{11}{13}\%$

c) 40%   d) 44%

94. The price of sugar reduced by 20 %. Now a person can buy 500gm more sugar for Rs.36. The original price of sugar per kilogram was

a) 14.40   b) 18

c) 15.60   d) 16.50

95. Due to an increase of 50% in the price of eggs, 4 eggs less are available for Rs.24. The present rate of eggs per dozen is

a) 24   b) 27

c) 36   d) 42

96. The cost of an apple is twice that of a banana and the cost of a banana is 25% less than that of a guava. If the cost of each type of fruit is increased by 10%, then the percentage increase in the cost of 4 bananas, 2 apples and 3 guavas is

a) 10%   b) 12%

c) 16%   d) 18%

97. In a village, 60% of the adults were males and the rest were females. Due to demographic changes the number of males increased by 20% and number of females increased by 30%. Find the % increase in the population of the village.

a) 76%   b) 26%

c) 24%   d) can't say

98. Two numbers are respectively 20% and 50% more than a third number. The ratio of two numbers is

a) 2:5   b) 3:5   c) 4:5   d) 6:7

99. In an examination the percentage of students qualified to the number of students appeared from school A is 70 %. In school B the number of student appeared is 20% more than the students appeared from school A and the number of students qualified from school B is 50% more than the students qualified from school A. What is the percentage of students qualified to

the number of students appeared from school B?

a) 30%   b) 70%

c) 87.5%   d) 78.5%

100. Fresh grapes contain 80% water while dry grapes contain 10% water. If the weight of dry grapes is 250 kg, what was its total weight when it was fresh?

a) 1000 kg   b) 1100 kg

b) 1125 kg   d) 1225 kg

101. Fresh cherries contain 99% water. Suppose you have one kg of fresh cherries. After a few hours in sun, some water evaporates and the percentage of water in the cherries became 98%. The new weight of cherries (in grams) is

a) 750   b) 700

c) 600   d) 500

Answer key:

1. c	2. d	3. a	4. c	5. c
6. c	7. b	8. d	9. a)a	9. b)b
9. c)d	10. a)c	10. b)b	10. c)a	11. c
12. b	13. a	14. d	15. b	16. b
17. a	18. c	19. b	20. b	21. d
22. c	23. a	24. c	25. b	26. d
27. a	28. c	29. b	30. b	31. a
32. c	33. c	34. b	35. d	36. a
37. b	38. c	39. c	40. c	41. d
42. d	43. d	44. a	45. a	46. d
47. a	48. b	49. a	50. b	51. a
52. c	53. c	54. d	55. b	56. c
57. c	58. b	59. e	60. d	61. b
62. d	63. c	64. c	65. a)c	65. b)c
65.c)d	66.b	67.c	68.a	69.b
70.d	71.b	72.a	73.c	74.b
75.c	76.d	77.c	78.a	79.c
80.d	81.b	82.e	83.e	84.d
85.a	86.a	87.d	88.b	89.d
90.c	91.d	92.d	93.a	94.b
95.c	96.a	97.c	98.b	99.c
100.b	101.d			

2. INTEREST

<u>Space for concepts and important points</u>

e1 coaching center

coaching center
90567-03131
Scf-35, Kabir park, Amritsar

CLASS ASSIGNMENT
SIMPLE INTEREST

1. Find simple interest for following values:
   a) P=Rs.2000   R=2%   T=5 years
   b) P=Rs3200   R=3%   T=5 years
   c) P=Rs2550   R=5%   T=4 years
   d) P=Rs1500   R=6%   T=8 years
   e) P=Rs1750   R=7%   T=6 years

2. Find the amount for following values:
   a) P=Rs1650   R=8%   T=5 years
   b) P=Rs5200   R=9%   T=2 years
   c) P=Rs9150   R=10%   T=3 years
   d) P=Rs3750   R=11%   T=2 years
   e) P=Rs1500   R=12%   T=5 years

3. Find what principal will produce Rs.60 as simple interest at 6% p.a. in 5 years?
   a) Rs.175   b) Rs.350
   c) Rs.200   d) None of these

4. The sum of money that will produce Rs.1770 interest in $7\frac{1}{2}$ years at 8% simple interest per annum is:-
   a) Rs.2950   b) Rs.3120
   c) Rs.2800   d) None of these

5. If a certain sum of money borrowed at 5% per annum simple interest amounts to Rs.1020 in 4 years, then the sum of money borrowed is:-
   a) Rs.816   b) Rs.925
   c) Rs.750   d) Rs.850

6. What principal will amount to Rs.15000 at 10% per annum in 5 years?
   a) Rs.10000   b) Rs.8700
   c) Rs.10500   d) Rs.7500

7. Rakesh borrowed Rs.5000 from Ganesh at simple interest. If Ganesh got Rs.500 more than his capital after 5 years, then the rate of interest per annum is
   a) 4%   b) 3%
   c) 2%   d) 10%

8. The rate per cent per annum at which Rs.1200 amount to Rs.1440 in 4 years is:-
   a) 5%   b) 4%
   c) 6%   d) 20%

9. If the simple interest on a certain sum of money for 2 years is one-fifth of the sum, then the rate of interest per annum is:-
   a) 9%   b) 10%
   c) 8%   d) None of these

10. If the simple interest on a certain sum of money is $\frac{4}{25}$ of the sum and the rate per cent equals the numbers of years, then the rate of interest per annum is:-
a) 2%
b) 3%
c) 4%
d) None of these

11. A sum of money at simple interest becomes four times in 30 years. The rate percent of interest per annum is:-
a) $13\frac{3}{4}$ %
b) 13.33 %
c) 10 %
d) None of these

12. In how many years will a sum treble itself at 10% per annum simple interest?
a) 15 years
b) 20 years
c) 19 years
d) 30 years

13. A sum of money doubles itself in 8 years. In how many years will it treble?
a) 16 years
b) 15 years
c) 14 years
d) 12 years

14. Sumit lent some money to Mohit at 5% per annum simple interest. Mohit lent the entire amount to Birju on the same day at 8.5% per annum. In this transaction after a year Mohit earned a profit of Rs.350. Find the sum of money lent by Sumit to Mohit.
a) Rs.9000
b) Rs.10000
c) Rs.10200
d) None of these

15. A sum was put at simple interest at a certain rate for 4 years. Had it been put at 2% higher rate, it would have fetched Rs.56 more. Find the sum.
a) Rs.680
b) Rs.600
c) Rs.720
d) Rs.700

16. If the difference between the simple interest on a certain sum for 4 years at 2.5 % per annum and the simple interest on the same sum for 5 years at 3% per annum is Rs.60, then the sum is:-
a) Rs.60000
b) Rs.6000
c) Rs.1200
d) Rs.1500

17. If a certain sum of money amounts to Rs.1760 in two years and Rs.2000 in 5 years at simple interest, then the sum is:-
a) Rs.1960
b) Rs.1590
c) Rs.1600
d) Rs.1680

18. If a certain sum of money at simple interest amounts to Rs.2800 in 2 years and to Rs.3550 in further 5 years, then the rate of interest per annum is:-
a) 4%
b) 6%
c) 5%
d) None of these

19. The simple interest on a sum will be Rs.600 after 10 years. If the principal is trebled after 5 years, what will be the total interest at the end of the tenth year?
a) Rs.1200
b) Rs.1190
c) Rs.1210
d) None of these

20. If Rs.7700 are divided among three brothers Anuj, Vijay and Dhiraj in such a way that simple interest on each part at 5% per annum after 1, 2 and 3 years, respectively remains equal. The share of Anuj is more than that of Dhiraj by:-
a) Rs.1800
b) Rs.2500
c) Rs.3000
d) Rs.2800

21. Ajay took Rs.5375 from his friend Vijay and promised to pay him in 4 equal annual installments at a rate of 5% p.a. How much money will Ajay pay annually?
a) 1612.50
b) 1835
c) 1935
d) 1500

22. A moneylender gave Rs.2800 to one of his clients, to be paid back in five equal annual installments. What amount will the moneylender receive annually from his client if the rate of interest is 10% p.a.?
a) 700
b) 750
c) 800
d) none

23. The annual payment that will discharge a debt of Rs.47250 in 3 years at the rate of 5% per annum simple interest is:
a) 8000
b) 10000
c) 15000
d) none

COMPOUND INTEREST
24. Find the amount of the sums given below:
a) P=Rs.1000, R=20%, T=3 years
b) P=Rs.1250, R=20%, T=3 years
c) P=Rs.5120, R=25%, T=4 years
d) P=Rs.1296, R=16.66% T=3 years
e) P=Rs.5000, R=2% T=3 years

25. Find compound interest for following values:
a) P=Rs1800, R=3% T=2 years
b) P=Rs6860, R=14.28% T=3 years
c) P=Rs5120, R=12.5% T=2 years
d) P=Rs4050, R=22.22% T=2 years
e) P=Rs1890, R=33.33% T=3 years

26. The compound interest on Rs.10000 at 20% per annum at the end of 1 year 6 months if the interest is calculated half-yearly will be:-
a) Rs.5320
b) Rs.3310
c) Rs.4340
d) None of these

31. What will be the compound interest on a sum of Rs.1875 after 2 years if the rate of interest for the first years is 4% and that for the second year is 8%?
a) Rs.231   b) Rs.341
c) Rs.241   d) None of these

27. The compound interest on Rs.12000 for 9 months at 20% per annum, interest being compounded quarterly, is:-
a) Rs.1891.50 b) Rs.1901.50
c) Rs.1791.50 d) None of these

32. If a sum of money at compound interest amounts to thrice itself in 2 years, then in how many years will it be 9 times itself?
a) 6 years   b) 4 years
c) 9 years   d) None of these

28. The compound interest on Rs.8000 in 2.5 years at 10% p.a. compounded annually is:-
a) Rs.10164   b) Rs.2164
c) Rs.2264   d) None of these

33. A sum of money becomes 8 times in 15 years, when compounded annually. How many times will it become in 20 years?
a) 8   b) 16
c) 24   d) 4

29. A sum put out at 4% per annum compound interest payable half-yearly amounts to Rs.6632.55 in 1½ years. The sum is:-
a) Rs.6530   b) Rs.6470
c) Rs.6250   d) None of these

34. At what rate per cent compound interest does a sum of money become 16 times in 4 years?
a) 75%   b) 2%
c) 50%   d) 100%

30. On what sum will the compound interest for 2½ years at 10% per annum calculated yearly amount to Rs.6352.50?
a) Rs.4000   b) Rs.4500
c) Rs.5000   d) None of these

35. The difference between simple interest and compound interest on Rs.1250 for 2 years at 4% p.a. is:-
a) Rs.3   b) Rs.4
c) Rs.1   d) Rs.2

c) Rs.400   d) None of these

36. The difference between the compound interest and simple interest on a certain sum at 5% for 2 years is Rs.1.50. The sum is:-
a) Rs.700   b) Rs.600
c) Rs.500   d) None of these

41. The difference between the compound interest and simple interest on Rs.8000 for 3 years at 5% per annum is:-
a) Rs.61   b) Rs.63
c) Rs.65   d) None of these

37. On a certain sum of money, the simple interest for 2 years is Rs.200 at the rate of 7% per annum. Find the difference in CI and SI.
a) Rs.7   b) Rs.9
c) Rs.11   d) Rs.14

42. The difference between the compound interest and simple interest on a certain sum at 3% per annum for 3 years is Rs.27.27. The sum is:-
a) Rs.12000   b) Rs.10000
c) Rs.15000   d) None of these

38. The simple interest on a certain sum at 4% per annum for 2 years is Rs.80. The compound interest on the same sum for the same period is:-
a) Rs.91.60   b) Rs.81.60
c) Rs.71.60   d) None of these

43. A certain sum of money at compound interest grows up to Rs.12960 in 2 years and up to Rs.13176 in 3 years. Find the rate per cent per annum.
a) $1\frac{1}{3}\%$ b) $2\frac{1}{3}\%$
c) $1\frac{2}{3}\%$ d) None of these

39. If the compound interest on a certain sum for 2 years is Rs.60.60 and the simple interest is Rs.60, then the rate of interest per annum is:-
a) 2%   b) 3%
c) 4%   d) None of these

44. What sum of money at compound interest will amount to Rs.650 at the end of the first year and Rs.676 at the end of the second year?
a) Rs.825   b) Rs.925
c) Rs.625   d) None of these

40. If the compound interest on a certain sum for 2 years is Rs.105 and simple interest is Rs.100, then the sum is:-
a) Rs.300   b) Rs.500

45. A sum of Rs.1260 is borrowed from a money lender at 10% p.a. compounded annually. If the amount is to be paid back in two equal annual installments, find the annual installment.
a) Rs.726   b) Rs.626
c) Rs.526   d) None of these

46. A builder borrows Rs.2550 to be paid back with compound interest at the rate of 4% p.a by the end of 2 years in two equal yearly installments. How much will each installment be?
a) Rs.1275   b) Rs.1377
c) Rs.1283   d) Rs.1352

47. Kamal borrowed Rs.6800 as a loan which is to be paid with an interest rate of 12.5% compounded annually in two equal installments. Find the value of each installment.
a) Rs.8100   b) Rs.4050
c) Rs.4150   d) Rs.4000

48. A man buys a scooter on making a cash down payment of Rs.16224 and promise to pay two more yearly installments of equivalent amount in next two years. If the interest rate is 4% per annum and it's compounded yearly. The cash value of scooter is
a) 40,000   b) 46,000
c) 46,824   d) 50,000

SIMPLE INTEREST

49. What sum of money must be given at simple interest at 4% per annum in order to earn Rs.150 interest?
a) Rs.5000   b) Rs.7500
c) Rs.3750   d) Rs.15000

50. The simple interest on Rs.7300 from 11 May,1987 to 10 September,1987 (both days included) at 5% per annum is
a) 123   b) 103
c) 200   d) 223

51. Nitin borrowed some money at the rate of 6% p.a. for the first three years, 9% p.a. for the next 5 years and 13% p.a. for the period beyond 8 years. If the total interest paid by him at the end of eleven years is Rs.8160, the money borrowed by him was
a) Rs.12000   b) Rs.6000
c) Rs.8000   d) Rs.10000

52. In how many years will a sum of Rs.3000 yield a simple interest of Rs.1080 at 12% per annum?
a) 3   b) $2\frac{1}{2}$
c) 2   d) $3\frac{1}{2}$

53. A man took a loan from a bank at the rate of 12% per annum at simple interest. After 3 years he had to pay Rs.5400 as interest only for the period. The principle amount borrowed by him was:
a) 2000   b) 10000
c) 20000   d) 15000

54. The sum of money, that will give Rs.1 as interest per day at the rate of 5% per annum simple interest is
a) 3650   b) 36500
c) 730   d) 7300

55. The simple interest on Rs.4000 in 3 years at the rate of x% per annum equals the simple interest on Rs.5000 at the rate of 12% per annum in 2 years. The value of x is
a) 10%   b) 6%
c) 8%   d) 9%

56. In a certain time, the ratio of a certain principle and the simple interest obtained from it are in the ratio 10:3 at 10% per annum. The number of years the money was invested is
a) 1   b) 3
c) 5   d) 7

57. The ratio of the principle and the amount after one year is 10:12. Then the rate of interest per annum is:
a) 12%   b) 16%
c) 18%   d) 20%

58. With a given rate of simple interest, the ratio of principle and amount for a certain period of time is 4:5. After 3 years, with the same rate of interest, the ratio of principle and amount becomes 5:7. The rate of interest is
a) 4%   b) 6%
c) 5%   d) 7%

59. Two equal sums were lent out at 7% and 5% S.I. respectively. The interest earned on the two loans adds up to Rs.960 for 4 years. The total sum lent out is
a) 3500   b) 2500
c) 2000   d) 4000

60. A sum of Rs.1600 gives a simple interest of Rs.252 in 2 years and 3 months. The rate of interest per annum is:
a) $5\frac{1}{2}$%   b) 8%
c) 7%   d) 6%

61. A lends Rs.2500 to B and a certain sum to C at the same time at 7% annual simple interest. If after 4 years, A altogether receives Rs.1120 as interest from B and C, the sum lent to C is
a) 700   b) 6500
c) 4000   d) 1500

62. A lent Rs.5000 to B for 2 years and Rs.3000 to C for 4 years on simple interest at the same rate of interest and received Rs.2200 in all from both as interest. The rate of interest per annum is
a) 7%   b) 5%
c) $7\frac{1}{8}$%   d) 10%

63. Rs.500 was invested at 12% per annum simple interest and a certain sum of money invested at 10% per annum simple interest. If the sum of interest on both the sums after 4 years is Rs.480, the latter sum of money is:
a) 450   b) 750
c) 600   d) 550

64. In certain years a sum of money has doubled itself at $6\frac{1}{4}$% simple interest per annum, then the required time will be
a) 16 years   b) $10\frac{2}{3}$ years
c) $12\frac{1}{2}$ years d) 8 years

65. At what rate of simple interest per annum, the interest on a certain sum of money for 10 years will be $\frac{2}{5}$ part of the amount, then the rate of simple interest is:
a) 5%   b) $6\frac{2}{3}$%

66. Simple interest on a certain sum for 6 years is $\frac{9}{25}$ of the sum. The rate of interest is
a) 6%   b) $6\frac{1}{2}$%
c) 8%   d) $8\frac{1}{2}$%

67. A sum of money becomes $\frac{41}{40}$ of itself in $\frac{1}{4}$ of a year at a certain rate of simple interest. The rate of interest per annum is
a) 10%   b) 1%
c) 2.5%   d) 5%

68. The simple interest on a sum of money is $\frac{1}{16}$ of the sum. If the number of years is numerically equal to the rate percent per annum, then the rate per cent per annum is
a) $3\frac{1}{3}$ b) $6\frac{2}{3}$
c) $2\frac{1}{2}$ d) $7\frac{1}{2}$

69. The simple interest on a sum of money is $\frac{1}{9}$ of the principal and the number of years is equal to rate per cent per annum. The per annum is
a) 3%   b) $\frac{1}{3}$%
c) $3\frac{1}{3}$%   d) $\frac{3}{10}$%

70. In how many years will a sum of money double itself at 12% per annum?
a) 8 years 6 months
b) 6 years 9 months
c) 8 years 4 months
d) 7 years 6 months

71. At what rate of simple interest per annum a will a sum become $\frac{7}{4}$ of itself in 4 years?
a) 18%   b) $18\frac{1}{4}$%
c) $18\frac{3}{4}$%   d) $18\frac{1}{2}$%

72. At a certain rate of simple interest, a certain sum of money becomes double of itself in 10 years. It will become treble of itself in
a) 15 years   b) 18 years
c) 20 years   d) 30 years

73. A sum of money, at simple interest, trebles of itself in 15 years. It will 5 times of itself in
a) 40 years   b) 36 years
c) 30 years   d) 25 years

74. A certain scheme of investment in simple interest declares that it trebles the investment in 8 years. If you want to quadruple your money through that scheme, you have to invest it for
a) 11 years 6 months
b) 10 years 8 months
c) 10 years
d) 12 year

75. A person borrows Rs.5000 for 2 years at 4% per annum simple interest. He immediately

lends it to another person at $6\frac{1}{4}\%$ per annum simple interest for 2 years. His gain in the transaction is
a) Rs.112.50   b) Rs.450
c) Rs.225   d) Rs.150

76. A moneylender finds that due to a fall in the annual rate of interest from 8% to $7\frac{3}{4}\%$, his yearly income diminishes by Rs.61.50. His capital is
a) 22400   b) 23800
c) 24600   d) 26000

77. A sum was lent at simple interest at a certain rate for 2 years. Had it been lent at 3% higher rate, it would have fetched Rs.300 more. The original sum of money was
a) 5000   b) 6000
c) 7000   d) 4000

78. A sum of Rs.400 amounts to Rs.480 in 4 years. What will it amount to if the rate of interest is increased by 2%?
a) Rs.484   b) Rs.560
c) Rs.512   d) None of these

79. Rs.800 becomes Rs.956 in 3 years at a certain rate of simple interest. If the rate of interest is increased by 4%, what amount will Rs.800 become in 3 years?
a) 1020.80   b) 1025
c) 1052   d) 1050

80. If the simple interest on a certain sum of money for 15 months at $7\frac{1}{2}\%$ per annum exceeds the simple interest on the same sum for 8 months at $12\frac{1}{2}\%$ per annum by Rs.32.50, then the sum of money is
a) 312   b) 312.50
c) 3120   d) 3120.50

81. What sum of money will amount to Rs.520 in 5 years and to Rs.568 in 7 years at simple interest?
a) Rs.400   b) Rs.120
c) Rs.510   d) Rs.220

82. A sum of money lent out at simple interest amounts to Rs.720 after 2 years and Rs.1020 after a further period of 5 years. Find the principle.
a) 1740   b) 120
c) 6000   d) 600

83. A sum of money at simple interest amounts to Rs.1012 in $2\frac{1}{2}$ years and to Rs.1067.20 in 4 years. The rate of interest per annum is:
a) 2.5%   b) 3%
c) 4%   d) 5%

84. Rs.1000 is invested at 5% per annum simple interest. If the interest is added to the principle after every 10 years, the amount will become Rs.2000 after

a) 15 years   b) 18 years
c) 20 years   d) $16\frac{2}{3}$ years

85. Rs.6000 becomes Rs.7200 in 4 years at a certain rate of simple interest. If the rate becomes 1.5 times of itself, the amount of the same principle in 5 years be
a) 8000   b) 8250
c) 9250   d) 9000

86. A person invests money in three different schemes for 6 years, 10 years and 12 years at 10%, 12% and 15% simple interest respectively. At the completion of each scheme, he gets the same interest. The ratio of investments is
a) 6:3:2   b) 2:3:4
c) 3:4:6   d) 3:4:2

87. If Rs.12000 is divided into two parts such that the simple interest on the first part for 3 years at 12% per annum is equal to the simple interest on the second part for $4\frac{1}{2}$ years at 16% per annum, the greater part is
a) Rs.8000   b) Rs.6000
c) Rs.7000   d) Rs.7500

88. If Rs.7700 are divided among three brothers Anuj, Vijay and Dhiraj in such a way that simple interest on each part at 5% per annum after 1, 2 and 3 years, respectively remains equal. The share of Anuj is more than that of Dhiraj by:-
a) Rs.1800   b) Rs.2500
c) Rs.3000   d) Rs.2800

89. A sum of Rs.1750 is divided into two parts such that the interest on the first part at 8% simple interest per annum and that on other part at 6% simple interest per annum are equal. The interest on each part is
a) 60   b) 65
c) 70   d) 40

90. If x, y, z are three sums of money such that y is the simple interest on x and z is the simple interest on y for the same time and same rate of interest, then we have
a) $z^2 = xy$ b) $xyz = 1$
c) $x^2 = yz$ d) $y^2 = zx$

91. Arman gave Rs.2300 to one of his neighbour, and told him to pay back in four equal annual installments at 10% per annum simple interest. What will be the annual installment?
a) 700   b) 750
c) 800   d) none

92. What annual installment will discharge a debt of Rs.6450 due in 4 years at 5% per annum simple interest?
a) 1500   b) 1835
c) 1935   d) 1950

93. What equal installment of equal payment will discharge a debt which is due as Rs.848 at the end of 4 years at 4% per annum simple interest?
a) 212   b) 200
c) 250   d) 225

COMPOUND INTEREST

94. The compound interest on Rs.8000 at 15% per annum for 2 years 4 months, compounded annually is:
a) Rs.2980   b) Rs.3091
c) Rs.3109   d) Rs.3100

95. A person deposited a sum of Rs.6000 in a bank at 5% per annum simple interest. Another person deposited Rs.5000 at 8% per annum compound interest. After two years, the difference of their interests will be
a) 230   b) 232
c) 832   d) 600

96. If the rate of interest be 4% per annum for first year, 5% per annum for second year and 6% per annum for third year, then the compound interest of Rs.10000 for 3 years will be
a) Rs.1600   b) Rs.1625.80
c) Rs.1575.20 d) Rs.2000

97. There is a 100% increase to an amount in 8 years, at simple interest. Find the compound interest of Rs.8000 after 2 years at the same rate of interest.
a) 2500   b) 2000
c) 2250   d) 2125

98. The compound interest on Rs.10000 in 2 years at 4% per annum the interest being compounded half-yearly, is:
a) Rs.636.80   b) Rs.824.32
c) Rs.912.86   d) Rs.828.82

99. Sita deposited Rs.5000 at 10% simple interest for 2 years. How much more money will Sita have in her account at the end of two years, if it is compounded semi-annually.
a) 50   b) 40
c) 77.50   d) 85.50

100. A money lender borrows money at 4% per annum and pays the interest at the end of the year. He lends it at 6% per annum compound interest compounded half yearly and receives the interest at the end of the year. In this way, he gains Rs.104.50 a year. The amount of money he borrows, is
a) 6000   b) 5500
c) 5000   d) 4500

101. The compound interest on Rs.16000 for 9 months at 20% per annum, interest being compounded quarterly, is
a) Rs.2520   b) Rs.2524
c) Rs.2522   d) Rs.2518

102. What sum of money will become Rs.1352 in 2 years at 4 per cent per annum compound interest?
a) 1200   b) 1225
c) 1250   d) 1300

103. At what per cent per annum will Rs.3000 amounts to Rs.3993 in 3 years if the interest is compounded annually?
a) 9%   b) 10%
c) 11%   d) 13%

104. At what rate per annum will Rs.32000 yield a compound interest of Rs.5044 in 9 months interest being compounded quarterly?
a) 20%   b) 32%
c) 50%   d) 80%

105. The compound interest on Rs.30000 at 7% per annum for a certain time is Rs.4347. The time is
a) 3 years   b) 4 years
c) 2 years   d) 2.5 years

106. The time in which Rs.80000 amounts to Rs.92610 at 10% p.a. at compound interest, interest being compounded semi-annually is:
a) $1\frac{1}{2}$ years   b) 2 years
c) $2\frac{1}{2}$ years   d) 3 years

107. In how many years will a sum of Rs.800 at 10% per annum compound interest, compounded semi-annually becomes Rs.926.10?
a) $1\frac{1}{2}$ b) $1\frac{2}{3}$
c) $2\frac{1}{3}$ d) $2\frac{1}{2}$

108. Compound interest (compounded annually) on a certain sum of money for 2 years at 4% per annum is Rs.102. The simple interest on the same sum for the same rate and for the same period will be:
a) Rs.99   b) Rs.101
c) Rs.100   d) Rs.98

109. The compound interest on a certain sum for 2 years at 3% per annum is Rs.101.50, then the simple interest on the same sum at the same rate and for the same time will be?
a) 90   b) 95.50
c) 100   d) 98.25

110. A sum of money doubles itself in 4 years at compound interest. It will amount to 8 times itself at the same rate of interest in:
a) 18 years   b) 12 years
c) 16 years   d) 24 years

111. A sum of money placed at compound interest doubles itself in 4 years. In how many years will it amount to four times itself?
a) 12 years   b) 13 years
c) 8 years   d) 16 years

112. A sum of money becomes 8 times in 3 years, if the rate is compounded annually. In how much time will the same amount at the same compound rate becomes 16 times?
a) 6 years
b) 4 years
c) 8 years
d) 5 years

113. If the amount is 2.25 times of the sum after 2 years at compound interest (compounded annually), the rate of interest per annum is:
a) 25%
b) 30%
c) 45%
d) 50%

114. A sum of money compounded annually becomes 1.44 times of itself in 2 years, then the rate of interest per annum is
a) 25%
b) 22%
c) 21%
d) 20%

115. If the amount is $3\frac{3}{8}$ times the sum after 3 years at compound interest compounded annually, then the rate of interest per annum is
a) 25%
b) 50%
c) $16\frac{2}{3}$%
d) $33\frac{1}{3}$%

116. A sum of Rs.12000, deposited at compound interest becomes double after 5 years. How much will it be after 20 years?
a) Rs.144000
b) Rs.120000
c) Rs.150000
d) Rs.192000

117. An amount of money appreciates to Rs.7000 after 4 years and to Rs.10000 after 8 years at a certain compound interest compounded annually. The initial amount of money was
a) 4700
b) 4900
c) 4100
d) 4300

118. A sum becomes Rs.4500 after two years and Rs.6750 after four years at compound interest. The sum is
a) 4000
b) 2500
c) 3000
d) 3050

119. A sum of money invested at compound interest amounts in 3 years to Rs.2400 and in 4 years to Rs.2520. The interest rate per annum is:
a) 5%
b) 6%
c) 10%
d) 12%

120. The compound interest on a certain sum for two successive years are Rs.225 and Rs.238.50. The rate of interest per annum is:
a) $7\frac{1}{2}$
b) 5
c) 10
d) 6

121. At what rate per cent per annum compound interest, will Rs.2304 amounts to Rs.2500 in 2 years?
a) $5\frac{1}{2}$%
b) 5%
c) $4\frac{1}{2}$%
d) $4\frac{1}{6}$%

122. The difference between simple and compound interest compounded annually, on a certain sum of money for 2 years at 4% per annum is Re 1. The sum is:
a) 650
b) 630
c) 625
d) 640

123. The difference between the simple and compound interest on a certain sum of money at 5% rate of interest per annum for 2 years is Rs.15. Then the sum is:
a) 6500
b) 5500
c) 6000
d) 7000

124. The difference between the compound interest (compounded annually) and the simple interest on a sum of Rs.1000 at a certain rate of interest for 2 years is Rs.10. The rate of interest per annum is:
a) 5%
b) 6%
c) 10%
d) 12%

125. On a certain sum of money the compound interest for 2 years is Rs.282.15 and the simple interest for the same period of time is Rs.270. The rate of interest per annum is
a) 6.07%
b) 10%
c) 9%
d) 12.15%

126. The compound interest on a certain sum of money at a certain rate for 2 years is Rs.40.80 and the simple interest on the same sum is Rs.40 at the same rate and for the same time. The rate of interest is
a) 2%
b) 3%
c) 4%
d) 5%

127. At a certain rate per annum, the simple interest on a sum of money for one year is Rs.260 and the compound interest on the same sum for two years is Rs.540.80. The rate of interest per annum is
a) 4%
b) 6%
c) 8%
d) 10%

128. If the difference between the compound interest, compounded every six months, and the simple interest on a certain sum of money at the rate of 12% per annum for one year is Rs.36, the sum is:
a) Rs.10000
b) Rs.12000
c) Rs.15000
d) Rs.9000

129. On a certain sum of money lent out at 16% p.a. the difference between the compound interest for 1 year, payable half yearly, and the simple interest for 1 year is Rs.56. The sum is
a) 1080
b) 7805
c) 8750
c) 5780

130. What sum will give Rs.244 as the difference between simple interest and compound

interest at 10% in $1\frac{1}{2}$ years compounded half yearly?
a) 40,000   b) 36,000
c) 32,000   d) 28,000

131. The difference between the compound and the simple interest on a sum for 2 years at 10% per annum, when the interest is compounded annually, is Rs.28. If the interest were compounded half-yearly, the difference in the two interest will be
a) Rs.44   b) Rs.28.35
c) Rs.43.41   c) Rs.43.29

132. If the difference between simple and compound interest on a sum at 5% rate of interest per annum for three years is Rs.36.60, then the sum is
a) 8000   b) 8400
c) 4400   d) 4800

133. If the difference between compound interest and simple interest on a sum of money for 3 years at 5% per annum is Rs.15.25, then the sum is
a) 2000   b) 1000
c) 1500   d) 2500

134. A certain amount of money earns Rs.540 as simple interest in 3 years. If it earns a compound interest of Rs.376.20 at the same rate of interest in 2 years, find the amount (in rupees).
a) 2000   b) 1600
c) 2100   d) 1800

135. The principle that yields a compound interest of Rs.420 during the second year at 5% per annum is
a) 7000   b) 5000
c) 8000   d) 6000

136. If the compound interest on a sum for 2 years at $12\frac{1}{2}$% per annum is Rs.510, the simple interest on the same sum at the same rate for the same period of time is:
a) 400   b) 480
c) 450   d) 460

137. A man borrows Rs.21000 at 10% compound interest. How much he has to pay equally at the end of each year, to settle his loan in two years?
a) Rs.12000   b) Rs.12100
c) Rs.12200   d) Rs.12300

138. A loan of Rs.12300 at 5% per annum compound interest, is to be repaid in two equal annual installments at the end of every year. Find the amount of each installment.
a) 6,651   b) 6,615
c) 6,516   d) 6,156

139. A sum of Rs.13,360 was borrowed at $8\frac{3}{4}$% per annum compound interest and paid back in two years in two equal installments. What was the amount of each installment?
a) 5,769   b) 7,569
c) 7,009   d) 7,500

140. A man took some loan from a bank at the rate of 8% compound interest per annum and he repaid the whole amount of the loan by paying Rs.50,000 and Rs.62,640 at the end of first year and second year, respectively. The sum of the loan (in Rs.) was
a) 1,00,000   b) 1,12,640
c) 1,50,000   d) 50,000

Answer key:

1.a.200	b.480	c.510	d.720	e.735
2.a.2310	b.6136	c.11895	d.4575	e.2400
3.c	4.a	5.d	6.a	7.c
8.a	9.b	10.c	11.c	12.b
13.a	14.b	15.d	16.c	17.c
18.b	19.a	20.d	21.d	22.a
23.c	24.a.1728	b.2160	c.12500	d.2058
e.5202	25.a.109.62	b.3380	c.1360	d.2210
e.2990	26.b	27.a	28.b	29.c
30.c	31.a	32.b	33.b	34.d
35.d	36.b	37.a	38.b	39.a
40.b	41.a	42.b	43.c	44.c
45.a	46.d	47.b	48.c	49.c
50.a	51.c	52.a	53.d	54.d
55.a	56.b	57.d	58.c	59.d
60.c	61.d	62.d	63.c	64.a
65.b	66.a	67.a	68.c	69.c
70.c	71.c	72.c	73.c	74.d
75.c	76.c	77.a	78.c	79.c
80.c	81.a	82.d	83.c	84.d
85.b	86.a	87.a	88.d	89.a
90.d	91.a	92.a	93.b	94.c
95.b	96.c	97.d	98.b	99.c
100.c	101.c	102.c	103.b
104.a	105.c	106.a	107.a
108.c	109.c	110.b	111.c
112.b	113.d	114.d	115.b
116.d	117.b	118.c	119.a
120.d	121.d	122.c	123.c
124.c	125.c	126.c	127.c
128.a	129.c	130.c	131.b
132.d	133.d	134.a	135.c
136.b	137.b	138.b	139.b
140.a			

3. PROFIT AND LOSS

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CLASS ASSIGNMENT

1. Corresponding to the values given below find the gain or loss percentage:
   a) C.P=Rs200   S.P=Rs240
   b) C.P=Rs360   S.P=Rs300
   c) C.P=Rs270   S.P=Rs180
   d) C.P=Rs490   S.P=Rs560

2. For the values given in the table, find the missing value

C.P	S.P	P%	L%
350	?	30	
240	?	-	20
640	?	25	-
?	550	10	-
?	360	-	25
?	3430	-	30

3. By selling a chair for Rs.572, a man gains 30%. Find the cost price of the chair?
   a) Rs.340   b) Rs.400
   c) Rs.440   d) None of these

4. Amit sold an umbrella for Rs.680, losing 15%. The cost price of the umbrella is:
   a) Rs.782   b) Rs.800
   c) Rs.578   d) None of these

5. A man sells his typewriter at 5% loss. If he sells it for Rs.80 more, he gains 5%. The cost price of the typewriter is:
   a) Rs.1600   b) Rs.1200
   c) Rs.1000   d) Rs.800

6. A man sold an article at a loss of 20%. If he sells the article for Rs.12 more, he would have gained 10%. The cost price of the article is:
   a) Rs.60   b) Rs.40
   c) Rs.30   d) Rs.22

7. If a man were to sell his chair for Rs.720, he would lose 25%. To gain 25% he should sell it for:
   a) Rs.1200   b) Rs.1000
   c) Rs.960   d) Rs.900

8. On selling an article for Rs.48, one loses 20%. In order to gain 20%, what would be the selling price?
   a) Rs.52   b) Rs.56
   c) Rs.68   d) Rs.72

9. A radio is sold for Rs.990 at a profit of 10%. What would have been the gain or loss %, had it been sold for Rs.890?
   a) Loss, 10%   b) Gain, $1\frac{1}{9}$%
   c) Loss, $1\frac{1}{9}$%   d) Loss, 1%

10. A man bought a cow and a horse for Rs.12,000 each, he sold both of them at profits of 10% and 15%. Find his profit % in whole transaction.
a) 25% b) 5%
c) 12.5% d) none

11. A man sold one Activa and one Bullet at same price. On one he lost 30 % and on other he gained 30 %. Find his overall profit or loss %.
a) 0% b) 9% gain
c) 9%loss d) 15% loss

12. A man sold two pipes at Rs.12 each. On one he gained 20% and on the other lost 20%. On the whole he:
a) No gain no loss b) Gained Re. 1
c) Lost Re. 1 d) Gained Re. 2

13. A person sold 2 articles for Rs.7000. On 1st he gained 20 % and on 2nd he lost 15 %. Find the cost price of 1st article, if on whole there was no profit and no loss.
a) Rs.3000 b) Rs.4000
c) Rs.3500 d) None

14. A man sold one shirt and one t-shirt for Rs.2940 on shirt he gained 20 % and he lost 15 % on t-shirt. If overall profit is 5%, then cost price of shirt is:
a) Rs.1200 b) Rs.1600
c) Rs.1000 d) None

15. The ratio of S.P to C.P is given below. Find the gain or loss %:
$\frac{5}{3}, \frac{9}{7}, \frac{6}{7}, \frac{3}{4}, \frac{16}{8}, \frac{3}{8}, \frac{11}{5}, \frac{4}{9}, \frac{8}{5}$

16. If the S.P of 5 oranges is equal to the C.P of 3 oranges, then the gain or loss % is
a) 33.33%gain b) 40%loss
c) 33.33%loss d) 40%gain

17. If S.P of 9 m cloth is equal to C.P of 12 m cloth. What is the gain or loss %?
a) 25% loss b) 25%gain
c) 33.33%gain d) 33.33%loss

18. Ravi buys some toffees at 4 for Rs.3 and sells them at 5 for Rs.2. His loss % is:
a) 46.66% b) 53.33%
c) 30% d) 60%

19. A fruit seller buys lemons at 2 for a rupee and sells them at 5 for 3 rupees. His gain % is:
a) 10%　　　　　b) 15%
c) 20%　　　　　d) None

20. By selling 33m of cloth Ramesh gained the cost price of 11m. The gain % is:
a) 10%　　　b) 33.33%
c) 25%　　　d) 50%

21. By selling 100 pencils a shopkeeper gains the selling price of 20 pencils. His gain % is:
a) 25%　　　　　b) 20%
c) 15%　　　　　d) 12%

22. By selling 36 oranges a vendor loses the selling price of 4 oranges. His loss % is:
a) $12\frac{1}{2}$%　　　　　b) $11\frac{1}{9}$%
c) 10%　　　　　d) None

23. A dealer professing to sell his goods at cost price uses 900gm weight for 1kg. His gain percentage is:
a) 9%　　　　　b) 10%
c) 11%　　　　　d) $11\frac{1}{9}$%

24. A dishonest shopkeeper pretends to sell his goods at cost price but uses false weight and gains 25%. For a weight of 1kg he uses:
a) 750gm　　　　　b) 800gm
c) 950gm　　　　　d) None of these

25. The profit earned after selling an article for Rs.625 is the same as loss incurred after selling the article for Rs.435. The cost price of the article is:
a) Rs.520　　　　　b) Rs.530
c) Rs.540　　　　　d) Rs.550

26. On selling an article at Rs.1060, the gain is 20% more than the loss incurred on selling it at Rs.950. In order to gain 20%, the selling price will be:
a) Rs.980　　　　　b) Rs.1080
c) Rs.1200　　　　　d) None of these

27. A man sells tea at 10% profit and uses a weight which is 20% less than the actual measure. His gain percentage is:
a) 30%　　　　　b) 35%
c) 37.5%　　　　　d) None

28. A bookseller sells a book at a gain of 10%. If he had bought it at 4% less and sold it at Rs.6 more, he would have gained $18\frac{3}{4}$%. The cost price of the book is:
a) Rs.130　　　　　b) Rs.140
c) Rs.150　　　　　d) Rs.160

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29. A shopkeeper sells a pair of sunglasses at a profit of 25%. If he had bought it at 25% less and sold it for Rs.10 less then he would have gained 40%. The cost price of the pair of sunglasses is:
a) Rs.25   b) Rs.50
c) Rs.60   d) Rs.75

30. In the table given below certain values are given. Find gain or loss %, discount% and mark up%.

C.P	S.P	M.P
500	550	600
240	320	400
480	400	500
350	385	700

31. Find the missing value:

S.P	M.P	DISCOUNT
200	300	?
420	?	25%
?	240	20%
360	?	16.66%

32. A trader lists his articles 20% above cost price and allows a discount of 10% on cash payment. His gain % is:
a) 10%   b) 8%
c) 6%   d) 5%

33. The marked price of an article is 10% more than the cost price and a discount of 10% is given on the market price. In this kind of sale the seller:
a) No loss & no gain b) Gains 1%
c) Loses 1%   d) None of these

34. The cost price of an article is 64% of the marked price. What is the gain % if a discount of 12% is allowed?
a) 37.5%   b) 48%
c) 50.5%   d) 52%

35. On allowing a discount of 10% on an article, the shopkeeper gains 20%. If a discount of 20% is allowed on it. What will be the gain %?
a) $6\frac{2}{3}$%   b) $7\frac{1}{4}$%
c) $12\frac{1}{2}$%   d) $13\frac{1}{3}$%

36. A trader wishes to gain 20% after allowing 10% discount on the marked price to his customers. At what % higher than the cost price must he mark his goods?
a) 30%   b) $33\frac{1}{3}$%
c) $34\frac{2}{3}$%   d) 35%

30

37. A trader marks his goods 20% above cost price but allows his customers a discount of 10%, the cost price of blackboard, which is sold for Rs.216, is
a) 108   b) 196
c) 200   d) 180

38. A man bought a watch at 25% discount on the original price. He got Rs.40 more than the original price by selling it at 140% of the price at which he bought. The price of buying the watch was?
a) 800   b) 700
c) 900   d) 600

39. Successive discounts of 10% and 20% are equivalent to a single discount of:
a) 15%   b) 28%
c) 30%   d) None

40. A single discount equivalent to successive discounts of 30%, 20% and 10% is:
a) 60%   b) 50.4%
c) 49.4%   d) 49.6%

41. The difference between a discount of 35% and two successive discounts of 20% and 20% on a certain bill was Rs.22. The amount of the bill is:
a) Rs.2000   b) Rs.1100
c) Rs.2200   d) Data inadequate

42. A company offers three types of successive discounts. 1st: 25% and 15% ; 2nd: 30% and 10%; 3rd: 35% and 5%. Which offer is better for a customer?
a) 1st b) 2nd
c) 3rd d) All are equal

43. A sofa set carrying a sale price ticket of Rs.5000 is sold at a discount of 4% thereby gaining 20%. The cost price of the sofa set is:
a) Rs.3600   b) Rs.3800
c) Rs.4000   d) Rs.4200

44. A dealer offers a discount of 10% on the marked price of an article and still makes a profit of 20%. If its Marked price is Rs.800, and then the cost price
a) Rs.600   c) Rs.700
c) Rs.500   d) Rs.620

45. What price should a shopkeeper mark on an article costing him Rs.153 to gain 20%, after allowing a discount of 15%?
a) Rs.162   c) Rs.184
c) Rs.216   d) Rs.224

46. A shopkeeper earns a profit of 15% after selling a book at 20% discount on the printed price. The ratio of the cost price and the printed price of the book is:
a) 16:23   b) 20:23
c) 23:16   d) 23:20

47. Arun purchased a T.V. set at 20% discount. If he gets a discount of 25%, he saves Rs.1800. for how much does he purchase the T.V set?
a) Rs.33000   b) Rs.31200
c) Rs.28800   d) Rs.36000

48. A seller allows a discount of 5% on a watch. If he allows a discount of 7%, he earns Rs.15 less in the profit. What is the marked price?
a) Rs.697.5   b) Rs.712.5
c) Rs.750   d) Rs.817.5

49. A fan is listed at Rs.1500 and a discount of 20% is offered on the lost price. What additional discount must be offered to the customer to bring the net price to Rs.1104?
a) 8%   b) 10%
c) 12%   d) 15%

50. A shopkeeper gives two successive discounts on an article marked Rs.450. The first discount given is 10%. If the customer pays Rs.344.25 for the article, the second discount given is:
a) 10%   b) 12%
c) 14%   d) 15%

51. A pen is listed for Rs.12. A discount of 15% is given on it. A second discount is given brining the price down to Rs.8.16. The rate of second discount is
a) 15%   b) 18%
c) 20%   d) 25%

52. A dealer buys an article marked at Rs.25000 with 20% and 5% off. He spends Rs.1000 on its repairs and sells it for Rs.25000. What is his gain or loss %?
a) Loss of 25%   b) Gain of 25%
c) Gain of 10%   d) Loss of 10%

HOME ASSIGNMENT
53. In terms of percentage profit, which is the best transaction?

S.P.(in Rs.)	C.P.(in Rs.)
I) 36	17
II) 50	24
III) 40	19
IV) 60	29

a) I   b) II
b) III   d) IV

54. A man buys a cycle for Rs.1400 and sells it a loss of 15%. What is the selling price of the cycle?
a) 1202   b) 1190
c) 1160   d) 1000

55. A man bought and old typewriter for Rs.1200 and spend Rs.200 on its repair. He sold it for Rs.1680. His profit per cent is
a) 20%   b) 10%
c) 8%   d) 16%

56. A dealer buys a wrist watch for Rs.225 and spends Rs.15 on its repairs. If he sells the same for Rs.300, his profit per cent is
a) 15%   b) 20%
c) 25%   d) 30%

57. On selling an article for Rs.651 there is a loss of 7%. The cost price of the article is

a) 744   b) 751
c) 793   d) 700

58. The cost price of a radio is Rs.600. The 5% of cost price is charged towards transportation. After adding that, if the net profit to be made is 15%, then the selling price of radio must be
a) Rs.704.50   b) Rs.724.50
c) Rs.664.50   d) Rs.684.50

59. The cost price of two dozen bananas is Rs.32. After selling 18 bananas at the rate of Rs.12 per dozen, the shopkeeper reduced the rate as Rs.4 per dozen. The per cent loss is
a) 25.2%   b) 32.4%
c) 36.5%   d) 37.5%

60. An item costing Rs.840 was sold by a shopkeeper at a gain of 10% and it was again sold by the new buyer at a loss of 5%. Final selling price of the item is:
a) Rs.877.80   b) Rs.798
c) Rs.924   d) Rs.37.80

61. A clock was sold for Rs.144. If the percentage of profit was numerically equal to the cost price, the cost of the clock was
a) Rs.72   b) Rs.80
c) Rs.90   d) Rs.100

62. A merchant sold an article for Rs.75 at a profit per cent equal to his cost price. The cost price of the article is
a) 45   b) 50
c) 54   d) 60

63. Ramesh bought 10 cycles for Rs.500 each. He spent Rs.2000 on the repair of all the cycles. He sold five of them for Rs.750 each and the remaining for Rs.550 each. Then the total gain or loss% is
a) Gain of $8\frac{1}{3}$%
b) Loss of $8\frac{1}{3}$%
c) Gain of $7\frac{2}{3}$%
d) Loss of $7\frac{1}{7}$%

64. Krishna bought a camera and paid 20% less than its original price. He sold it at 40% profit in the price he had paid. The percentage of profit earned by Krishna on the original price was
a) 22   b) 32
c) 12   d) 15

65. By selling an article for Rs.700 a man lost 30%. At what price should he have to sold it go gain 30%
a) 910   b) 1200
c) 1232   d) 1300

66. By selling a basket for Rs.19.50 a shopkeeper gains 30%. For how much should he sell it to gain 40%?
a) 21   b) 21.50

c) 16.66   d) 33.33

67. By selling an article for Rs.665 there is a loss of 5%. In order to make a profit of 12% the selling price of the article may be
a) 812   b) 800
c) 790   d) 784

68. If there is a profit of 20% on the cost price of an article, the percentage of profit calculated on its selling price will be?
a) 24   b) 16.66
c) 8.33   d) 20

69. If the cost price of an article is 80% of its selling price, the profit % is:
a) 20%   b) $22\frac{1}{2}$%
c) 24%   c) 25%

70. Mahesh purchased a radio at $\frac{9}{10}$ of its selling price and sold it at 8% more than its original selling price. His gain per cent is:
a) 20%   b) 18%
c) 10%   d) 8%

71. A man purchased a bedsheet for Rs.450 and sold it at a gain of 10% calculated on the selling price. The selling price of the bedsheet is
a) 460   b) 475
c) 480   d) 500

72. If an article is sold at 5% gain instead of 5% loss, the man gains Rs.5 more. Find the cost price of that article
a) 100   b) 105
c) 50   d) 110

73. The reduction of Rs.12 in the selling price of an article will change 5% gain into $2\frac{1}{2}$% loss. The cost price of the article is
a) Rs.140   b) Rs.160
c) Rs.80   d) Rs.100

74. A radio dealer sold a radio at a loss of 2.5%. Had he sold it for Rs.100 more, he would have gained 7.5%. In order to gain 12.5%, he should sell it for
a) Rs.1080   b) Rs.1125
c) Rs.850   d) Rs.925

75. By selling a tape recorder for Rs.950, I lose 5% what per cent shall I gain in selling it for Rs.1040?
a) 5   b) 4
c) 4.5   d) 9

76. If a shopkeeper purchases cashewnuts at Rs.250 per kg and sells it at Rs.10 per 50 grams, then he will have
a) 25% loss   b) 25% profit
c) 20% loss   d) 20% profit

77. A merchant bought 200 eggs, out of which 38 are broken. He sold the remaining eggs at the

rate of Rs.4.80 per dozen and thus gained 8%. The total investment is
a) Rs.80   b) Rs.60
c) Rs.45   d) Rs.120

78. A man sells two chairs at Rs.120 each and by doing so gains 25% on one chair and loses 25% on the other. His loss in the whole transaction in Rs. is
a) 20   b) 16
c) 25   d) 30

79. A person sells two machines at Rs.396 each. On one he gains 10% and on the other he loses 10%. His profit and loss in the whole transaction is:
a) no gain no loss   b) 1% loss
c) 1% profit   d) 8% profit

80. A dealer sold two types of goods foe Rs.10000 each. On one of them, he lost 20% and on the other he gained 20%. His gain or loss per cent in the entire transaction was
a) 2% loss   b) 2% gain
c) 4% gain   d) 4% loss

81. A man sold two pipes at Rs.12 each. On one he gained 20% and on the other lost 20%. On the whole he:
a) No gain no loss   b) Gained Re. 1
c) Lost Re. 1   d) Gained Re. 2

82. A person sold 2 articles for Rs.1400. On 1st he gained 20 % and on 2nd he lost 15 %. Find the cost price of 1st article, if on whole there was no profit and no loss.
a) Rs.400   b) Rs.600
c) Rs.500   d) None

83. A man sold one shirt and one t-shirt for Rs.2940 on shirt he gained 20 % and he lost 15 % on t-shirt. If overall profit is 5%, then cost price of shirt is:
a) Rs.1200   b) Rs.1600
c) Rs.1000   d) None

84. The ratio of S.P to C.P is given below. Find the gain or loss %:
$\frac{4}{3}, \frac{11}{7}, \frac{6}{12}, \frac{7}{4}, \frac{16}{12}, \frac{17}{8}, \frac{11}{14}, \frac{10}{12}, \frac{7}{5}$

85. The ratio of cost price and selling price is 5:4, the loss per cent is:
a) 20%   b) 25%
c) 40%   d) 50%

86. 100 oranges are bought for Rs.350 and sold at the rate of Rs.48 per dozen. The percentage of profit and loss is:
a) 15% loss   b) 15% gain
c) $14\frac{2}{7}$% loss   d) $14\frac{2}{7}$% gain

87. The cost price of 36 books is equal to the selling price of 30 books. The gain per cent is:
a) 20%   b) $16\frac{4}{6}$%

c) 18%   d) $82\frac{2}{6}$%

88. The cost price of 15 articles is same as the selling price of 10 articles. The profit per cent is:
a) 30%   b) 40%
c) 50%   d) 45%

89. The selling price of 5 tables is the same as cost price of 3 tables. The gain or loss is:
a) 20% gain   b) 25% gain
c) 33.33% loss   d) 40% loss

90. If I would have purchased 11 articles for Rs.10 and sold all the articles at the rate of 10 for Rs.11, the profit % would have been:
a) 10%   b) 11%
c) 21%   d) 100%

91. A fruit seller buys lemons at 2 for a rupee and sells them at 5 for 3 rupees. His gain % is:
a) 10%   b) 15%
c) 20%   d) None

92. Some toffees were bought at the rate of 11 for Rs.10 and the same number at the rate of 9 for Rs.10. If the whole lot was sold at one rupee per toffee, then the gain or loss in the whole transaction was
a) loss of 1%
b) gain of 1%
c) neither gain nor loss
d) gain of 1.5%

93. A man buys a certain number of oranges at 20 for Rs.60 and an equal number at 30 for Rs.60. He mixes them and sells them at 25 for Rs.60. What is the gain or loss per cent?
a) Gain of 4%
b) Loss of 4%
c) Neither gain nor loss
d) Loss of 5%

94. A milkman bought 70 litres of milk for Rs.630 and added 5 litres of water. If he sells it at Rs.9.00 per litre, his profit per cent is
a) $8\frac{1}{5}$%   b) 7%
c) $8\frac{2}{5}$%   d) $7\frac{1}{7}$%

95. Oranges are bought at 7 for Rs.3. At what rate per hundred must they be sold to gain 33%?
a) Rs.56   b) Rs.60
c) Rs.58   d) Rs.57

96. A man sold 20 apples for Rs.100 and gained 20%. How many apples did he buy for Rs.100?
a) 20   b) 22
c) 24   d) 25

97. By selling 12 oranges for Rs.60, a man loses 25%. The number of oranges he has to sell for Rs.100, so as to gain 25% is
a) 10   b) 11
c) 12   d) 15

98. 12 copies of a book were sold for Rs.1800/- thereby gaining cost price of 3 copies. The cost price of a copy is:
a) Rs.120   b) Rs.150
c) Rs.1200   d) Rs.1500

99. On selling 17 balls at Rs.720, there is a loss equal to the cost price of 5 balls. The cost price of a ball is:
a) Rs.45   b) Rs.50
c) Rs.60   d) Rs.55

100. Mohan bought 25 books for Rs.2000 and sold them at a profit equal to the selling price of 5 books. The selling price of one book is
a) Rs.100   b) Rs.120
c) Rs.150   d) Rs.200

101. A dealer professing to sell his goods at cost price uses 900gm weight for 1kg. His gain percentage is:
a) 9%   b) 10%
c) 11%   d) $11\frac{1}{9}$%

102. A dishonest shopkeeper pretends to sell his goods at cost price but uses false weight and gains 25%. For a weight of 1kg he uses:
a) 750gm   b) 800gm
c) 950gm   d) None of these

103. To gain 10% on selling sample milk at the cost price of pure milk, the quantity of water to be mixed with 50 kg. of pure milk is
a) 2.5 kg   b) 5 kg
c) 7.5 kg   d) 10 kg

104. A shopkeeper gains 20% while buying the goods and 30% while selling them. Find his total gain per cent.
a) 50%   b) 36%
c) 56%   d) 40%

105. A man reduces the selling price of a fan from Rs.1250 to Rs.1000, his loss increases by 20%. The cost price of the fan is
a) Rs.2400   b) Rs.2450
c) Rs.2500   c) Rs.2350

106. The profit obtained by selling an article for Rs.625 is the same as loss incurred after selling the article for Rs.545. The price at which it is to be sold to realize a profit of Rs.65 on the cost price is
a) Rs.640   b) Rs.630
c) Rs.650   d) Rs.660

107. On selling an article at Rs.1060, the gain is 20% more than the loss incurred on selling it at Rs.950. In order to gain 20%, the selling price will be:
a) Rs.980   b) Rs.1080
c) Rs.1200   d) None of these

108. A man sells tea at 10% profit and uses a weight which is 20% less than the actual measure. His gain percentage is:
a) 30%   b) 35%

c) 37.5%   d) None

109. A businessman bought an article and sold it at a profit of 5%. If he had bought it for 10% less and sold it for Rs.33 more, he would have had a profit of 30%. The cost price of the article is
a) Rs.235   b) Rs.375
c) Rs.400   d) Rs.275

110. A businessman sells a commodity at 10% profit. If he had bought it at 10% less and sold it for Rs.2 less, then he would have gained $16\frac{2}{3}$%. The cost price of the commodity is
a) 32   b) 36
c) 40   d) 48

111. An article was sold at a profit of 12%. If the cost price would be 10% less and selling price would be Rs.5.75 more, there would be profit of 30%. Then at what price it should be sold to make a profit of 20%?
a) Rs.115   b) Rs.120
c) Rs.138   d) Rs.215

112. I purchased 120 exercise books at the rate of Rs.3 each and sold $\frac{1}{3}$ of them at the rate of Rs.4 each, $\frac{1}{2}$ of them at the rate of Rs.5 each and the rest at the cost price. My profit per cent was
a) 44%   b) $44\frac{4}{9}$%
c) $44\frac{2}{9}$%   d) 45%

113. A man bought oranges at the rate of 8 for Rs.34 and sold them at the rate of 12 for Rs.57. How many oranges should be sold to earn a net profit of Rs.45?
a) 90   b) 100
c) 135   d) 150

114. A person bought some articles at the rate of 4 per rupee. He mixed both the types and sold at the rate of 9 for 2 rupees. In this business he suffered a loss of Rs.3. The total number of articles bought by him was
a) 1090   b) 1080
c) 540   d) 545

115. If the cost of pins reduced by Rs.4 per dozen, 12 more pins can be purchased for Rs.48. The cost of pins per dozen after reduction is:
a) Rs.8   b) Rs.12
c) Rs.16   d) Rs.20

116. Find the selling price of an article if a shopkeeper allows two successive discounts of 5% each on the marked price of Rs.80.
a) Rs.70.20   b) Rs.70.10
c) Rs.72.00   c) Rs.72.20

117. While selling to the retailer, a company allows 30% discount on the marked price of their products. If the retailer sells those

products at the marked price, his profit will be:

a) 30% b) $42\frac{1}{7}\%$

c) 40% d) $42\frac{6}{7}\%$

118. Rita bought a television set with 20% discount on the labelled price. She made a profit of Rs.800 by selling it for Rs.16800. The labelled price of the set was
a) Rs.18000 b) Rs.20000
c) Rs.20800 c) Rs.24000

119. A tradesman marks his goods at 20% above the cost price. He allows his customers a discount of 8% on marked price. Then his profit percentage is
a) 10.4% b) 11%
c) 12.2% d) 9.7%

120. A trader marked the price of a commodity so as to include a profit of 25%, but allowed a discount of 16% on the marked price. His actual profit will be
a) 16% b) 25%
c) 5% d) 9%

121. The cost of manufacture of a tape recorder is Rs.1500. The manufacturer fixes the marked price 20% above the cost of manufacture and allows a discount in such a way as to get a profit of 8%. The rate of discount is
a) 12 b) 8
c) 20 d) 10

122. Arvind purchased a wrist watch with 30% discount on the labelled price. He sold it with 40% profit on the price he bought. What was his per cent loss on the labelled price?
a) 2 b) 6
c) 4 d) 8

123. By selling an article at $\frac{2}{3}$ of the marked price, there is a loss of 10%. The profit per cent, when the article is sold at the marked price is
a) 20% b) 30%
c) 35% d) 40%

124. To gain 8% after allowing a discount of 10%, by what per cent cost price should be hiked in the list price?
a) 9% b) 11%
c) 18% d) 20%

125. A shopkeeper allows 23% commission on his advertised price and still makes a profit of 10%. If he gains Rs.56 on one item, his advertised price of the item, in Rs. is
a) 820 b) 780
c) 790 d) 800

126. A publisher printed 2000 copies of a book at a cost of Rs.70000. He distributes 400 copies free as specimen copies. He gave 30% discount on printed price and the printed price of each book is Rs.75. What is his gain or loss per cent?
a) 20% gain b) 20% loss
c) 10% loss d) 10% gain

127. 10% discount and then 20% discount in succession is equivalent to total discount of
a) 15% b) 28%
c) 30% d) 24%

128. Applied to a bill of Rs.1,00,000 the difference between a discount of 40% and two successive discounts of 36% and 4% is:
a) Nil b) Rs.1440
c) Rs.2500 d) Rs.4000

129. The price of an article is raised by 30% and then two successive discounts of 10% each are allowed. Ultimately the price of the article is
a) increased by 10%
b) increased by 5.3%
c) decreased by 3%
d) decreased by 5.3%

130. Allowing 20% and 15% successive discounts, the selling price of an article becomes Rs.3060 then the marked price will be
a) Rs.4000 b) Rs.5000
c) Rs.4400 d) Rs.4500

131. The cost price of an article is Rs.800. After allowing a discount of 10%, a gain of 12.5% was made. Then the marked price of the article is:
a) Rs.1000 b) Rs.1100
c) Rs.1200 d) Rs.1300

132. A shopkeeper sold sarees at Rs.266 each after giving 5% discount on labelled price. Had he not given the discount, he would have earned a profit of 12% on the cost price. What was the cost price of each saree?
a) Rs.280 c) Rs.260
c) Rs.240 d) Rs.250

133. A dealer purchased a washing machine for Rs.7660. After allowing discount of 12% on its marked price, he still gains 10%. Find the marked price of the washing machine.
a) Rs.9575 c) Rs.8426
c) Rs.8246 d) Rs.9755

134. A trader marks his goods 20% above cost price but allows his customers a discount of 10%, the cost price of blackboard, which is sold for Rs.216, is
a) 108 b) 196
c) 200 d) 180

135. A man bought a watch at 25% discount on the original price. He got Rs.40 more than the original price by selling it at 140% of the price at which he bought. The price of buying the watch was?
a) 800 b) 700

c) 900   d) 600

136. A shopkeeper earns a profit of 12% on selling a book at 10% discount on the printed price. The ratio of the cost price and the printed price of the book is:
 a) 99:125   b) 25:37
 c) 50:61   d) 45:56

137. A got 30% concession on the label price of an article sold for Rs.8750 with 25 % profit on the price he bought. The label price was
 a) 13000   b) 16000
 c) 12000   d) 10000

138. Arun purchased a T.V. set at 20% discount. If he gets a discount of 25%, he saves Rs.1800. for how much does he purchase the T.V set?
 a) Rs.33000   b) Rs.31200
 c) Rs.28800   d) Rs.36000

139. A seller allows a discount of 5% on a watch. If he allows a discount of 7%, he earns Rs.15 less in the profit. What is the marked price?
 a) Rs.697.5   b) Rs.712.5
 c) Rs.750   d) Rs.817.5

140. The marked price of a watch is Rs.1000. A retailer buys it at Rs.810 after getting two successive discounts of 10% and another rate which is illegible. What is the second discount rate?
 a) 15%   b) 10%
 c) 8%   d) 6.5%

141. The marked price of a watch was Rs.720. A man bought the same for Rs.550.80 after getting two successive discounts, the first being 10%. The second discount rate is
 a) 18%   b) 14%
 c) 15%   d) 12%

142. A pen is listed for Rs.12. A discount of 15% is given on it. A second discount is given brining the price down to Rs.8.16. The rate of second discount is
 a) 15%   b) 18%
 c) 20%   d) 25%

143. The marked price of an article is 50% above cost price. When marked price is increased by 20% and selling price is increased by 20%, the profit doubles. If original marked price is Rs.300, then original selling price is
 a) Rs.240   b) Rs.250
 c) Rs.240   d) Rs.275

Answer key:

1.---	2.---	3.c	4.b	5.d
6.b	7.a	8.d	9.c	10.c
11.c	12.c	13.a	14.b	15.---
16.b	17.c	18.a	19.c	20.b
21.a	22.c	23.d	24.b	25.b
26.c	27.c	28.c	29.b	30.---
31.---	32.b	33.c	34.a	35.a
36.b	37.c	38.d	39.b	40.d
41.c	42.c	43.c	44.a	45.c
46.a	47.c	48.c	49.a	50.d
51.c	52.b	53.a	54.b	55.a
56.c	57.d	58.b	59.d	60.a
61.b	62.b	63.d	64.c	65.d
66.a	67.d	68.b	69.c	70.b
71.d	72.c	73.b	74.b	75.b
76.c	77.b	78.b	79.b	80.d
81.c	82.b	83.d	84.---	85.a
86.d	87.a	88.c	89.d	90.c
91.c	92.a	93.b	94.d	95.d
96.c	97.c	98.a	99.c	100.a
101.d	102.b	103.b	104.c	105.c
106.c	107.c	108.c	109.d	110.c
111.c	112.b	113.a	114.	115.b
116.c	117.d	118.b	119.a	120.c
121.d	122.a	123.c	124.d	125.d
126.a	127.b	128.b	129.b	130.d
131.a	132.d	133.a	134.c	135.a
136.d	137.d	138.c	139.c	140.b
141.c	142.c	143.b		

Question 1

a. 20%↑	b. 16.66%↓	c. 33.33%↓	d. 14.28%↑

Question 2

a. 455	b. 192	c. 800
d. 500	e. 480	f. 4900

Question 30

	Gain/Loss	Mark up	Dis
a.	10%↑	20%	8.33%
b.	33.33%↑	66.66%	20%
c.	16.66%↓	4.16%	20%
d.	10%↑	10%	45%

Question 31

a. 33.33%	b. 560	c. 192	d. 432

4. AVERAGE

<u>Space for concepts and important points</u>

CLASS ASSIGNMENT

1. The average of numbers 15,5,0,12,8 is
   a) 8   b) 8.5
   c) 10   d) 7.5

2. The average of 48,59,87,37,78 and 57 is
   a) 60   b) 55
   c) 61   c) 63

3. The average of 1566, 2455, 1231, 2678, 1987, 3342 and 2715 is
   a) 2228   b) 2282
   c) 2187   d) 2182

4. The average of five numbers is 339. The average of 1st and 2nd number is 149.5. the average of the fourth and fifth no is 533. What is the 3rd number?
   a) 330   b) 230
   c) 430   c) 310

5. Out of three numbers the first is twice the second and is half of the third. If the average of three numbers is 56, the difference of first and third numbers is:
   a) 12   b) 20
   c) 24   d) 48

6. Find the average of following:
   a) 2030, 1950, 2040, 2200, 1890
   b) 115, 98, 104, 83, 107, 101
   c) 180, 197, 215, 207, 216, 183

7. The average weight of 19 students is 15kg. By the admission of a new student the average weight is reduced to 14.8kg. The weight of new student is:
   a) 10.6 kg   b) 10.8 kg
   c) 11 kg   d) 14.9kg

8. A batsman makes a score of 98 runs in the 19th inning and thus increases his average by 4. What is his average after 19th inning?
   a) 22   b) 24
   c) 26   d) 28

9. A batsman has a certain average runs for 11 innings. In the 12th inning, he made a score of 90 runs and thereby decreased his average by 5. His average after 12th inning is:
   a) 127   b) 145
   c) 150   d) 217

10. The average age of 40 students of a class is 15 years. When 10 new students are admitted, the average age increased by 0.2 years. The average age of the new students is:
a) 15.2 years   b) 16 years
c) 16.2 years   d) 16.4 years

11. The average score of Dhoni after 48 innings is 48 and in 49th inning he scored 97 runs. In the 50th inning the minimum number of runs required to increase his average by 2 run than it was before 50thinning.
a) 99   b) 150
c) 149   d) 199

12. Average age of 6 sons of a family is 8 years. Average age of the sons together with their parents is 22 years. If the father is older than the mother by 8 years, then the age of the mother is
a) 56 years   b) 52 years
c) 60 years   d) 68 years

13. The average age of 24 boys and their teacher is 15 years. When the teacher's age is excluded the average age decreased by 1 year. The age of the teacher is
a) 38 years   b) 39 years
c) 40 years   d) 41 years

14. The average of 30 numbers is 20. If two numbers, namely 38 and 30 are discarded then the average of the remaining numbers is
a) 20   b) 19
c) 21   d) 22

15. The average weight of 8 men is increased by 1.5 kg when one of the men who weight 65 kg is replaced by a new man. The weight of the new man is:
a) 70 kg   b) 74 kg
c) 76 kg   d) 77 kg

16. The average weight of 8 persons is increased by 2.5 kg when a person whose weight is 76 kg replaced a man from the group. The weight of man replaced is:
a) 36 kg   b) 75 kg
c) 56 kg   d) 96 kg

17. The average age of 8 persons in a committee is increased by 2 years when two men aged 35 years and 45 years are substituted by two women. The average age of these two women is
a) 28 years   b) 48 years
c) 96 years   d) 42 years

18. The mean of 100 items was found to be 30. If at the time of calculation two items were wrongly taken as 32 and 12 instead of 23 and 11, correct mean is:
a) 29.4   c) 29.5
b) 29.8   d) 29.9

19. The mean of 30 items was found to be 20. If at the time of calculation two items were wrongly taken as 26 and 76 instead of 66 and 56, correct mean is:
a) 18   b) 20.66
c) 20   d) 19.33

20. The average temperature of Monday, Tuesday and Wednesday was 30^0 C and that of Tuesday, Wednesday and Thursday was 35^0 C. If the temperature on Monday was 32^0 C, what was the temperature Thursday on?
a) 42^0C   b) 17^0C
c) 46^0C   d) 47°C

21. The average temperature of Monday, Tuesday, Wednesday and Thursday was 38 degree C and that of Tuesday, Wednesday, Thursday and Friday was 40 degree C. If the temperature on Friday was 30 degree C, what was the temperature on Friday?
a) 22^0 C   b) 24^0C
c) 38^0C   d) 40^0C

22. The average of first 100 natural numbers is:
a) 50   b) 51
c) 50.5   d) 51.5

23. 51+53+55+…………..99=
a) 1725   b) 1875
c) 1900   d) 2000

24. The average of first 50 even numbers is:
a) 50   b) 51
c) 52   d) 25.5

25. The average of first 9 multiples of 3 is:
a) 12   b) 12.5
c) 15   d) 18.5

26. The sum of first 11 multiples of 9 is:
a) 54   b) 594
c) 600   d) 495

27. The average of 9 consecutive natural numbers is 18. The lowest of these numbers will be
a) 24   b) 14
c) 20   d) 22

28. The average of 7 consecutive even numbers is 30. The highest of these numbers will be
a) 24   b) 34
c) 36   d) 22

29. The average of 8 consecutive even numbers is 19. The sum of two lowest of these numbers will be
a) 24   b) 18
c) 26   d) 22

30. The average of 9 consecutive odd numbers is 25. The 2nd highest of these numbers will be
a) 25   b) 35
c) 21   d) 31

31. The average of 6 consecutive odd numbers is 30. The lowest of these numbers will be
a) 25   b) 35
c) 37   d) 27

32. The average of 5 consecutive natural numbers is n. If the next two numbers are also included, the average of seven numbers will:
a) Increases by 2
b) Increase by 1
c) Remain the same
d) Increase by 1.4

33. Six persons went to a hotel for taking their meals. Five of them spent Rs.32 each on their meals while the 6th person spent Rs.80 more than the average expenditure of all the six. Total money spent by all the persons is:
a) Rs.192   b) Rs.240
c) Rs.288   d) Rs.336

34. 8 persons went to a hotel for taking their meals. Seven of them spent Rs.50 each on their meals while the 8th person spent Rs.70 more than the average expenditure of all the eight. Total money spent by all the persons is:
a) Rs.500   b) Rs.480
c) Rs.470   d) Rs.400

35. Average of 9 numbers is 18. Out of them the average of first 4 numbers is 17 and the average of last 4 numbers is 20. The middle number is:
a) 15   b) 1 2
c) 13   d) 14

36. Average of 75 numbers is 120. Out of them the average of first 37 numbers is 118 and the average of last 37 numbers is 121. The middle number is:
a) 157　　　　　b) 112
c) 132　　　　　d) 137

37. Average of 13 numbers is 20. Out of them the average of first 7 numbers is 18 and the average of last 7 numbers is 21. The middle number is:
a) 12　　　　　b) 15
c) 13　　　　　d) 14

38. Average of 15 numbers is 20. Out of them the average of first 8 numbers is 21 and the average of last 8 numbers is 18. The middle number is:
a) 21　　　　　b) 22
c) 23　　　　　d) 12

39. Average of 11 numbers is 30. Out of them the average of first 6 numbers is 32 and the average of last 6 numbers is 29. The middle number is:
a) 21　　　　　b) 22
c) 36　　　　　d) 24

40. There were 35 students in a hostel. If the number of students be increased by 7, the total expenditure on food increases by Rs.42 per day while the average expenditure of students is reduced by Re.1. What was the initial expenditure on food per day?
a) Rs.432　　　　b) Rs.442
c) Rs.420　　　　d) Rs.400

41. There were 50 students in a hostel. If the number of students be increased by 10, the expenditure on food increases by Rs.100 per day while the average expenditure of students is reduced by Re.1. What was the initial expenditure on food per day?
a) Rs.600　　　　b) Rs.840
c) Rs.780　　　　d) Rs.800

HOME ASSIGNMENT

42. Of three numbers, the first is 4 times the second and 3 times the third. If the average of all the three numbers is 95, what is the third number?
a) 76　　　　　b) 60
c) 130　　　　　d) 57

43. The average weight of A,B and C is 45 kg. If the average weight of A and B be 40 kg and that of B and C be 43 kg, then the weight (in kg) of B is
a) 20　　　　　b) 26
c) 31　　　　　d) 28

44. If the arithmetic mean of seventy-five numbers is calculated, it is 35. If each number is increased by 5, then mean of new numbers is :
a) 30　　　　　b) 40
c) 70　　　　　d) 90

45. If each number is increased by 10%, then average of ten positive numbers
    a) remain unchanged
    b) decrease by 10%
    c) increase by 10%
    d) can't say

46. The average age of a husband and his wife was 23 years at the time of their marriage. After five years they had a one-year old child. The average age of the family at that time is:
    a) 19 years   b) 23 years
    c) 28.5 years   d) 29.3 years

47. The average age of husband, wife and their child 3 years ago was 27 years and that of wife and the child 5 years ago was 20 years. The present age of the husband is :
    a) 35 years   b) 40 years
    c) 50 years   d) None of these

48. 3 years ago, the average age of a family of 5 members was 17 years. A baby having been born, the average age of the family is the same today. The presents age of the baby is :
    a) 1 years   b) 1.5 years
    c) 2 years   d) 3 years

49. 10 years ago, the average age of a family of 4 members was 24 years. Two children having been born (with age difference of 2 years), the present average age of the family is the same. The present age of the youngest child is:
    a) 1years   b) 2years
    c) 3years   d) 5years

50. In an examination, a pupil's average marks were 63 per paper. If he had obtained 20 more marks for his Geography paper and 2 more marks for his History paper, his average per paper would have been 65. How many papers were there in the examination?
    a) 8   b) 9
    c) 10   d) 11

51. There are two sections A and B of a class, consisting of 36 and 44 students respectively. If the average weight of section A is 40 kg and that of section B is 35 kg, find the average weight of the whole class.
    a) 37.25 kg   b) 38 kg
    c) 38.25 kg   d) 39 kg

52. The captain of cricket team of 11 members is 26 years old and the wicket keeper is 3 years older. If the ages of these two are excluded, the average age of the remaining players is one year less than the average age of the whole team. What is the average age of the team?
    a) 23 years   b) 24 years
    c) 25 years   d) None of these

53. The average age of a family of 6 members is 22 years. If the age of the youngest member be 7 years, the average age of the family at the birth of the youngest member, was
    a) 15 years   b) 17 years
    c) 17.5 years   d) 18 years

54. The average of batsman for 40 innings is 50 runs. His highest score exceeds his lowest score by 16 runs. If these two innings are excluded, his average drops by 2 runs. His highest score is?
    a) 86   b) 92
    c) 174   d) 170

55. Average of 11 numbers is 36, whereas average of 9 of them is 34. If the remaining two numbers are in the ratio of 2:3, find the value of the smallest number (among these two numbers).
    a) 45   b) 48
    c) 54   d) 36

56. The average of some natural numbers is 15. If 30 is added to first number and 5 is subtracted from the last number, the average becomes 17.5. Then the number of natural numbers is?
    a) 15   b) 20
    c) 10   d) 30

57. The average weight of 15 oarsmen in a boat is increased by 1.6 kg when one of the crew, who weighs 42 kg is replaced by a new man. Find the weight of the new man?
    a) 43   b) 67
    c) 65   d) 66

58. The average weight of 45 students in a class is 52 kg. Five of them whose average weight is 48 kg leave the class and other 5 students whose average weight is 54 kg join the class. What is the new average weight (in kg) of the class?
    a) 52 1/3   b) 52 ½
    c) 52 2/3   d) None of these

59. The average marks in English subject of a class of 24 students are 56. If the marks of three students were misread as 44, 45 and 61 of the actual marks 48, 59 and 67 respectively, then what would be the correct average?
    a) 56   b) 55
    c) 57.5   d) 58.5
    e) None of these

60. Out of four numbers the average of the first three is 16 and that of last three is 15. If the last number is 20 then the first number is:
    a) 23   b) 28
    c) 17   d) 21

61. The mean temperature of Monday to Wednesday was 37℃ and of Tuesday to

Thursday was 34℃. If the temperature on Thursday was $\frac{4}{5}$ th that of Monday, then what was the temperature on Thursday?
a) 36.5℃   b) 36℃
c) 35.5℃   d) 34℃

62. The average of first 100 whole numbers is:
a) 50   b) 49.5
c) 50.5   d) 51.5

63. What is the arithmetic mean of the first n natural numbers?
a) $\frac{n+1}{2}$ b) $\frac{n^2(n+1)}{2}$
c) $2(n+1)$ d) $\frac{n(n+1)}{2}$

64. What is the arithmetic mean of first 20 odd natural numbers?
a) 20   b) 22
c) 19   d) 17

65. The sum of first 20 odd numbers is
a) 210   b) 300
c) 400   d) 420

66. The sum of four consecutive even numbers is 284. What would be the smallest number?
a) 72   b) 74
c) 68   d) 66
e) 70

67. A man ate 100 grapes in 5 days. Each day, he ate 6 more grapes than those he ate on the earlier day. How many grapes did he eat on the first day?
a) 8   b) 12
c) 74   d) 76

68. Out of six consecutive natural numbers, if the sum of first three is 27, what is the sum of other three?
a) 36   b) 35
c) 25   d) 24

69. If the sum of five consecutive integers is S, then the largest of those integers in terms of S is
a) $\frac{S-10}{5}$ b) $\frac{S+4}{4}$
c) $\frac{S+5}{5}$ d) $\frac{S+10}{5}$

70. The sum of five consecutive even numbers of set-A is 220. What is the sum of different set of five consecutive odd numbers whose second lowest number is 37 less than double of the first number of set-A?
a) 223   b) 225
c) 235   d) 243
e) None of these

71. a, b, c, d and e are five consecutive even numbers. If the sum of 'a' and 'd' is 162, what is the sum of all the numbers?
a) 400   b) 380
c) 420   d) can't say
e) None of these

72. The sum of three consecutive odd numbers and three consecutive even numbers together is 231. Also, the smallest odd number is 11 less than the smallest even number. What is the sum of the largest odd number and the largest even number?
a) 82   b) 83
c) 74   d) can't say
e) None of these

73. If the mean of 5 observations x, x + 2, x + 4, x + 6 and x + 8 is 11, then the mean of the last three observations
a) 11   b) 13
c) 15   d) 17

74. The mean of n observations is x. If the first observation is increased by 1, second by 2, and so on, then their mean is y. The value of y-x is
a) n b) $\frac{n}{2}+1$
c) $\frac{n(n+1)}{2}$ d) $\frac{n+1}{2}$

75. Out of 9 persons, 8 persons spent Rs.30 each for their meals. The ninth one spent Rs.20 more than the average expenditure of all the nine. The total money spent by all of them was :
a) Rs.260   b) Rs.290
c) Rs.292.50   d) Rs.400.50

76. In a team of 10 persons, 9 persons spent Rs.40 each for their meal and the remaining one spent Rs.9 more than the average expenditure of all the 10 persons. The total expenditure for their meal was
a) 510   b) 310
c) 410   d) 610

77. The average of 7,11,15,x,14,21,25 is 15, then the value of x is:
a) 13.3   b) 3
b) 14.5   d) 12

78. The average age of seven boys sitting in a row facing North is 26 years. If the average age of first three boys is 19 years and the average age of last three boys is 32 years, what is the age of the boy who is sitting in the middle of the row?
a) 28 years   b) 29 years
c) 24 years   d) 31 years
e) None of these

79. A company produces on an average 4000 items per months for the first 3 months. How many items it must produce on an average per month over the next 9 months, to average 4375 items per month over the whole?
a) 4500   b) 4600
c) 4680   d) 4710

80. The average of age of 35 students in a class is 16 years. The average age of 21 students is

14. What is the average age of remaining 14 students?

a) 15 years b) 17 years
c) 18 years d) 19 years

81. Average score of Rahul, Manish and Suresh is 63. Rahul's score is 15 less than Ajay and 10 more than Manish. If Ajay scored 30 marks more than the average score of Rahul, Manish and Suresh, what is the sum of Manish's and Suresh's scores?

a) 120 b) 111
c) 117 d) can't say
e) None of these

82. Of three numbers, the average of first and second is greater than the average of the second and third by 15. What is the difference between the first and the third number?

a) 15 b) 45
c) 60 d) can't say
e) NOT

83. Average weight of three boys P, T and R is $54\frac{1}{3}$ kgs while the average weight of three boys T, F and G is 53 kg. What is the average weight of P, T, R, F and H?

a) 53.8 kg b) 52.4 kg
c) 53.2 kg d) can't say
e) None of these

84. Four numbers are written in a row. The average of first two numbers is 7, the average of middle two numbers is 2.3 and the average of last two numbers is 8.4. The average of first number and the last number is

a) 5.9 b) 10.7
c) 13.1 d) can't say

85. In a group of five friends, the sum of ages (in years) of each group of 4 of them are 124, 128, 130, 136 and 142. The age (in years) of the youngest of them is

a) 18 b) 21
c) 23 d) 27

86. The mean of 15 different natural numbers is 13. The maximum value of the second largest of these numbers is

a) 53 b) 52
c) 51 d) 50

87. Average of 11 numbers is 30. Out of them the average of first 6 numbers is 32 and the average of last 6 numbers is 29. The middle number is:

a) 21 b) 22
c) 36 d) 24

1.	a	2.	c	3.	b	4.	a	5.	d
6.	a.2022	b.101.33	c.199.66	7.	c	8.	c
9.	b	10.	b	11.	c	12.	c	13.	b
14.	b	15.	d	16.	c	17.	b	18.	d
19.	b	20.	d	21.	a	22.	c	23.	b
24.	b	25.	c	26.	b	27.	b	28.	c
29.	c	30.	d	31.	a	32.	b	33.	c
34.	b	35.	d	36.	a	37.	c	38.	d
39.	d	40.	c	41.	d	42.	b	43.	d
44.	a	45.	c	46.	a	47.	b	48.	c
49.	c	50.	d	51.	a	52.	a	53.	d
54.	a	55.	d	56.	c	57.	d	58.	c
59.	b	60.	a	61.	b	62.	b	63.	a
64.	a	65.	c	66.	c	67.	a	68.	a
69.	d	70.	b	71.	e	72.	e	73.	b
74.	d	75.	c	76.	c	77.	d	78.	b
79.	a	80.	d	81.	b	82.	e	83.	d
84.	c	85.	c.	86.	c	87.	c		

Answer key:

5. WEIGHTED AVERAGE AND ALLIGATION

<u>Space for concepts and important points</u>

1. A person bought 3 dozen oranges at Rs20 per dozen and 7 dozen at Rs30 per dozen. Find his average cost per dozen?
   a) 29   b) 25
   c) 27   d) none of these

2. The cost of the Red, Green and Blue colors per Kg is Rs.20, Rs.15 and Rs.18 respectively. Rangmahal is a renowned building in which these three colors are being used in the ratio of 3:2:4. The average cost of all the three colors used per Kg is:
   a) 20   b) 18
   c) 15   d) $\frac{53}{3}$

3. Three types of rice whose rates are Rs.10, Rs.15 and Rs.20 are blended together to make a new blend of rice in which there are 39 Kg, 26 Kg and 65 Kg of the respective type of rice. The average price of the new blend of rice is:
   a) 15   b) 10
   c) 16   d) 12

4. The average weight of 16 boys in a class is 51 kg and that of the remaining 8 boys is 48 kg. Find the average weight of all the boys in the class.
   a) 49   b) 50
   c) 51   d) 48

5. Two mixtures containing milk in 30% and 75% concentration are mixed in ratio 1:2. What will be the concentration of milk in the new mixture?
   a) 40%   b) 45%
   c) 70%   d) 60%

6. Mohan has two milk-water solutions. The ratio of milk to water in both the solutions are 2:3 and 7:3 respectively. What will be the milk – water ratio if he mixes 2 parts of 1st solution with 3 parts of 2nd solution?
   a) 29:50   b) 21:50
   c) 21:29   d) 29:21

7. A shopkeeper bought 15 Kg of rice at the rate of Rs.12 per Kg and 25 Kg of rice at the rate of Rs.20 per Kg. If he sold them at Rs.19 per Kg then his profit in this transaction is
   a) 2   b) 40
   c) 65   d) 80

8. The ratio of number of boys and girls in a school is 3:2. If 20% of the boys and 30% of the girls are scholarship holders. Find what % of students are not scholarship holders?
   a) 76%   b) 24%
   c) 74%   d) 26%

9. A dry-fruit seller mixes three varieties of walnuts costing Rs.50, Rs.20 and Rs.30 per kg in the ratio 2:4:3 in Terms of weight and sells the mixture at Rs.33 per kg. What percentage of profit does he make?
   a) 8%
   b) 9%
   c) 10%
   d) None of these

10. Two-thirds of a consignment was sold at a profit of 6% and the rest at a loss of 3%. If there was an overall profit of Rs.540, the value of the consignment was:
    a) Rs.15000
    b) Rs.16000
    c) Rs.18000
    d) None of these

11. Mr. Gupta deposits Rs.3000 in a bank at 10% per annum and Rs.5000 in another bank at 8% per annum. The rate of interest for the whole sum is:-
    a) 8½%
    b) 8¾%
    c) 8%
    d) None of these

12. A person invested $\frac{2}{3}$ of his capital at 3% p.a., $\frac{1}{6}$ at 6% p.a. and the remainder at 12% p.a. simple interest. If his annual gain is Rs.25, then the capital is:-
    a) Rs.490
    b) Rs.510
    c) Rs.500
    d) None of these

13. As our earth is covered 71% with water and this percentage for northern hemisphere is 58%. Find what % of southern hemisphere is not covered with water?
    a) 16%
    b) 84%
    c) 13%
    d) 87%

14. The ratio of land to water is 1:2 for whole earth and this ratio for northern hemisphere is 2:3. Find this ratio for southern hemisphere.
    a) 1:3
    b) 4:15
    c) 1:2
    d) 4:11

15. In what ratio must a mixture of 30% alcohol be mixed with that of 50% alcohol so as to get a mixture of 45% alcohol?
    a) 3:1
    b) 1:3
    c) 3:5
    d) 10:9

16. Two alloys containing zinc and copper in ratio 1:4 and 3:5 respectively. In what ratio should we mix them to get a new alloy containing 35% zinc?
    a) 4:9
    b) 5:8
    c) 6:1
    d) 1:6

17. Two vessels A and B contain milk and water mixed in the ratio 4:3 and 2:3. The ratio in which these mixtures be mixed to form a new mixture containing half milk and half water is
a) 7:5
b) 6:5
c) 5:6
d) 4:3

18. A mixture of 40 liters of milk and water contains 10% of water. How much water must be added to make the water 20% in the new mixture?
a) 20
b) 5
c) 15
d) 8

19. In 50gms alloy of gold and silver, the gold is 80% by weight. How much gold should be mixed to this alloy so that the weight of the gold becomes 95%?
a) 200
b) 150
c) 100
d) 300

20. The average of marks scored by the students of a class is 68. The average of marks of the girls in the class is 80 and that of boys is 60. What is the percentage of boys in the class?
a) 40%
b) 60%
c) 65%
d) 70%

21. The average of marks scored by 250 students of a class is 54. The average of the marks of the girls in the class is 80 and that of boys is 30. What is the number of boys in the class?
a) 120
b) 150
c) 100
d) 130

22. Pure ghee costs Rs.100 per kg. After adulterating it with vegetable oil costing Rs.50/kg, a shopkeeper sells the mixture at Rs.96/kg, thereby making a profit of 20%. In what ratio does he mix the two?
a) 1:2
b) 3:2
c) 3:1
d) None

23. A merchant has 1000 kg of sugar, part of which he sells at 8% profit and the rest at 18% profit. He gains 14% on the whole. The quantity sold at 18% profit is:
a) 560 kg
b) 600 kg
c) 400 kg
d) 640 kg

24. The total cost price of two watches is Rs.840. One is sold at a profit of 16% and the other at a loss of 12%. There is no loss or gain in the whole transaction. The cost price of the watch on which the shopkeeper gains is:
a) Rs.360
b) Rs.370
c) Rs.480
d) Rs.390

The amount of liquid P that must be added to 7 liters of Q so that the mixture may weigh as much as water, will be

a) 7

b) $5\frac{1}{6}$

c) 5

d) $4\frac{2}{3}$

25. Mr. Mani invested an amount of Rs.12000 at the simple interest rate of 10% per annum and another amount at the simple interest rate of 20% per annum. The total interest earned at the end of one year on the total amount invested became 14% per annum. Find the total amount invested.

a) Rs.20000
b) Rs.20800
c) Rs.28000
d) Rs.18000

29. A container contains 60 kg of milk. From this container 6 kg of milk was taken out and replaced by water. This process was repeated further two times. The amount of milk left in container is

a) 34.24 kg
b) 39.64 kg
c) 43.74 kg
d) 47.6 kg

26. Mr. Ravi lent Rs.18000 partly at 3% and 12% p.a. simple interest. The total interest received after 3 years is Rs.2700. the difference between the sum lent at 3% and 12% is

a) Rs.10000
b) Rs.4000
b) Rs.14000
c) Rs.2000

30. Several liters of acid were drawn off a 54 L vessel full of acid and an equal amount of water is added. Again the same volume of mixture was drawn off and replaced by water. As a result the vessel contained 24 L of pure acid. How much of acid was drawn off initially?

a) 12 L
b) 16 L
c) 18 L
d) 24 L

27. A person has many pet cats and dogs. Every day he feeds 3 breads to each cat and 5 to each dog. If the daily consumption of bread is 210 pieces and total number of animals is 50 then find the number of cats.

a) 25
b) 15
c) 30
d) 20

31. A vessel is filled with liquid 3 parts of which are water and 5 parts syrup. How much of the mixture must be drawn off and replaced with water so that the mixture may be half water and half syrup?

a) $\frac{1}{3}$
b) $\frac{1}{4}$
c) $\frac{1}{5}$
d) $\frac{1}{7}$

28. A liquid P is $1\frac{3}{7}$ times as heavy as water and water is $1\frac{2}{5}$ times as heavy as another liquid Q.

32. When one liter of water is added to a mixture of acid and water, the new mixture contains 20% acid. When 1 liter of acid is added to the new mixture, then the resulting mixture contains $33\frac{1}{3}$% acid. The percentage of acid in the original mixture was
a) 20%
b) 22%
c) 24%
d) 25%

HOME ASSIGNMENT

33. A fruit seller sold big, medium and small sized apples for Rs.15, Rs.10 and Rs.5 respectively. The total number of apples sold were in the ratio 3:2:5. Find the average cost of an apple.
a) 8
b) 10
c) 9
d) 7

34. A and B are two alloys of gold and copper prepared by mixing metals in the ratio 7:2 and 7:11 respectively. If equal quantities of the alloys are melted to form a third alloy C, the ratio of gold and copper in C will be:
a) 7:5
b) 5:9
c) 9:5
d) 5:7

35. There are three containers of equal capacity. The ratio of Sulphuric acid to water in the first container is 3:2, that in the second container is 7:3 and in the third container it is 11:4. If all the liquids are mixed together, then the ratio of Sulphuric acid to water in the mixture will be:
a) 61:29
b) 61:28
c) 60:29
d) 59:29

36. Partha earns 15% on an investment but loses 10% on another investment. If the ratio of two investments is 3:5, then the combined loss percent is
a) $\frac{5}{4}$
b) $\frac{4}{5}$
c) $\frac{8}{5}$
d) $-\frac{5}{8}$

37. Two-third of a consignment was sold at a profit of 5% and the remainder at a loss of 2%. If the total profit was Rs.400, then the value of consignment was
a) 15,000
b) 15,500
c) 16,000
d) 16,500

38. A person bought 76 cows and sold 20 cows at 15% profit, 40 cows at 19% profit and remaining cows at 25% profit and got a profit of Rs.6570 as a whole. The cost price of each cow is
a) Rs.450
b) Rs.425
c) Rs.420
d) Rs.400

39. If a man receives on one fourth of his capital 3% interest, on two third 5% and on the remainder 11%, the percentage he receives on the whole is:
a) 4.5
b) 5
c) 5.5
d) 5.2

40. The arithmetic mean of the scores of a group of students in a test was 52. The brightest 20% of them secured a mean score of 80 and the dullest 25%, a mean score of 31. The mean score of remaining 55% is:
a) 50%
b) 51.4 approx.
c) 54.6% approx.
d) 45%

41. A cloth merchant sold half of his cloth at 40% profit, half of the remaining at 40% loss and the rest was sold at the cost price. In the total transaction his gain or loss will be
a) 20 gain
b) 25% loss
c) 10% gain
d) 15% gain

42. A dealer sold $\frac{3}{4}$th of his articles at a gain of 24% and the remaining at the cost price. Percentage of gain in the whole transaction is
a) 15
b) 18
c) 24
d) 32

43. I purchased 120 exercise books at the rate of Rs.3 each and sold $\frac{1}{3}$ of them at the rate of Rs.4 each, $\frac{1}{2}$ of them at the rate of Rs.5 each and the rest at the cost price. My profit percent was
a) 44%
b) $44\frac{4}{9}$%
c) $44\frac{2}{3}$%
d) 45%

44. The population of a village is 25,000. One fifth are females and the rest are males. 5% of males and 40% of females are uneducated. What percent on the whole are educated?
a) 75%
b) 88%
c) 55%
d) 85%

45. A man purchased 150 pens at the rate of Rs.12 per pen. He sold 50 pens at a gain of 10%. The percentage gain at which he must sell the remaining pens so as to gain 15% on the whole outlay is
    a) $21\frac{1}{2}\%$ b) 20%
    c) 17%   d) $17\frac{1}{2}\%$

46. A man buys a field of agricultural land for Rs.3,60,000. He sells one-third at a loss of 20% and two-fifth at a gain of 25%. At what price must he sell the remaining field so as to make an overall profit of 10%?
    a) Rs.1,00,000
    b) Rs.1,15,000
    c) Rs.1,20,000
    d) Rs.1,25,000

47. A shopkeeper bought 80 kg of sugar at the rate of Rs.13.50 per kg. He mixed it with 120 kg of sugar costing Rs.16 per kg. In order to make a profit of 20%, he must sell the mixture at
    a) Rs.18 per kg
    b) Rs.17 per kg
    c) Rs.16.40 per kg
    d) Rs.15 per kg

48. Rahul purchased 30 kg of rice at the rate of Rs.10 per kg and 35 kg at the rate of Rs.11 per kg. He mixed the two. At what price per kg (in Rs.) should he sell the mixture to make a 30% profit in the transaction?
    a) 12.5   b) 13
    c) 13.7   d) 14.25

49. Nita blends two varieties of tea- one costing Rs.180 per kg and another costing Rs.200 per kg in the ratio 5:3. If she sells the blended variety at Rs.210 per kg, then her gain is
    a) 10%   b) 11%
    c) 12%   d) 13%

50. A shopkeeper blends two varieties of tea costing Rs.18 and Rs.13 per 100 gm in the ratio 7:3. He sells the blended variety at the rate of Rs.18.15 per 100 gm. His percentage gain in the transaction is
    a) 10%   b) 12%
    c) 14%   d) 8%

51. On mixing two classes A and B of students having average marks 25 and 40 respectively, the overall average obtained is 30. Find the ratio of the students in the classes A and B.
    a) 2:1   b) 5:8
    c) 5:6   d) 3:4

52. The ratio in which a man must mix rice at Rs.10.20 per kg and Rs.14.40 per kg so as to make a mixture worth Rs.12.60 per kg, is
    a) 4:3   b) 2:5
    c) 18:24   d) 3:4

53. In a town, the population was 8000. In one year, male population increased by 10% and female population increased by 8% but the total population increased by 9%. The number of males in the town was:
    a) 4000   b) 4500
    c) 5000   d) 6000

54. The population of a village was 9800. In a year, with the increase in population of males by 8% and that of females by 5%, the population of the village became 10458. What was the number of males in the village before increase?
    a) 4200   b) 4410
    c) 5600   d) 6048

55. 200 liters of mixture contains milk and water in the ratio 17:3. After the addition of some more milk to it, the ratio of milk to water in the resulting mixture becomes 7:1. The quantity of milk added to it was
    a) 20   b) 40
    c) 60   d) 80

56. A man lent Rs.60,000, partly at 5% and the rest at 4% simple interest. If the total annual interest is Rs.2560, the money lent at 4% was
    a) Rs.40,000   b) Rs.44,000
    c) Rs.30,000   d) Rs.45,000

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

58. A man had 100 kg of sugar, part of which he sold at 7% profit and the rest at 17% profit. He gained 10% on the whole. How much did he sell at 7% profit?
    a) 65 kg   b) 35 kg
    c) 30 kg   d) 70 kg

59. A man bought a horse an a carriage for Rs.40,000. He sold the horse at a gain of 10% and the carriage at a loss of 5%. He gained 1% on whole transaction. The cost price of the horse was:
    a) Rs.15,000   b) Rs.16,000
    c) Rs.18,000   d) Rs.20,000

60. A person bought two articles A and B for Rs.5,000. He sold A at 20% profit and B at 10% loss. He thus gained 2% on his outlay. The cost price of A was
    a) Rs.3,000   b) Rs.2,500
    c) Rs.2,000   d) Rs.3,500

61. A man purchased two fans for Rs.2160. By selling one fan at a profit of 15% and the other at a loss of 9% he neither gains nor loses in the transaction. Find the cost price of each fan in Rs.

a) 710,1450   b) 1530,630
c) 810,1350   d) 1340,820

62. 380 mangoes are distributed among some boys and girls who are 85 in number. Each boy gets four mangoes and each girl gets five. The number of boys is
   a) 15   b) 38
   c) 40   d) 45

63. A man has some hens and cows. If the number of heads : number of feet=12:35, find out the number of hens, if the number of heads alone is 48.
   a) 28   b) 26
   c) 24   d) 22

64. In an examination, a student scores 4 marks for every correct answer and loses one marks for every wrong answer. A student attempted all the 200 questions and scored, in all 200 marks. The number of questions, he answered correctly was
   a) 82   b) 80
   c) 68   d) 60

65. From a container, full of pure milk, 20% is replaced by water and this process is repeated three times. At the end of the third operation, the quantity of pure milk reduces to
   a) 40.0%   b) 50.0%
   c) 51.2%   d) 58.8%

66. A can contains a mixture of two liquids A and B in the ratio 7:5. When 9 litres of mixture are drawn off and the can is filled with B, the ratio of A and B becomes 7:9. Litres of liquid A contained by the can initially was
   a) 10   b) 20
   c) 21   d) 25

67. A container contains two liquids A and B in the ratio 7:5. When 9 litres of mixture are drawn off and the container is filled with B, the ratio of A and B becomes 1:1. How many litres of liquid A was in the container initially?
   a) 26   b) $16\frac{1}{2}$
   c) $36\frac{3}{4}$ d) $26\frac{3}{4}$

Answer key:

1. c	2. b	3. c	4. b	5. d
6. d	7. d	8. a	9. c	10. c
11. b	12. c	13. a	14. d	15. b
16. d	17. a	18. b	19. b	20. b
21. d	22. b	23. b	24. c	25. a
26. a	27. d	28. d	29. c	30. c
31. c	32. d	33. c	34. a	35. a
36. d	37. a	38. a	39. b	40. b
41. c	42. b	43. b	44. b	45. d
46. c	47. a	48. c	49. c	50. a
51. a	52. d	53. a	54. c	55. b

56. b	57. d	58. d	59. b	60. c
61. c	62. d	63. b	64. b	65. c
66. c	67. c			

6. RATIO AND PROPORTION

Space for concepts and important points

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CLASS ASSIGNMENT

1. A:B=5:7 and B:C=7:12 then A:B:C=?
   a) 5:12:7   b) 5:7:12
   c) 7:5:12   d) none

   b) A:D=?
   a) 8:35   b) 9:35
   c) 10:35   d) 11:35

2. A:B=3:5 and B:C=10:7.Then A:B:C=?
   a) 3:5:7   b) 3:10:7
   c) 6:10:7   d) 6:10:14

   c) B:D=?
   a) 35:12   b) 12:35
   c) 12:23   d) 23:12

3. A:B=4:5 And B:C=2:3 Then A:B:C=?
   a) 8:10:15   b) 8:15:10
   c) 10:15:8   d) 15:10:8

7. A:B=3:4, B:C=2:7 and C:D=5:2 then $\frac{AB}{CD}$ =?
   a) $\frac{15}{37}$ b) $\frac{37}{15}$
   c) $\frac{98}{15}$ d) $\frac{15}{98}$

4. A:B=2:3, B:C=5:9 And C:D=6:7 then A:B:C:D=?
   a) 20:30:63:54   b) 20:54:30:63
   c) 20:30:54:63   d) 63:54:30:20

8. A:B=3:2, B:C=4:3 and C:D=7:5 then $\frac{ABC}{BCD}$ =?
   a) $\frac{5}{14}$ b) $\frac{14}{5}$
   c) $\frac{7}{5}$ d) $\frac{5}{7}$

5. A:B=3:4, B:C=3:5, C:D=2:3 then A:B:C:D=?
   a) 9:12:20:30   b) 20:12:9:30
   c) 12:20:9:30   d) 20:9:30:12

9. 5A=2B then A:B=?
   a) 5:2   b) 7:2
   c) 7:3   d) 2:5

10. 10A=3B then A:B=?
    a) 10:3   b) 3:10
    c) 7:3   d) 10:13

6. A:B=2:3, B:C=4:7 and C:D=3:5 then
   a) A:C=?
   a) 5:21   b) 6:21
   c) 7:21   d) 8:21

11. 3A=2B=4C then A:B:C=?
    a) 6:3:4   b) 4:6:3
    c) 4:3:6   d) 4:2:3

16. A sum of money Rs.4200 is distributed among Amar and Madan in 9:5. What is the part of Madan?
    a) 1050   b) 1500
    c) 1005   d) 5100

12. 24A=6B=18C then A:B:C=?
    a) 3:12:4   b) 12:3:4
    c) 4:12:3   d) 12:4:3

17. Madhuri Dixit and Shri Devi invest together a sum of money Rs.66300 in a mutual fund company in the ratio 4:9. What is the sum of money invested by Madhuri Dixit?
    a) 40200   b) 45000
    c) 20200   d) 20400

13. A:B=$\frac{1}{2}:\frac{1}{3}$ then A:B=?
    a) 2:3   b) 3:2
    c) 4:7   d) 9:4

14. A:B:C=$\frac{1}{2}:\frac{1}{3}:\frac{1}{4}$, then A:B:C=?
    a) 4:6:3   b) 4:3:2
    c) 6:3:4   d) 6:4:3

18. If a sum of Rs.4410 is distributed among Sunny, Boby and Dharmendra in ratio 3:7:8 respectively. What is the part of Sunny?
    a) 1545   b) 1740
    c) 745   d) 735

15. If $\frac{A}{B} = \frac{C}{D} = \frac{E}{F} = \frac{2}{3}$, then $\frac{3A+2C+4E}{3B+2D+4F}$ is
    a) $\frac{3}{2}$ b) $\frac{2}{3}$
    c) $\frac{4}{9}$ d) can't say

19. If ratio of Ram and Shayam's salary is 9:13 and ratio between Shayam and Mohan's is 4:7. Then what is the ratio of Ram, Shayam and Mohan salary?
    a) 36:91:52   b) 36:52:91
    c) 52:36:91   d) can't say

20. If the ratio of the income of Sachin and Dravid, Dravid and Ganguly, Ganguly and Anil is 1:2, 2:3 and 5:6 respectively. If the sum of their income is Rs.9600. What is the income of Sachin?
a) 1200   b) 1300
c) 1100   d) 1000

21. In a school the ratio of boys and girls is 3:2 and boy are 500 more than girls. Find the no. of girls.
a) 1000   b) 200
c) 1100   d) 1050

22. In a district the ratio of aspirants of SSC and BANK PO is 5:3. If SSC aspirants are 8000 more than BANK PO aspirants, then no. of aspirants of BANK PO is.
a) 10200   b) 12000
c) 10000   d) 10020

23. The ratio of expenditure and saving of a person is 5:4. If the total expenditure is 800 more than total saving then his income is.
a) 7000   b) 7220
c) 7200   d) 2700

24. If sum of money distributed among three friends P, Q and R is in ratio 2:5:7. If the share of P and R is Rs.800 more than Q's share. What is share of P?
a) 400   b) 500
c) 350   d) 450

25. A sum of money distributed among A,B and C in the ratio 3:7:5 respectively. If difference of A and B is Rs.7600 then what is the share of C?
a) 8500   b) 7500
c) 9500   d) 9000

26. A bag contained 50, 20 Rs. and 5 RS. Notes in the ratio 4:5:6. The total sum of money in the bag is Rs.3300. find the no of 50 Rs. Notes in the bag?
a) 40   b) 30
c) 35   d) 42

27. A man have Rs.235 in the form of Re 1, 50 paisa and 25 paisa coins and their ratio is 11:15:20 respectively. Find the value of all 50 paisa coins in rupees?
a) 75   b) 140
c) 300   d) 150

28. A man has Rs.152 in his pocket comprised of 50, 25 and 10 paisa coins and their ratio is 7:10:16. Find the value of all 10 paisa coins?
a) 23   b) 32
c) 20   d) 30

29. In a class the ratio of boys and girls is 2:3. If 10 boys as well as10 girls enrolled as new students then the ratio becomes 4:5. Find the no. of girls in the class.
a) 32   b) 30
c) 40   d) 25

30. The ratio of two numbers is 5:8. If 15 is subtracted from each number than the ratio becomes 2:5. Find the 1st number?
a) 52   b) 25
c) 10   d) 45

31. The ratio of area of two spheres is 25:36. Then what is the ratio of its volume?
a) 5:6   b) 625:1296
c) 125:216   d) 25:36

32. What is the ratio of the volume of ball if its area ratio is 0.04:0.25?
a) 0.008:0.125   b) 0.08:0.125
c) 80:125   d) 80:125

33. If the ratio of volume of two spheres is 343:125. What is the ratio of area?
a) 49:125   b) 49:25
c) 48:25   d) 36:49

34. ?:4::48:16
a) 12   b) 13
c) 14   d) 15

35. 10:?::24:36
a) 10   b) 11
c) 15   d) 14

36. 16:28::?:42
a) 24   b) 23
c) 22   d) 21

37. $\frac{1}{4}:\frac{1}{8}::\frac{1}{3}:?$
a) $\frac{1}{5}$ b) $\frac{1}{9}$
c) $\frac{1}{6}$ d) 1

38. Find the 3rd proportional to 5, 3 and 12.
    a) 5   b) 10
    c) 20   d) 40

39. Find the 4th proportional to 7, 14 and 5.
    a) 10   b) 5
    c) 7   d) 20

40. A, B and C are in continued proportion. Find C if A=9 and B=6.
    a) 2   b) 4
    c) 8   d) 3

41. If two nos. are 4 and 8, the 1st proportional to these nos. is
    a) 6   b) 2
    c) 4   d) 3

42. Find the mean proportional of 0.4 and 0.9.
    a) 6   b) 0.006
    c) 0.6   d) 60

43. What is the 3rd proportional of nos. 4 and 48?
    a) 675   b) 476
    c) 576   d) 586

44. What should be added in 41, 51, 50 and 62 so that they become proportionate?
    a) 8   b) 6
    c) 4   d) 2

45. 63, 71, 80 and 90 are four numbers, then what should be added in these numbers to make them in proportion?
    a) 6   b) 5
    c) 4   d) 2

46. To make proportionate what should be subtracted from 20, 32, 40 and 67?
    a) 5   b) 3
    c) 4   d) 2

47. What should be subtracted from these numbers 31, 51, 25 and 40 respectively so that they become in proportion?
    a) 9   b) 8
    c) 7   d) 6

HOME ASSIGNMENT

48. If $a:b = 7:9$ and $b:c = 15:7$, then what is $a:b:c$?
    a) 35:45:21   b) 21:45:35
    c) 45:35:12   d) none

49. If $x = \frac{1}{3}y$ and $y = \frac{1}{2}z$, then $x:y:z$, is equal to:
    a) 3:2:1   b) 1:2:6
    c) 1:3:6   d) 2:4:6

50. If $a:b = \frac{2}{9}:\frac{1}{3}$, $b:c = \frac{2}{7}:\frac{5}{14}$, and $d:c = \frac{7}{10}:\frac{3}{5}$ then $a:b:c:d$ is:
    a) 4:6:7:9   b) 16:24:30:35
    c) 8:12:15:7   d) 30:35:24:16

51. A:B=3:4 and B:C=5:7 and C:D=8:9 then A:D is equal to

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a) 3:7
b) 7:3
c) 21:10
d) 10:21

52. If $a:b = 5:7$ and $c:d = 2a:3b$, then $ac:bd$ is:
a) 20:38
b) 50:147
c) 10:21
d) 50:151

53. If $p:q = r:s = t:u = 2:3$, then $(mp + nr + ot):(mq + ns + ou)$ is equal to
a) 1:3
b) 1:2
c) 2:3
d) 3:2

54. If $a:b = c:d$, then $\frac{ma+nc}{mb+n}$ is not equal to
a) $\frac{a}{b}$
b) $\frac{c}{d}$
c) $\frac{a+c}{b+d}$
d) $\frac{c-a}{b-d}$

55. If $a:b:c = 3:4:7$, then the ratio $(a + b + c):c$ is equal to
a) 2:1
b) 14:3
c) 7:2
d) 1:2

56. If $A:B:C = 2:3:4$, then ratio $\frac{A}{B}:\frac{B}{C}:\frac{C}{A}$ is equal to
a) 8:9:16
b) 8:9:12
c) 8:9:24
d) 4:9:16

57. If $x:y = 3:1$, then $x^3 - y^3 : x^3 + y^3 = ?$
a) 13:14
b) 14:13
c) 10:11
d) 11:10

58. If two times of A is equal to three times of B and also equal to four times of C, then A:B:C is
a) 2:3:4
b) 3:4:3
c) 4:6:3
d) 6:4:3

59. Three persons A, B and C whose salaries together amounts to Rs.77000 spend 80, 85 and 75 percent of their salaries respectively. If their savings are in the ratio 8:9:10, then A's salary is
a) 20000
b) 16000
c) 22000
d) 18000

60. Three numbers are in the ratio $\frac{1}{2}:\frac{2}{3}:\frac{3}{4}$. The difference between the greatest and the smallest numbers is 36. The numbers are
a) 72, 84, 108
b) 60, 72, 96
c) 72, 84, 96
d) 72, 96, 108

61. By mistake, instead of dividing Rs.117 among A, B and C in the ratio $\frac{1}{2}:\frac{1}{3}:\frac{1}{4}$ it was divided in the ratio 2:3:4. Who gains the most and by how much?
a) A, Rs.28
b) B, Rs.3
c) C, Rs.20
d) C, Rs.25

62. A person distributes his pen among four friends A, B, C, D in the ratio $\frac{1}{3}:\frac{1}{4}:\frac{1}{5}:\frac{1}{6}$. What is the minimum number of pens that the person should have?
a) 57
b) 65
c) 75
d) 45

63. Twice the square of a number is six times the other number. What is the ratio between the first number and the second number?
a) 1:4
b) 2:5
c) 1:3
d) can't say
e) None of these

64. In a school, the ratio of boys to girls is 4:3 and the ratio of girls to teachers is 8:1. The ratio of students to teachers is:
a) 56:3
b) 55:1
c) 49:3
d) 56:1

65. A, B and C are batsmen. The ratio of runs scored by them in a certain match are given below:
A:B=5:3 and B:C=4:5. In all they scored 564 runs. The number of runs scored by B is
a) 124
b) 104
c) 114
d) 144

66. The sum of three numbers is 116. The ratio of second to the third is 9:16 and the first to the third is 1:4. The second number is
a) 30
b) 32
c) 34
d) 36

67. Rs.3400 is divided among A, B, C and D in such a way that the share of A and B, B and C, C and D may be as 2:3, 4:3 and 2:3 respectively. The sum of shares of B and D is
a) 2040
b) 1680
c) 2000
d) 1720

68. Three numbers are in ratio 2:3:4. If the sum of their squares is 1856, then the numbers are
a) 8, 12 and 16
b) 16, 24 and 32
c) 12, 18 and 24
d) None of the above

69. The ratio of two numbers is 3:8 and their difference is 115. The smaller of two numbers is
a) 184
b) 194
c) 69
d) 59

70. If a number is divided by the other number, the division is $\frac{3}{5}$, if their difference is 28, what is the bigger number of the two?
a) 35
b) 140
c) 70
d) 84
e) 42

71. Four numbers are in the ratio 1:2:3:4. Their sum is 16. The sum of first and fourth number is equal to:
a) 5
b) 8
c) 10
d) 80

72. The ratio of two numbers is 10:7 and their difference is 105. The sum of these numbers is
a) 595
b) 805
c) 1190
d) 1610

73. The product of two positive integers is 1575 and their ratio is 9:7. The smaller integer is
    a) 25   b) 35
    c) 45   d) 70

74. Three numbers are in the ratio 3:4:5. The sum of the largest and the smallest equals the sum of the second and 52. The smallest number is
    a) 20   b) 27
    c) 39   d) 52

75. The monthly salaries of A, B and C are in the ratio 2:3:5. If C's monthly salary is Rs.12000 more than that of A, then B's annual salary is
    a) 1,20,000   b) 1,44,000
    c) 1,80,000   d) 2,40,000

76. The average of two numbers is 62. If 2 is added to the smallest number, the ratio between the numbers becomes 1:2. The difference of the numbers is
    a) 62   b) 40
    c) 84   d) 44

77. If the sum of two quantities is equal to three times their difference, then the ratio of the two quantities is equal to
    a) 1:3   b) 3:1
    c) 2:1   d) 2:3

78. The incomes of A, B and C are in the ratio 3:7:4 and the expenses in the ratio 4:3:5. If A saves Rs.300 out of an income of Rs.2400, the savings of B and C are:
    a) 4025 and 575
    b) 1575 and 2625
    c) 2750 and 1525
    d) 3725 and 1525

79. The income of A and B are in the ratio 5:3. The expenses of A, B and C are in the ratio 8:5:2. If C spends Rs.2000 and B saves rs.700, then A saves
    a) 1500   b) 1000
    c) 500   d) 250

80. The sum of ages of a father and his son is 100 years now. 5 years ago their ages were in the ratio of 2:1. The ratio of the ages of father and son after 10 years will be
    a) 5:3   b) 4:3
    c) 10:7   d) 3:5

81. The ratio of incomes of A and B as well as of B and C is 3:2. If one third of A's income exceeds one fourth of C's income by Rs.1000, what is B's income in Rs.?
    a) 3000   b) 2500
    c) 3500   d) 4000

82. A man has Rs.152 in his pocket comprised of 50, 25 and 10 paisa coins and their ratio is 7:10:16. Find the value of all 10 paisa coins?
    a) 23   b) 32
    c) 20   d) 30

83. Rs.180 contained in a box consists of one rupee, 50 paise and 25 paise coins in the ratio 2:3:4. What is the number of 50 paise coins?
    a) 60   b) 120
    c) 150   d) 180

84. A person bought some rice and wheat for Rs.380. The ratio of weight of rice and wheat is 4:3 and the price of equal amount of rice and wheat is in the ratio 5:6. The rice was bought of worth
    a) 380   b) 300
    c) 200   d) 180

85. The ratio between two numbers is 3:4. If each number is increased by 6, the ratio becomes 4:5. The difference between the numbers is
    a) 1   b) 3
    c) 6   d) 8

86. What number should be subtracted from both terms of ratio 15:19 in order to make it 3:4?
    a) 9   b) 6
    c) 5   d) 3

87. Two numbers are in the ratio 5:7. On diminishing each of them by 40, they become in the ratio 17:27. The difference of the numbers is
    a) 18   b) 52
    c) 137   d) 50

88. The ratio of boys and girls in a college is 5:3. If 50 boys leave the college and 50 girls join the college, the ratio becomes 9:7. The number of boys in the college is
    a) 300   b) 400
    c) 500   d) 600

89. To get the ratio $p:q$ (for $p \neq q$), one has to add to each term of the ratio $x:y$, the number
    a) $\frac{px+qy}{p-q}$ b) $\frac{qx-py}{p-q}$
    c) $\frac{px-qy}{p-q}$ d) $\frac{py-}{p-q}$

90. At present, the ratio of the ages of Maya and Chhaya is 6:5 and fifteen years from now, the ratio will get changed to 9:8. Maya's present age is
    a) 21   b) 24
    c) 30   d) 40

91. The ratio of present ages of two brothers is 1:2 and 5 years back the ratio was 1:3. What will be the ratio of their ages after 5 years?
    a) 1:4   b) 2:3
    c) 3:5   d) 5:6

92. Four years ago, the ratio of A's age to B's age was 11:14 and four years later their ages will be in the ratio 13:16. The present age of A is
    a) 48   b) 26
    c) 44   d) 28

93. The students in three classes are in the ratio 2:3:5. If 40 students are increased in each

class, the ratio changes to 4:5:7. Originally, the total number of students was:
a) 100   b) 180
c) 200   d) 400

94. The number of students in three classes are in the ratio 2:3:4. If 12 students are increased in each class, this ratio changes to 8:11:14. The total number of students in the three classes in the beginning was
a) 162   b) 108
c) 96   d) 54

95. The ratio of number of boys to that of girls in a group becomes 2:1 when 15 girls leave. But afterwards, when 45 boys also leave, the ratio becomes 1:5. Originally the number of girls in the group was
a) 20   b) 30
c) 40   d) 50

96. The ratio of number of ladies to that of gents at a party was 3:2. When 20 more gents joined the party, the ratio was reversed. The number of ladies present at the party was
a) 36   b) 32
c) 24   d) 16

97. The total number of students of a school was 660. The ratio between boys and girls was 13:9. After some days, 30 girls joined the school and some boys left the school and new ratio between boys and girls became 6:5. The number of boys who left the school is:
a) 50   b) 40
c) 30   d) 60

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

99. In 30 litres mixture of acid, the ratio of acid and water is 2:3. What amount of water should be added to the mixture so that the ratio of acid and water becomes 2:5?
a) 10   b) 15
c) 18   d) 12

100. The ratio between a two-digit number and the sum of the digits of that number is 4:1. If the digit in the unit's place is 3 more than the digit in the ten's place, the number is
a) 47   b) 69
c) 36   d) 25

101. 94 is divided into two parts in such a way that the fifth part of the first and the eighth part of the second are in the ratio 3:4. The first part is:
a) 30   b) 36
c) 40   d) 28

102. Divide Rs.1250 among A, B and C so that A gets $\frac{2}{9}$ of B's share and C gets $\frac{3}{4}$ of A's share.
a) 200, 800 and 250
b) 200, 900 and 150
c) 150, 800 and 300
d) 200, 900 and 75

103. The ratio of number of balls in bags x, y is 2:3. Five balls are taken from bag y and are dropped in bag x. Number of balls are equal in each bag now. Number of balls in each bag now is
a) 45   b) 20
c) 30   d) 25

104. The annual incomes of A and B are in the ratio 4:3 and the ratio of their expenditures is 3:2. If each of them saves Rs.600 in the year, the annual income of A is
a) 4800   b) 1800
c) 1200   d) 2400

105. The 4th proportional to 0.12, 0.21, 8 is:
a) 8.9   b) 56
c) 14   d) 17

106. The third proportional of 12 and 18 is
a) 3   b) 6
c) 27   d) 144

107. The third proportional to 0.8 and 0.2 is:
a) 0.05   b) 0.8
c) 0.4   d) 0.032

108. If b is the mean proportion of a and c, then $(a-b)^3 : (b-c)^3$ equals
a) $a^3 : c^3$ b) $b^2 : c^2$
c) $a^2 : c^2$ d) $a^3 : b^3$

109. What number should be added to each of 6, 14, 18 and 38 so that the resulting numbers make a proportion?
a) 1   b) 2
c) 3   d) 4

110. Which number when added to each of the numbers 6,7,15 and 17 will make the resulting numbers proportional?
a) 6   b) 5
c) 4   d) 3

111. When a particular number is subtracted from each of 7,9,11 and 15, the resulting number are in proportion. The number to be subtracted is
a) 1   b) 2
c) 3   d) 5

112. What should be subtracted from these numbers 31, 51, 25 and 40 respectively so that they become in proportion?
a) 9   b) 8
c) 7   d) 6

Answer key:

1.b	2.c	3.a	4.c	6a.a
6b.a	6c.b	7.d	8.b	9.d
10.b	11.b	12.a	13.b	14.d
15.b	16.b	17.d	18.d	19.b
20.d	21.a	22.b	23.c	24.a
25.c	26.a	27.a	28.b	29.d
30.b	31.c	32.a	33.b	34.a
35.c	36.a	37.c	38.c	39.a
40.b	41.b	42.c	43.c	44.c
45.b	46.c	47.c		
48.a	49.c	50.b	51.d	52.b
53.c	54.d	55.a	56.c	57.a
58.d	59.c	60.d	61.a	62.a
63.d	64.a	65.d	66.d	67.d
68.b	69.c	70.c	71.b	72.a
73.b	74.c	75.b	76.d	77.c
78.a	79.a	80.a	81.a	82.b
83.b	84.c	85.c	86.d	87.d
88.c	89.b	90.c	91.c	92.a
93.d	94.a	95.c	96.c	97.c
98.a	99.d	100.c	101.a	102.b
103.d	104.d	105.c	106.c	107.a
108.d	109.b	110.d	111.c	112.c

7. PARTNERSHIP

<u>Space for concepts and important points</u>

1. Nikita and Nishita enter into a partnership investing Rs.50000 and Rs.40000 respectively. Find the share of Nikita in a profit of Rs.22500 after 1 year?
   a) 12500   b) 10000
   c) 15000   d) 7500

2. Niki, Nisha and Anu formed a partnership with investments of Rs.75000, Rs.60000 and Rs.40000 respectively. After 3 years of operation they had a net profit of Rs.26250. What was the share of Anu in the profit?
   a) 1125   b) 9000
   c) 6000   d) none

3. A, B, C and D enters into a partnership. A subscribes $1/3^{rd}$ of the capital, B $1/4^{th}$, C $1/5^{th}$ and D the rest. What is the share of D out of a profit of Rs.6000?
   a) 2000   b) 1500
   c) 1200   d) 1300

4. Mahesh, Suresh and Ganesh entered into a partnership. Mahesh invested Rs.16000 for 9 months. Suresh invested Rs.12000 for 6 months and Ganesh invested Rs.8000 for 12 months. At the end of a year there was a profit of Rs.26000. Find the share of Suresh in the profit?
   a) 12000   b) 6000
   c) 8000   d) 10000

5. A, B and C rented a pasture. A puts in 12 oxen for 6 months, B 8 oxen for 7 months and C 6 oxen for 8 months. If the rent of the field is Rs.396, what rent is paid by A?
   a) 108   b) 18
   c) 126   d) 162

6. A and B enters into partnership for a year. A contributes Rs.1500 and B Rs.2000. After 4 months they admitted C who contributes Rs.2250. If B withdraws his contribution after 9 months, at the end of year they share profit in the ratio:
   a) 1:2:3   b) 1:1:2
   c) 1:1:1   d) can't say

7. Sita and Gita enter into a partnership. Sita contributes Rs.5000 while Gita contributes Rs.4000.After 1 month Gita withdraws $1/4^{th}$ part of her contribution and after 3 months from starting Sita put Rs.2000 more. When Gita withdraws her money at the same time Rita also joined them with Rs.7000. If at the end of 1 year there is a profit of Rs.1920. What will be the share of Rita in the profit?
   a) 770   b) 780
   c) 370   d) none

8. A, B and C enters into a partnership with shares in the ratio 7/2:4/3:6/5. After 4 months A increases his share by 50%. If the total profit by the end of the 1 year be Rs.21600, then B's share in the profit is:
   a) 4000   b) 3600
   c) 14000   d) none

9. A starts business with Rs.3500 and 5 months later B join as his partner. After a year the profits are divided in the ratio of 2:3. How much did B contributed?
   a) 8000   b) 7000
   c) 9000   d) none

10. Gupta and Bansal enters into a partnership with their capitals in the ratio 5:6. At the end of 8 months, Gupta withdraws his capital. If they receive the profit in the ratio 5:9, find how long Bansal's capital was used?
    a) 9 months   b) 8 months
    c) $1\frac{1}{2}$ year   d) 1 year

11. Amrinder began a business with Rs.550 and was joined afterwards by Balwinder with Rs.330. After how many months did Balwinder join if the profit at the end of year were divided in ratio 10:3?
    a) 6 months   b) 8 months
    c) 9 months   d) none

12. A began business with Rs.3750 and was joined afterwards by B with Rs.5000. After how many months did B join if the profits at the end of the year were divided equally?
    a) 6 months   b) 8 months
    c) 9 months   d) 3 months

13. Jatinder and Harinder entered into a partnership with their capitals in the ratio 5:9. At the end of 8 months Jatinder withdraws his capital. If they received the profit in the ratio 4:9, find how long Harinder capital was used?
    a) 9 months   b) 10 months
    c) 2 months   d) 1 year

14. A, B and C invested capitals in the ratio 3:5:9, the timing of their investment being in the ratio 2:3:1. In what ratio would their profits be distributed?
    a) 3:2:5   b) 3:5:2
    c) 2:5:3   d) 5:2:3

15. Sumit, Punit and Ramit started a business by investing their capitals in the ratio 1:2:3. At the end of business term, they received the profits in the ratio 4:5:6. Find the ratio of their periods of investment.
    a) 8:5:4   b) 4:5:8
    c) 8:4:5   d) 5:4:8

60% of the profits incurred from the business will be equally divided between them while remaining profit will be assumed as interest on their capitals. If one of the partners gets Rs.800 more profit than the other, what is the total profit in the business?
a) 10500   b) 9200
c) 8000   d) can't say

Answer key:

1.a	2.c	3.d	4.b	5.d
6.c	7.a	8.a	9.c	10.d
11.a	12.d	13.b	14.c	15.a
16.d	17.c	18.c	19.a	

16. A, B and C started a business. If the ratio of their periods of investment is 2:3:6 and their profits are in the ratio of 4:5:6, then the ratio of capitals of A, B and C is:
a) 5:6:3   b) 6:3:5
c) 3:5:6   d) 6:5:3

17. A and B invested in a business in the ratio 3:2. If 5% of total profit goes to charity and A's share is Rs.855. Find the total profit?
a) 570   b) 1425
c) 1500   d) can't say

18. A and B jointly invested Rs.2100 and Rs.3100 respectively in a firm. A is an active partner and hence he gets 25% of the profit separately. If their business yields them total Rs.1040 as a profit, what will be the gain of A?
a) 465   b) 315
c) 575   d) 725

19. Two persons invested Rs.12500 and Rs.8500, respectively in a business and decided that

8. TIME AND WORK

Space for concepts and important points

CLASS ASSIGNMENT

1. A takes 8 hours to do a job and B takes 10 hours to do the same job. How long will it take for both of them working together to complete the work?

    a) 18   b) 9

    c) $4\frac{4}{9}$ d) 4

2. A tire has two punctures. 1ST puncture alone can make the tire flat in 9 min and 2ND alone in 6 min. How long does it take for both the punctures to make the tire flat?

    a) 1.5   b) 3.6

    c) 3.5   d) 25

3. Two pipes A and B can fill a tank in 36 hours and 45 hours respectively. If both the pipes are opened simultaneously in how much time the tank will be full?

    a) 12.5   b) 10.25

    c) 20   d) 9.75

4. Pipes A, B and C can fill a tank in 5 hour, 10 hour and 30 hours respectively. If all the pipes are opened together in how many hours will the tank be full?

    a) 5   b) 3

    c) 4   d) 3.5

5. A and B can complete a piece of work in 4 days. If A alone can complete the work in 12 days. In how many days B alone can complete the same work?

    a) 5   b) 6

    c) 4   d) 8

6. A and B working separately can do a piece of work in 9 and 12 days. If they work for a day each alternately, beginning with A, in how many days the work will be completed?

    a) $\frac{36}{7}$ b) $\frac{21}{4}$

    c) $\frac{41}{4}$ d) $\frac{31}{3}$

7. A and B can do a work in 12 days, B and C in 15 days and C and A in 20 days. If A, B and C work together they will finish the work in

    a) 6   b) 10

    c) 12   d) 5

8. A tank can be filled by a pipe in 4 hours while it can be emptied by another pipe fully in 9 hours. If both are opened then in how many hours the tank will be full?

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a) $\frac{36}{5}$ b) $\frac{36}{13}$

c) 7   d) 5

12. A works twice as fast as B. If B can complete a work in 12 days independently, the no. of days in which A and B together finish the work is
   a) 3   b) 6
   c) 4   d) 8

9. A pipe can fill a tank in 12 hours but due to a leak the tank is filled in 18 hrs. In how many hours can the leak empty the full tank?
   a) 40   b) 24
   c) 26   d) 36

13. A is twice as good a workmen as B and together they finished a piece of work in 14 days. The no. of days taken by A alone to finish the work is
   a) 42   b) 36
   c) 21   d) 28

10. Three pipes A, B and C can fill a tank in 12, 15 and 20 hours respectively. If A is open all the time and B and C are opened for one hour each alternately, beginning with B then, the tank will be full in?
   a) 7   b) $7\frac{1}{2}$
   c) 8   d) none

14. A can do one and half as much of a work which B can do in one day. B alone can do a piece of work in 18 days. They together can finish that work in
   a) $10\frac{1}{5}$ days   b) $11\frac{1}{5}$ days
   c) $5\frac{1}{5}$ days   d) $7\frac{1}{5}$ days

11. A and B working separately can finish a task in 18 and 12 days respectively. A started the work and B joined him after some days. They finished the work in 12 days. How many days after A, did B joined?
   a) 8   b) 4
   c) 9   d) none

15. A is 30% more efficient than B. B can complete a work in 39 days. How many days will A take to complete the work alone
   a) 30   b) 51

c) 42   d) 35

19. A completes a work in 10 days and B in 15
    days. They worked for 5 days and the rest of
    the work was finished by C in 2 days. If they
    got Rs.1500 for whole work,   then the
    combined daily wage for B and C is
    a) 150   b) 225
    c) 250   d) 300

16. Sakshi can do a piece of work in 20 days.
    Tanya is 25% more efficient than Sakshi. The
    no of days taken by Tanya to do the same
    work are
    a) 18   b) 16
    c) 22   d) 25

Variation based:

20. If 15 toys cost Rs.234, then cost of 35 toys is
    a) 564   b) 546
    c) 456   d) 654

21. 36 men can do a piece of work in 25 hours, in
    how many hours will 15 men do it?
    a) 60   b) 30
    c) 40   d) 50

17. A can do a piece of work in 12 days and B in
    18 days and they are paid Rs.250 for a work.
    Find the share of A?
    a) 150   b) 100
    c) 175   d) 225

22. Quarter Kg of potato cost 60paise, how many
    paise will 200 gram cost?
    a) 75   b) 36
    c) 24   d) 48

18. A can do 1/4th of the work in 3 days. B can do
    1/6th of the same work in 4 days. How much
    will A get if both worked together and are
    paid 180 in all?
    a) 36   b) 60
    c) 108   d) 120

23. Cost of 8 packs of salt, each weighing 900gm
    is Rs.28. What will be the cost of 27 packs
    each weighing 1 Kg?
    a) 70   b) 35
    c) 105   d) 42

24. 4 mat weavers can weave 4 mats in 4 days. At the same rate how many mats would be woven by 8 mat weavers in 8 days?
a) 8   b) 16
c) 12   d) 32

25. 20 men can build a 56 meter long wall in 6 days, what length of similar wall can be built by 35 men in 3 days?
a) 49   b) 42
c) 64   d) 140

26. 3 pumps working 8 hours a day can empty a tank in 2 days. How many hours a day must 4 pumps work to empty the tank in 1 day?
a) 6   b) 18
c) 24   d) 12

27. A certain number of persons can dig a trench 100 m long, 50 m broad and 10 m deep in 10 days. Twice number of persons can dig another trench 20 m broad and 15 m deep in 30 days. The length of second trench is?
a) 500   b) 1000
c) 750   d) none

Men × days based:

28. 50 men can complete some work in 70 days, after working for 10 days together 20 men went on leave. In how many days was the total work completed?
a) 100   b) 110
c) 90   d) 80

29. A camp has provisions for 150 men for 45 days. After 15 days 100 more men joined the camp. Find the total number of days the remaining provisions will last for.
a) 90   b) 45
c) 18   d) 33

30. 20 men completed 1/3rd of a piece of work in 20 days. How many more men should be employed to finish the rest of the work in 25 more days?
a) 10   b) 12
c) 32   d) can't say

31. A contractor undertook to complete a project in 90 days and employed 60 men on it. After 60 days he found that $\frac{3}{4}$ of the work has already been completed. How many men can he discharge so that the project may be completed exactly on time?
a) 40   b) 20

c) 30   d) 50

35. In a camp there is a meal for 120 men or 200 children. If 150 children have taken the meal, how many men can be satisfied with the remaining meal?
a) 60   b) 90
c) 15   d) 30

32. If 5 men or 9 women can do a piece of work in 19 days then in how many days will 3 men and 6 women do the same work?
a) 15   b) 12
c) 9   d) 18

36. 2 men and 7 boys can do a piece of work in 14 days whereas 3 men and 8 boys can do the same work in 11 days. Then 8 men and 6 boys will do three times the amount of work in
a) 7   b) 21
c) 14   d) none

33. 1 man or 2 woman or 3 boys can do a piece of work in 44 days, then the same work will be done by 1 man and 1 woman and 1 boy in how many days?
a) 12   b) 8
c) 24   d) 18

37. 12 men and 18 boys working $7\frac{1}{2}$ hours a day, can do a piece of work in 60 days. If a man works equal to 2 boys, then how many boys will be required to help 21 men to do twice the work in 50 days, working 9 hours daily?
a) 21   b) 42
c) 28   d) none

34. If 3 men or 6 boys can do a piece of work in 10 days, working 7 hours daily. How many days will it take to complete a piece of work half the earlier with 6 men and 2 boys working together for 8 hours a day?
a) 30   b) 15
c) $\frac{15}{8}$ d) $\frac{15}{4}$

HOME ASSIGNMENT

38. A can do a piece of work in 20 days and B can do the same piece of work in 30 days. Find in how many days both can do the work?

a) 16 days   b) 14 days
c) 10 days   d) 12 days

39. A alone can complete a work in 12 days. A and B together can complete it in 8 days. How long will B alone take to complete the work?
a) 24 days   b) 18 days
c) 16 days   d) 20 days

40. Two pipes A and B can fill a tank in 20 minutes and 30 minutes respectively. If both pipes are opened together, the time taken to fill the tank is:
a) 50 minutes   b) 12 minutes
c) 25 minutes   d) 15 minutes

41. Ronald and Elan are working on an assignment. Ronald takes 6 hours to type 32 pages on a computer, while Elan takes 5 hours to type 40 pages. How much time will they take working together on two different computers to type an assignment of 110 pages?
a) 7 hours 30 min.
b) 8 hours
c) 8 hours 15 min.
d) 8 hours 25 min.

42. A pipe can fill a tank in x hours and another can empty it in y hours. They can together fill it in ($y>x$)
a) $y-x$ b) $\frac{xy}{y-x}$
c) $x-y$ c) $\frac{xy}{x-y}$

43. A cistern has two pipes. One can fill it with water in 8 hours other can empty it in 5 hours. In how many hours will the cistern be emptied if both the pipes are opened together when $\frac{3}{4}$ of the cistern is already full of water?
a) $13\frac{1}{3}$ hours   b) 10 hours
c) 6 hours   d) $3\frac{1}{3}$ hours

44. A can do a work in 15 days and B in 20 days. If they together work on it for 4 days, then the fraction of the work that is left is:
a) $\frac{8}{15}$ b) $\frac{7}{15}$
c) $\frac{1}{4}$ d) $\frac{1}{10}$

45. P can complete $\frac{1}{4}$ of a work in 10 days, Q can complete 40% of the same work in 15 days, R, $\frac{1}{3}$ of the work in 13 days and S, $\frac{1}{6}$ of the work in 7 days. Who will be able to complete the work first?
a) P   b) Q
c) R   d) S

46. A completes $\frac{7}{10}$ of a work in 15 days, then he completes the remaining work with the help of b in 4 days. The time required for

A and B together to complete the entire work is:
a) $10\frac{1}{2}$ days   b) $12\frac{2}{3}$ days
c) $13\frac{1}{3}$ days   d) $8\frac{1}{4}$ days

47. A can cultivate $\frac{2}{5}$ th of the land in 6 days and B can cultivate $\frac{1}{3}$ rd of the same land in 10 days. Working together A and B can cultivate $\frac{4}{5}$ th of the land in:
a) 4 days   b) 5 days
c) 8 days   d) 10 days

48. A can do a work in 8 days which B can destroy in 3 days. A has worked for 6 days, during last 2 of which B has been destroying; how many days must A now work alone to complete the work?
a) 7 days   b) $7\frac{1}{3}$ days
c) $7\frac{2}{3}$ days   d) 8 days

49. Two pipes A and B can separately fill a cistern in 60 minutes and 75 minutes respectively. There is a third pipe in the bottom of the cistern to empty it. If all the three pipes are simultaneously opened, then the cistern is full in 50 minutes. In how much time the third pipe alone can empty the cistern?
a) 110 minutes   b) 100 minutes
c) 120 minutes   d) 90 minutes

50. Two pipes can fill a cistern in 3 hours and 3 hours 45 minutes respectively and a third pipe can empty the whole cistern in an hour. The cistern is half full of water and all the three pipes are opened together. The time after which the cistern will be emptied, is
a) 1 hour 15 minutes
b) 1 hour 30 minutes
c) 1 hour 45 minutes
d) 45 minutes

51. A can do a piece of work in 4 hours; B and C can do it in 3 hours. A and C can do it 2 hours. How long will B alone take to do it?
a) 10 hours   b) 12 hours
c) 8 hours   d) 24 hours

52. A and B together can complete a work in 12 days. A alone can complete in 20 days. If B does the work only half a day daily, then in how many days A and B together will complete the work?
a) 10 days   b) 20 days
c) 11 days   d) 15 days

53. A and B can do a piece of work in 72 days. B and C can do it in 120 days. A

and C can do it in 90 days. In how many days all the three together can do the work?

a) 80 days   b) 100 days
c) 60 days   d) 150 days

54. A and B together can complete a work in 8 days and B and C together in 12 days. All of the three together can complete the work in 6 days. In how much time will A and C together complete the work?

a) 8 days   b) 10 days
c) 12 days   d) 20 days

55. While working 7 hours a day, A alone can complete a piece of work in 6 days and B alone in 8 days. In what time would they complete it together, working 8 hours a day?

a) 3 days   b) 4 days
c) 2.5 days   d) 3.6 days

56. A can do as much work as B and C together can do. A and B can together do a piece of work in 9 hours 36 minutes and C can do it in 48 hours. The time that B needs to do the work alone, is:

a) 18   b) 24
c) 30   c) 12

57. Three pipes P, Q and R can separately fill a cistern in 4, 8 and 12 hours respectively. Another pipe S can empty the completely filled cistern in 10 hours. Which of the following arrangements will fill the empty cistern in less time than others?

a) Q alone is open.
b) P and S are open.
c) P, R and S are open.
d) P, Q and S are open.

58. A and B working separately can do a piece of work in 10 days and 15 days respectively. If they work on alternate days beginning with A, in how many days will the work be completed?

a) 18 days   b) 13 days
c) 12 days   d) 6 days

59. A, B and C can do a piece of work in 30, 20 and 10 days respectively. A is assisted by B on one day and by C on next day, alternately. How long would the work take to finish?

a) $9\frac{3}{8}$ days   b) 5 days
c) $8\frac{4}{13}$ days   d) $3\frac{9}{13}$ days

60. A tank is fitted with two taps. The first tap can fill the tank completely in 45 minutes and the second tap can empty the full tank in one hour. If both the taps are opened alternately for one minute, then in how many hours the tank will be filled completely?

a) 2 hours 55 minutes
b) 3 hours 40 minutes
c) 4 hours 48 minutes
d) 5 hours 53 minutes

61. A, B and C can do a piece of work in 20, 30 and 60 days respectively. In how many days can A do the work if he is assisted by B and C on every third day?

a) 10 days   b) 12 days
c) 15 days   d) 20 days

62. A can do a work in 5 days less than the time taken by B to do it. If both of them together take $11\frac{1}{9}$ days, then the time by B alone to do the same work (in days) is

a) 15   b) 20
c) 25   d) 30

63. If two pipes function simultaneously, a tank is filled in 12 hours. One pipe fills the tank 10 hours faster than the other. How many hours does the faster pipe alone take to fill the tank?

a) 20   b) 18
c) 15   d) 12

64. A and B can do a work in 18 and 24 days respectively. They worked together for 8 days and then A left. The remaining work was finished by B in:

a) 5 days   b) $5\frac{1}{3}$ days
c) 8 days   d) 10 days

65. A and B can do a job in 6 and 12 days respectively. They began the work but A leaves after 3 days. Then the total number of days needed for the completion of the work is:

a) 4   b) 5
c) 6   d) 9

66. A and B can together finish a work in 30 days. They worked together for 20 days and then B left. After another 20 days B finished the remaining work. In how many days A alone can finish the job?

a) 50   b) 60
c) 48   d) 54

67. A and B can do a piece of work in 28 and 35 days respectively. They began to work together but A leaves after some time and B completed remaining work in 17 days. After how many days did A leave?

a) $14\frac{2}{5}$ days   b) 9 days
c) 8 days   d) $7\frac{5}{9}$ days

68. A and B can do a piece of work in 45 and 40 days respectively. They begin the work together but A leaves after some days and

B finished the remaining work in 23 days. A left after
a) 6 days b) 9 days
c) 12 days d) 5 days

69. Two pipes X and Y can fill a cistern in 24 and 32 minutes respectively. If both the pipes are opened together, then after how much time (in minutes) should Y be closed so that the tank is full in 18 minutes?
a) 10 b) 8
c) 6 d) 5

70. A can complete a piece of work in 10 days, B in 15 days and C in 20 days. A and C worked together for two days and then A was replaced by B. In how many days, altogether, was the work completed?
a) 12 b) 6
c) 10 d) 8

71. A man and a boy can complete a work in 24 days. If for the last six days the man alone does the work then it is completed in 26 days. How long the boy will take to complete the work alone?
a) 72 days b) 20 days
c) 24 days d) 36 days

72. Three pipes A, B and C can fill a tank in 6 hours. After working for 2 hours together, C is closed and A and B fill the tank in 8 hours. The time (in hours) in which the tank can be filled by pipe C alone is
a) 10 b) 12
c) 8 d) 9

73. A tank has a 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 liters of water per minute in the tank, the leak takes 15 hours to empty the tank. How many liters of water does the tank hold?
a) 2400 b) 4500
c) 1200 d) 7200

74. A can do a piece of work in 18 days and B in 12 days. They began the work together, but B left the work 3 days before its completion. In how many days, in all, was the work completed?
a) 12 b) 10
c) 9.6 d) 9

75. A, B and C can do a work in 24, 30 and 40 days respectively. They begin the work together but C left 4 days before completion of the work. In how many days was the work done?
a) 13 b) 14
c) 11 d) 12

76. A, B and C can complete a work in 10, 12 and 15 days respectively. They started the work together. But A left the work before 5 days of its completion. B also left the work 2 days after A left. In how many days was the work completed?
a) 4 b) 5
c) 7 d) 8

77. A and B together can do a piece of work in 12 days which B and C can do in 16 days. After A has been working at it for 5 days and B for 7 days, C finishes it in 13 days. In how many days B could finish the work?
a) 48 days b) 24 days
c) 16 days d) 12 days

78. One pipe can fill a tank three times as fast as another pipe. If together the two pipes can fill the tank in 36 minutes, the slower pipe alone will be able to fill the tank in
a) 81 minutes b) 108 minutes
c) 144 minutes d) 192 minutes

79. Kamal can do a work in 15 days. Bimal is 50% more efficient than Kamal. The number of days, Bimal will take to do the same piece of work, is
a) 14 b) 12
c) 10 d) $10\frac{1}{2}$

80. Babu and Asha can do a job together in 7 days. Asha is $1\frac{3}{4}$ times as efficient as Babu. The same job can be done by Asha alone in
a) $\frac{49}{4}$ days b) $\frac{49}{3}$ days
c) 11 days d) $\frac{28}{3}$ days

81. A is three times more efficient worker than B and is, therefore, able to complete a work in 60 days earlier. The number of days, that A and B together will take to complete the work, is:
a) $22\frac{1}{2}$ b) 25
c) $27\frac{1}{2}$ d) 30

82. To complete a work, A takes 50% more time than B. If together they take 18 days to complete the work, how much time shall B take to do it?
a) 30 days b) 35 days
c) 40 days d) 45 days

83. A is twice as good a workman as B and B is twice as good a workman as C. If A and B can together finish a piece of work in 4 days, then C can do it by himself in
a) 6 days b) 8 days

c) 24 days   d) 12 days

84. A does half as much work as B in one sixth of the time. If together they take 10 days to complete a work, how much time shall B take to do it alone?
a) 70 days   b) 30 days
c) 40 days   d) 50 days

85. A and B together can do a work in 12 days. B and C together do it in 15 days. If A's efficiency is twice that of C, then the days required for B alone to finish the work is
a) 60   b) 30
c) 20   d) 15

86. A is 50% as efficient as B. C does half of the work done by A and B together. If C alone does the work in 20 days, then A, B and C together can do the work in
a) $5\frac{2}{3}$ days   b) $6\frac{2}{3}$ days
c) 6 days   d) 7 days

87. To do a certain work, B would take time thrice as long as A and C together and C twice as long as A and B together. The three men together complete the work in 10 days. The time taken by A to complete the whole work separately is
a) 22 days   b) 24 days
c) 30 days   d) 20 days

88. A swimming pool has three drain pipes. The first two pipes A and B, operating simultaneously, can empty the pool in half the time that C, the 3rd pipe, alone takes to empty it. Pipe A, working alone, takes half the time taken by pipe B. Together they take 6 hours 40 minutes to empty the pool. Time taken by pipe A to empty the pool, in hours, is
a) 15   b) 10
c) 30   d) 7

89. Two workers A and B working together completed a job in 5 days. If A worked twice as efficiently as he actually did and B worked $\frac{1}{3}$ as efficiently as he actually did, the work would have been completed in 3 days. To complete the job alone, A would require
a) $5\frac{1}{5}$ days   b) $6\frac{1}{4}$ days
c) $7\frac{1}{2}$ days   d) $8\frac{3}{4}$ days

90. A boy and girl together fill a cistern with water. The boy pours 4 liters of water every 3 minutes and the girl pours 3 litres every 4 minutes. How much time will it take to fill 100 liters of water in the cistern?
a) 36 minutes   b) 42 minutes

c) 48 minutes   d) 44 minutes

91. Suman can do a work in 3 days. Sumant can do the same work in 2 days. Both of them finish the work together and get Rs.150. What is the share of Suman?
a) Rs.30   b) Rs.60
c) Rs.70   d) Rs.75

92. A and B undertook to do a piece of work for Rs.4500. A alone could do it in 8 days and B alone in 12 days. With the assistance of C they finished the work in 4 days. Then C's share of money is
a) Rs.2250   b) Rs.1500
c) Rs.750   d) Rs.375

93. A, B and C are employed to do a piece of work for Rs.5290. A and B together are supposed to do $\frac{19}{23}$ of the work and B and C together $\frac{8}{23}$ of the work. Then A should be paid
a) 4250   b) 3450
c) 1950   d) 2290

Variation based:

94. Jyothi can do $\frac{3}{4}$ th of a job in 12 days. Mala is twice as efficient as Jyothi. In how many days will Mala finish the job?
a) 6   b) 8
c) 12   d) 16

95. A does half as much work as B in three fourth of the time. If together they take 18 days to complete the work, how much time shall B alone take to do it?
a) 40 days   d) 45 days
c) 50 days   d) 30 days

96. 30 men can repair a road in 18 days. They are joined by 6 more workers. Now the road can be repaired in
a) 14 days   b) 15 days
c) 16 days   d) 17 days

97. 39 persons can repair a road in 12 days working 5 hours a day. In how many days will 30 persons working 6 hours a day complete the work?
a) 10   b) 13
c) 14   d) 15

98. If 10 men or 20 boys can make 260 mats in 20 days, then how many mats will be made by 8 men and 4 boys in 20 days?
a) 260   b) 240
c) 280   d) 520

99. If 72 men can build a wall of 280 m length in 21 days, how many men could take 18 days to build a similar wall of length 100 m?
a) 30   b) 10
c) 18   d) 28

100. A wall of 100 meters can be built by 7 men or 10 women in 10 days. How many days will 14 men and 20 women take to build a wall of 600 meters?
a) 15   b) 20
c) 25   d) 30

101. 10 men working 6 hours a day can complete a work in 18 days. How many hours a day must 15 men work to complete the same work in 12 days?
a) 6   b) 10
c) 12   d) 15

102. If p men working p hours per day for p days produce p units of work, then the units of work produced by n men working n hours a day for n days is
a) $\frac{p^2}{n^2}$ b) $\frac{p^3}{n^2}$
c) $\frac{n^2}{p^2}$ d) $\frac{n^3}{p^2}$

103. 28 men can complete $\frac{7}{8}$ of a piece of work in a week, then the number of men, who must be engaged to get the remaining work completed in another week, is
a) 5   b) 6
c) 4   d) 3

104. If the expenditure of gas on burning 6 burners for 6 hours a day for 8 days is Rs.450, then how many burners can be used for10 days at 5 hours a day for Rs.625?
a) 12   b) 16
c) 4   d) 8

Men × days based:

105. If x men can do a piece of work in x days, then the number of days in which y men can do the same work is
a) xy days   b) $\frac{y^2}{x}$ days
c) $\frac{x^2}{y}$ days   d) x^2y days

106. 8 man can do a work in 12 days. After 6 days of work, 4 more men engaged to finish the work. In how many days would the remaining work be completed?
a) 2   b) 3
c) 4   d) 5

107. 20 men can do a piece of work in 18 days. They worked together for 3 days, then 5 men joined them. In how many more days is the work completed?
a) 13   b) 14
c) 15   d) 12

108. 40 men can complete a work in 40 days. They started the work together. But at the end of each 10th day, 5 men left the job. The work would have been completed in

109. A certain number of persons can complete a piece of work in 55 days. If there were 6 persons more, the work could be completed in 11 days less. How many persons were originally there?
a) 17   b) 24
c) 30   d) 22

a) $56\frac{2}{3}$ days   b) $53\frac{1}{3}$ days
c) 52 days   d) 50 days

110. Some carpenters promised to do a job in 9 days but 5 of them were absent and remaining men did the job in 12 days. The original number of carpenters was
a) 24   b) 20
c) 16   d) 18

111. A man undertakes to do a certain work in 150 days. He employed 200 men. He finds that only a quarter of the work is done 50 days. The number of additional men that should be appointed so that the whole work be finished in time is:
a) 75   b) 100
c) 125   d) 50

112. A contactor undertook to finish a work in 92 days and employed 110 men. After 48 days, he found that he had already done $\frac{3}{5}$ part of the work, the number of men he can withdraw so that the work may still be finished in time is:
a) 45   b) 40
c) 35   d) 30

113. A contractor undertook to finish a certain work in 124 days and employed 120 men. After 64 days, he found that he had already done $\frac{2}{3}$ of the work. How many men can be discharged now so that the work may finish in time?
a) 48   b) 56
c) 40   d) 50

114. If 3 men or 6 women can do a piece of work in 16 days, in how many days can 12 men and 8 women do the same piece of work?
a) 4 days   b) 5 days
c) 3 days   d) 2 days

115. Either 8 men or 17 women can paint a house in 33 days. The number of days required to paint three such houses by 12 men and 24 women working at the same rate is:
a) 44   b) 43
c) 34   d) 66

116. If 10 men or 20 women or 40 children can do a piece of work in 7 months, then 5 men, 5 women and 5 children together can do half of the work in:

a) 6 month   b) 4 month
c) 5 month   d) 8 month

117. 5 men can do a piece of work in 6 days while 10 women can do it in 5 days. In how many days can 5 women and 5 women and 3 men do it?
a) 4   b) 5
c) 6   d) 8

118. A man, a women and a boy can complete a job in 3, 4 and 12 days respectively. How many boys must assist 1 man and 1 woman to complete the job in $\frac{1}{4}$ of a day?
a) 1   b) 4
c) 19   d) 41

119. 2 men and 1 women can complete a piece of work in 14 days while 4 women and 2 men can do the same work in 8 days. If a man gets Rs.180 per day, then a women will get per day
a) Rs.150   b) Rs.140
c) Rs.120   d) Rs.160

120. If 4 men or 6 women can do a piece of work in 12 days working 7 hours a day; how many days will it take to complete a work twice as large with 10 men and 3 women working together 8 hours a day?
a) 6   b) 7
c) 8   d) 10

121. If 6 men and 8 boys can do a piece of work in 10 days and 26 men and 48 boys can do the same in 2 days, the time taken by 15 men and 20 boys to do the same type of work will be:
a) 5 days   b) 4 days
c) 6 days   d) 7 days

122. 12 men and 18 boys working $7\frac{1}{2}$ hours a day, can do a piece of work in 60 days. If a man works equal to 2 boys, then how many boys will be required to help 21 men to do twice the work in 50 days, working 9 hours daily?
a) 21   b) 42
c) 28   d) none

Answer key:

1.c	2.b	3.c	4.b	5.b
6.c	7.b	8.a	9.d	10.a
11.a	12.c	13.c	14.d	15.a
16.b	17.a	18.d	19.b	20.b
21.a	22.d	23.c	24.b	25.a
26.d	27.b	28.b	29.c	30.b
31.b	32.a	33.c	34.c	35.d
36.b	37.b	38.d	39.a	40.b
41.c	42.b	43.b	44.a	45.b

46.c	47.c	48.b	49.b	50.a
51.b	52.d	53.c	54.a	55.a
56.b	57.b	58.c	59.a	60.d
61.c	62.c	63.a	64.b	65.c
66.b	67.c	68.b	69.b	70.d
71.a	72.b	73.a	74.d	75.c
76.c	77.a	78.c	79.c	80.c
81.a	82.a	83.c	84.c	85.c
86.b	87.b	88.a	89.b	90.c
91.b	92.c	93.b	94.b	95.d
96.b	97.b	98.a	99.a	100.a
101.a	102.b	103.c	104.d	105.c
106.c	107.d	108.a	109.b	110.b
111.b	112.d	113.b	114.c	115.c
116.d	117.b	118.d	119.c	120.b
121.b	122.b			

9. TIME AND DISTANCE

<u>Space for concepts and important points</u>

e1 coaching center

Scf-35, Kabir park, Amritsar

90567-03131

CLASS ASSIGNMENT

FORMULA BASED ($D = S \times T$)

1. Find the missing values:

DISTANCE	SPEED	TIME
200	50 km/h	?
?	30 km/h	2 h
?	50 km/h	3.5 h
240	?	15 h

2. A train is travelling at a speed of 45 km/h. How many seconds will it take to cover a distance of 800 m
   a) 36   b) 64
   c) 90   d) 120

3. A man crosses a road 250 meters wide in 75 seconds. His speed in km/h is:
   a) 10   b) 12
   c) 12.5   d) 15

4. An athlete runs 200 meter race in 24 seconds. His speed in km/h is:
   a) 20   b) 24
   c) 28.5   d) 30

5. A man rides at the rate of 10 km/h. But stops for 6 minutes to change horse after every 7th km. The time he will take to cover a distance of 70 km is:
   a) 8hrs   b) 8hrs. 54 min.
   c) 7hrs. 54min.   d) 9hrs

6. The distance between place A and B is 999km. An express train leaves place A at 6 am and runs at the speed of 55.5 km/h. The train stops on the way for 1 hour 20 min. It reaches B at:
   a) 1:20 am   b) 12 pm
   c) 6 pm   d) 11 pm

7. Three cars travelled distance in the ratio 1:2:3. If the ratio of the time of travel is 3:2:1, then the ratio of their speeds is
   a) 3:9:1   b) 1:3:9
   c) 1:2:4   d) 4:3:2

8. The ratio of lengths of two trains is 5:3 and the ratio of their speeds is 6:5. The ratio of times taken by them to cross a pole is
   a) 5:6   b) 11:8
   c) 25:18   d) 27:16

9. A car travelling at a speed of 40 km/h can complete a journey in 9 hr. How long will it take to travel the same distance at 60 km/h:
   a) 6   b) 3
   c) 4   d) 4.5

10. A car covers a distance of 528 km in a certain time at a speed of 66 km/h. How much distance would a truck cover at an average speed which is 24 km/h less than that of the car in time which is 7 hours more than that taken by car?

a) 336 km b) 682 km
c) 598 km c) 630 km
e) none of these

14. A train covers a distance between station A and station B in 45 min. If the speed of the train is reduced by 5kmph then the same distance is covered in 48 min. The distance between station A and B is
a) 60 km b) 64 km
c) 80 km d) 55 km

11. A plane left 30 minutes later than the scheduled time and in order to reach the destination 1500 km away in time, it increased the speed by 250 km/h from the usual speed. It's usual speed is:
a) 720 km/h b) 730 km/h
c) 750 km/h d) 740 km/h

15. A train running at 7/11 of its own speed reached a place in 22 hrs. How much time could be saved if the train would have run at its normal speed?
a) 14 b) 7
c) 8 d) 16

SPEED & TIME are inversely proportional

12. The speeds of A and B are in ratio 3:4. A takes 20 minutes more than B to reach a destination. In what time does a reach the destination?
a) $1\frac{1}{3}$ hour b) $2\frac{2}{3}$ hour
c) 2 hour d) $1\frac{2}{3}$ hour

16. A man with 3/5 of his usual speed reaches the destination 2.5 hours late. Find the usual time to reach the destination.
a) 4 b) 3
c) 3.75 d) 4.5

13. A car covers a certain distance in 4.5 hours. If the speed is increased by 5 km/h, it would take half hour less to cover the same distance. Find the slower speed of the car:
a) 50km/h b) 40km/h
c) 45km/h d) 60km/h

17. By walking at $\frac{3}{4}$ of his usual speed, a man reaches the office 20 min later than his usual time. Find his usual time to reach the office.
a) 37.5 min. b) 30 min.
c) 20 min. d) 60 min.

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at the same time he increases his speed by 1 km/h and reaches the school 6 min. late. How far is the school from his house?

a)2 km b)1.5 km
c)1 km d)1.75 km

18. A student rides on a bicycle at 8 km/h and reaches his school 2.5 min. late. The next day he increases his speed to 10 km/h and reaches school 5 min. early. How far is the school from his house?

a) 12 b) 8
c) 5 d) 10

$$Average\ speed = \frac{tatal\ dis.}{tatal\ time\ taken}$$

22. A boy rides his bicycle 10 km at an average speed of 5kmph and again travels 5 km at an average speed of 10kmph. his average speed for the entire journey

a)3.6 km/h b)4.5 km/h
c)4 km/h d)5 km/h

19. Shri X goes to his office by scooter at a speed of 30 km/h and reaches 6 min. earlier. If he goes at speed of 24 km/h, he reaches 5 min. late. The distance of his office is

a)20 km b)21 km
c)22 km d)24 km

23. A person travels 600 km by train at 80 km/h, 800 km by ship at 40kmph, 500 km by airplane at 400kmph and 100 km by car at 50kmph. What is the average speed for the entire journey?

a)$65\frac{5}{123}$km/h b)60km/h
c)$60\frac{5}{123}$km/h d)62km/h

20. If a student walks from his house to school at 5 km/h, he is late by 30 minutes. However if he walks at 6 km/h, he is late by 5 minutes only. The distance of his school from his house in kilometers is:

a) 2.5 b) 3.6
c) 5.5 d) 12.5

24. A train covers a distance of 3584 km in 2 days 8 hours, if it covers 1440 km on the 1st day and 1608 km on the 2nd day, by how much does the average speed of the train for the remaining part of the journey differ from that for the entire journey?

a)3km/h more b)3 km/h less

21. Starting from his house one day, a student walks at a speed of 2.5 km/h and reaches his school 18 min late. Next day

c)4km/h more   d)5 km/h less

28. A man goes from A to B at a uniform speed of 12 km/h and returns with a uniform speed of 4 km/h. His average speed for the whole journey is
a)8   b)7.5
c)6   d)4.5

25. A man completed a certain journey by car. If he covered 30% of the distance at the speed of 20 km/h, 60% of the distance at 40kmph and the remaining distance at 10kmph. His average speed of the whole journey was
a)25km/h   b)28km/h
c)30km/h   d)33km/h

29. A boy goes to his school from his house at the speed of 3 km/h and returns at a speed of 2 km/h. If he takes 5 hours in going and coming, the distance between his house and school is
a)6 km   b)5 km
c)5.5 km   d)6.5 km

26. One third of the journey is covered at the rate of 25 km/h, one-fourth at the rate of 30kmph and the rest at 50 km/h. The average speed of the whole journey is
a)35km/h   b)$33\frac{1}{3}$km/h
c)30km/h   d)$37\frac{1}{2}$km/h

30. A man travelled a certain distance by train at the rate of 25 km/h and walked back at the rate of 4 km/h. If the whole journey took 5 hours and 48 min. The distance was
a)25 km   b)30 km
c)20 km   d)15 km

27. A man covers half of his journey at 6 km/h and remaining half at 3 km/h. His average speed is
a)9km/h   b)4.5km/h
c)4km/h   d)3km/h

31. A man covered a certain distance at some speed. Had he moved 3kmph faster, he would have taken 40 min. less. If he had moved 2 km/h slower, he would have taken 40 min. more. The distance in km is
a)20   b)35
c)$36\frac{2}{3}$ d)40

has travelled 120 km more than the first train. The distance between A and B is
A) 990 km B) 1200 km
C) 1320 km D) 1440 km

RELATIVE SPEED

32. A constable follows a thief who is 200 m ahead of the constable. If the constable and the thief run at the speed of 8km/h and 7km/h respectively, the constable would catch the thief (in min)
A) 10 B) 12
C) 15 D) 20

36. From two places 60 km apart. A and B starts towards each other at the same time and meet each other after 6 hours. Had A travelled with 2/3 of his speed and B travelled with double of his speed, they would have met after 5 hours. The speed of A in km/h is:
A) 4 B) 6
C) 10 D) 12

33. A constable is 114 meter behind a thief. The constable runs 21 meters and the thief runs15 meters in a minute. In how many minutes the constable will catch the thief?
A) 19 B) 18
C) 17 D) 16

RELATIVE SPEED (TRAINS)

37. Find the time according to the following values

Train Length Meter	Train Speed Km/h	Object	Direction	Object Speed Km/h
300	54	Pole	----	----
450	90	Men	Same	36
250	144	Men	Opp.	36
150	126	Platform	200mtr	
175	90	Bridge	225mtr	

34. The distance between two cities A and B is 330 km. A train starts from A at 8 am and travels towards B at 60km/h. Another train starts from B at 9 am and travels towards A at 75km/h. At what time do they meet?
A) 10a.m B) 10:30a.m
C) 11a.m D) 11:30a.m

38. A 75 meter long train long is moving at 20 km/h. It will cross a man standing on the platform (in sec)
A) 12 B) 14
C) 13.5 D) 15.5

35. Two trains starts from station A and B and travel towards each other at speeds of 50 and 60 km/h respectively. At the time of their meeting the second train

39. A train is 125 m long. If the train takes 30 seconds to cross a tree by the railway line, then the speed of the train is (in km/h)
A) 14 B) 15
C) 16 D) 12

40. A 180 m long train takes 10 seconds to cross a man standing on a platform. What is the speed of the train (in km/h)?
A) 65.5 B) 64.8
C) 15 D) 20

41. A train 300 m long is running at a speed of 25 m/sec. It will cross a bridge of 200 m in ___ seconds.
A) 5 B) 10
C) 20 D) 25

42. A train 800 m long is running at the speed of 78km/h. If it crosses a tunnel in 1 minute, then the length of the tunnel is
A) 700 B) 500
C) 1300 D) 13

43. A moving train passes a platform 50 m long in 14 seconds and a lamp-post in 10 seconds. The speed of train is(in km/h)

A) 24 B) 36
C) 40 D) 45

44. A train travelling with uniform speed crosses two bridges of lengths 300 m and 240 m in 21 and 18 seconds respectively. The speed of the train in km/h is
A) 20 B)30
C)108 D)72

45. A train passes two bridges of lengths 800 m and 400 m in 100 seconds and 60 seconds respectively. The length of the train is(in meters)
A) 250 B) 300
C) 200 D) 150

46. A 150 m long train crosses a 500 m long bridge in 30 seconds. How many seconds will it take to cross a platform 370 m long?
A) 36 B) 30
C) 24 D) 18

47. The length of a train and a platform are equal. If with a speed of 90km/h the train crosses the platform in one minute, then the length of the train (in meters) is
A) 500 B)600

C) 750   D)900

51. A train 150 m long passes a pole in 15 sec and another train of same length travelling in opposite direction in 12 sec. The speed of second train (in km/h) is
A) 45   B) 48
C) 52   D) 54

48. A train travelling at 48kmph crosses another train, having half its length and travelling in opposite direction at 42km/h, in 12 seconds. It also passes a railway platform in 45 seconds. The length of the railway platform is
A)200   B)300
C)350   D)400

52. Buses start from a bus terminal with a speed of 20kmph at intervals of 10 min. What is the speed of a man coming from the opposite direction towards the bus terminal if he meets the buses at intervals of 8 minutes?
A) 3 km/h   B) 4 km/h
C) 5 km/h   D) 7 km/h

49. Two trains are running in opposite direction with the same speed. If the length of each train is 120 m and they cross each other in 12 sec, the speed of each train (in km/h) is
A) 72   B) 10
C) 36   D) 18

53. Two guns are fired from the same place at an interval of 6 min. A person approaching the place observes a time lapse of 5 min 52 sec in between the sounds of the two guns. If the velocity of the sound is 330 m/sec, the men was approaching that place at the speed of (in km/h)
A) 24   B) 27
C) 30   D) 36

50. Two trains are moving on two parallel tracks but in opposite directions. A person sitting in the train moving at the speed of 80 km/h passes the other train in 18 sec. If the length of the other train is 1000 m, then its speed (in km/h) is
A)100   B)120
C)140   D)150

TIME AFTER MEETING

54. Two trains started at the same time, one from A to B and the other from B to A. if they arrived at B and A respectively 4

hours and 9 hours after they passed each other, the ratio of the speeds of the train was

A) 2:1   B) 3:2
C) 4:3   D) 5:4

58. A boat goes 20 km downstream in one hour and the same distance upstream in two hours. The speed of the boat in still water is

A)10 km/h   B)15 km/h
C)5 km/h   D)7.5 km/h

55. Two trains A and B, starts from stations X and Y towards Y and X respectively. After passing each other, they take 4 hours 48 min and 3 hours 20 min to reach Y and x respectively. If train A is moving at the speed of 45km/h then the speed of train B (in km/h) is

A)60   B)64.8
C)54   D)37.5

59. A boat rows 1 km in 5 minutes, along the stream and 6 km in 1 hour against the stream. The speed of the stream is (in km/h)

A)3   B)6
C)10   D)12

RESULTANT SPEED

56. A man can swim 3km/hr. in still water. If the velocity of the stream is 2 km/hr., the time taken by him to swim to a place 10 km upstream and back is:

A) $9\frac{1}{3}$ B) 10
C) 12   D) $8\frac{1}{3}$

60. A man rows a boat 18 km in 4 hours downstream and returns upstream in 12 hours. The speed of the stream (in km/h) is:

A)1   B)1.5
C)2   D)1.75

57. A boat running downstream covers a distance of 20 km in 2 hours while it covers the same distance upstream in 5 hours. Then the speed of the boat in still water is

A)7 km/h   B)8 km/h
C)9 km/h   D)10 km/h

61. A man can row at a speed of 4.5 km/h in still water. If he takes 2 times as long to row a distance upstream as to row the same distance downstream, then the speed of the stream in km/h is:

A)1   B)1.5
C)2   D)2.5

km/h, then the speed in km/h of the boat in still water is
A)12 B)8
C)9 D)6

62. A person can row 7.5 km in an hour in still water. He finds that it takes twice the time to row upstream than the time to row downstream. The speed of the stream is (in km/h):
A)2 B)4
C)3 D)2.5

63. A boat goes 6 km/h in still water, but takes thrice as much time in going the same distance against the current. The speed of the current (in km/h) is:
A)4 B)5
C)3 D)2

64. In a fixed time, a boy swims double the distance along the current that he swims against the current. If the speed of the current is 3 km/h, the speed of the boy in still water is
A)6 km/h B)9 km/h
C)10 km/h D)12 km/h

65. A boat goes 12 km downstream and comes back to the starting point in 3 hours. If the speed of the current is 3

66. A man can row 6 km/h in still water. If the speed of the current is 2 km/h, it takes 3 hours more in upstream than in the downstream for the same distance. The distance is:
A)30 km B)24 km
C)20 km D)32 km

67. Two boats A and B start towards each other from two places, 108 km apart. Speeds of the boats A and B in still water are 12 km/h and 15 km/h respectively. If A proceeds down and B up the stream, they will meet after.
A)4 h B)4.5 h
C)5.4 h D)6 h

68. The speed of a motor boat to that of the current of the water is 36:5. The boat goes along with the current in 5 hours 10 minutes. It will come back in
A)5 hrs 50 min
B)6 hrs
C)6 hrs 50 min
D)12 hrs 10 min

if AB is 100 meters, the speed of current (in km/h) is

A) 0.4 B) 0.2
C) 1 D) 0.6

69. A man can row at 5 km/h in still water. If the velocity of the current is 1 km/h. and it takes him 1 hour to row to a place and come back, how far is the place?
A) 2.5 km B) 3 km
C) 3.6 km D) 2.4 km

70. A man goes downstream with a boat to some destination and returns upstream to the original place in 5 hours. If the speed of the boat in still water and the stream are 10 km/h and 4 km/h respectively, the distance of the destination from the starting place is
A) 21 B) 24
C) 14 D) 42

71. A boat covers 12 km upstream and 18 km downstream in 3 hours, while it covers 36 km upstream and 24 km downstream in 6.5 hours. What is the speed of the current?
A) 1.5 km/h B) 1 km/h
C) 2 km/h D) 2.5 km/h

72. A swimmer swims from a point A against a current for 5 minutes and swims backward in favor of the current for next 5 minutes and comes to point B.

HOME ASSIGNMENT

73. Find the missing values:

DISTANCE	SPEED	TIME
625	125 km/h	?
?	70 km/h	2.5 h
?	80 km/h	6 h
210	?	15 h

74. A car goes 10 meter in a second. Find its speed in km/h.
a) 40 b) 32
c) 48 d) 36

75. An airplane covers a certain distance at a speed of 240 km per hour in 5 hours. To cover the same distance in $1\frac{2}{3}$ hours, it must travel at a speed of:
a) 300 km/h b) 360 km/h
c) 600 km/h d) 720 km/h

76. A man walking at the rate of 5 km/h crosses a bridge in 15 minutes. The length of the bridge (in meters) is:
a) 600 b) 750
c) 1000 d) 1250

77. A man walks a km in b hours. The time taken to walk 200 meters is
a) $\frac{200b}{a}$ hours b) $\frac{b}{5a}$ hours
c) $\frac{b}{a}$ hours d) $\frac{ab}{200}$ hours

78. A boy runs 20 km in 2.5 hours. How long will he take to run 32 km at double the previous speed?
a) 2 hours b) $2\frac{1}{2}$ hours
c) $4\frac{1}{2}$ hours d) 5 hours

79. A gun is fired on board a ship at sea and an echo is heard from a cliff after the lapse of 9.6 sec. The velocity of sound is 1100 ft/sec. The distance of cliff from the ship is
a) 1056 feet b) 5280 feet
c) 10560 feet d) 21120 feet

80. If a train runs at 40 km/h, it reaches its destination late by 11 minutes. But if it runs at the rate of 50 km/h, it is late by 5

minutes only. The correct time for the train to complete the journey is
a) 13 b) 15
c) 19 c) 21

81. Walking at three-fourth of his usual speed, a man covers a certain distance in 2 hours more than the time he takes to cover the distance at his usual speed. The time taken by him to cover the distance with his usual speed is
a) 4.5 hours b) 5.5 hours
c) 6 hours d) 5 hours

82. A and B travel the same distance at speeds of 9 km/h and 10 km/h respectively. If A takes 36 minutes more than B, the distance travelled by each is
a) 48 km b) 54 km
c) 60 km d) 66 km

83. Two men start together to walk a certain distance, one at 4 km/h and another at 3 km/h. The former arrives half an hour before the latter. Find the distance.
a) 8 km b) 7 km
c) 6 km d) 9 km

84. A certain distance is covered by a cyclist at a certain speed. If a jogger covers half the distance in double the time, the ratio of the speed of the jogger to that of the cyclist is
a) 1:4 b) 4:1
c) 1:2 d) 2:1

85. A train passes two persons walking in the same direction at a speed of 3 km/h and 5 km/h respectively in 10 seconds and 11 seconds respectively. The speed of the train is
a) 28 km/h b) 27 km/h
c) 25 km/h d) 24 km/h

86. Ravi and Ajay start simultaneously from a place A towards B, 60 km apart. Ravi's speed is 4 km/h less than that of Ajay. Ajay, after reaching B, turns back and meets Ravi at a place 12 km away from B. Ravi's speed is
a) 12 km/h b) 10 km/h
c) 8 km/h d) 6 km/h

87. A man can reach a certain place in 30 hours. If he reduces his speed by $\frac{1}{15}$th, he goes 10 km less in that time. Find his speed per hour.
a) 6 km/h b) $5\frac{1}{2}$ km/h
c) 4 km/h d) 5 km/h

88. A person started his journey in the morning. At 11 a.m. he covered $\frac{3}{8}$ of the journey and on the same day at 4:30

p.m. he covered $\frac{5}{6}$ of the journey. He started his journey at
a) 6:00 a.m. b) 3:00 a.m.
c) 7:00 a.m. d) 6:30 a.m.

89. In covering a distance of 30 km, Abhay takes 2 hours more than Sameer. If Abhay doubles his speed, then he would take 1 hour less than Sameer. Abhay's speed (in km/h) is
a) 5 b) 6
c) 6.25 d) 7.5

90. A runs twice as fast as B and B runs thrice as fast as C. The distance covered by C in 72 minutes, will be covered by A in:
a) 18 minutes b) 24 minutes
c) 16 minutes d) 12 minutes

91. In a race of 1000 m, A can beat B by 100 m. In a race of 400 m, B beats C by 40 m. In a race of 500 m. A will beat C by
a) 95 m b) 50 m
c) 45 m d) 60 m

92. In a 1 km race A, B and C are three participant. A can give B a start of 50 m and C a start of 69 m. The start which B can allow C is
a) 17 m b) 20 m
c) 19 m d) 18 m

93. In a 100 m race, Kamal defeats Bimal by 5 seconds. If the speed of Kamal is 18 km/h, then the speed of Bimal is
a) 15.4 km/h b) 14.5 km/h
c) 14.4 km/h d) 14 km/h

94. In a kilometer race, A beats B by 30 seconds and B beats C by 15 seconds. If A beats C by 180 meters, the time taken by A to run 1 kilometer is
a) 250 seconds
b) 205 seconds
c) 200 seconds
d) 210 seconds

95. I walk a certain distance and ride back taking a total time of 37 minutes. I could walk both ways in 55 minutes. How long would it take me to ride both ways?
a) 9.5 minutes b) 19 minutes
c) 18 minutes d) 20 minutes

96. A car completes a journey in 10 hours. If it covers half of the journey at 40 km/h and the remaining half at 60 km/h, the distance covered by car is
a) 400 km b) 480
c) 380 km d) 300

97. A boy rides his bicycle 10 km at an average speed of 12 km/h and again travels 12 km at an average speed of 10

km/h. His average speed for the entire trip is approximately:
a) 10.4 km/h   b) 10.8 km/h
c) 11.0 km/h   d) 12.2 km/h

98. A man travels a distance of 24 km at 6 km/h, another 24 km at 8 km/h and a third distance of 24 km at 12 km/h. His average speed for the whole journey is
a) $8\frac{2}{3}$ b) 8
c) $2\frac{10}{13}$ d) 9

99. A constant distance from Chennai to Banglore is covered by Express train at 100 km/h. If it returns to same distance at 80 km/h, then the average speed during the whole journey is
a) 90.20 km/h   b) 88.78 km/h
c) 8.98 km/h   d) 88.89 km/h

100. On a journey across Kolkata, a taxi averages 50 km/h for 50% of the distance, 40 km/h for 40% of it and 20 km/h for the remaining. The average speed, in km/h, for the whole journey is:
a) 42   b) 40
c) 35   d) 45

101. A bus covers four successive 3 km stretches at the speeds of 10 km/h, 20 km/h, 30 km/h and 60 km/h respectively. Its average speed over this distance is
a) 30 km/h   b) 25 km/h
c) 20 km/h   d) 10 km/h

102. Two men are standing on opposite ends of a bridge 1200 meters long. If they walk towards each other at the rate of 5 m/minute and 10 m/minute respectively, in how much time will they meet each other?
a) 60 minutes   b) 80 minutes
c) 85 minutes   d) 90 minutes

103. Two towns A and B are 500 km apart. A train starts at 8 am from A towards B at a speed of 70 km/h. At 10 am, another train starts from B towards A at a speed of 110 km/h. When will the two trains meet?
a) 1 pm   b) 12 noon
c) 12:30 pm   d) 1:30 pm

104. Two trains start from station A and B and travel towards each other at speeds of 16 miles/hour and 21 miles/hour respectively. At the time of their meeting, the seconds train has travelled 60 miles more than the first. The distance between A and B (in miles) is:
a) 444   b) 496
c) 333   d) 540

105. A policeman goes after a thief who has 100 meter start, if the policemen runs a kilometer in 8 min, and the thief a km in 10 min, the distance covered by thief before he is over-powered is
a) 350 m   b) 400 m
c) 320 m   d) 420 m

106. A boy started from his house by bicycle at 10 a.m. at a speed of 12 km per hour. His elder brother started after 1 hour 15 minutes by scooter along the same path and caught him at 1:30 p.m. The speed of the scooter will be (in km/h):
a) 4.5   b) 36
c) $18\frac{2}{3}$ d) 9

107. Points 'A' and 'B' are 70 km apart on a highway. A car starts from 'A' and another from 'B' at the same time. If they travel in the same direction, they meet in 7 hours, but if they travel towards each-other, they meet in one hour. Find the speed of the two cars (in km/h)
a) 20,30   b) 40,30
c) 30,50   d) 20,40

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

109. A and B run a 5 km race on a round course of 400 m. If their speeds are in ratio 5:4, the number of times, the winner passes the other, is
a) 1   b) 2
c) 3   d) 5

110. A, B, C walk 1 km in 5 minutes, 8 minutes and 10 minutes respectively. C starts walking from a point, at a certain time. B starts from the same point 1 minute later and A starts from same point 2 minutes later than C. Then A meets B and C at times.
a) 5/3 min, 2 min
b) 1 min, 2 min
c) 2 min, 3 min
d) 4/3 min, 3 min

111. A train is 125 m long. If the train takes 30 seconds to cross a tree by the railway line, then the speed of the train is:
a) 14 km/h   b) 15 km/h
c) 16 km/h   d) 12 km/h

112. A 120 meter long train is running at a speed of 90 km/h. It will cross a railway platform 230 m long in:

a) $4\frac{4}{5}$ seconds   b) $9\frac{1}{5}$ seconds

c) 7 seconds   d) 14 seconds

113. A train, 110 m long, is running at a speed of 60 km/h. How many seconds does it takes to cross another train, 170 m long, standing on a parallel track?
a) 15.6   b) 16.8
c) 17.2   d) 18

114. A train is moving at a speed of 132 km/h. If the length of the train is 110 meters, how long will it take to cross a railway platform 165 meters long?
a) 5 seconds   b) 7.5 seconds
c) 10 seconds   d) 15 seconds

115. A train traveling at a speed of 30m/sec crosses a platform, 600 meter long, in 30 seconds. The length (in meters) of train is
a) 120   b) 150
c) 200   d) 300

116. How many seconds will a 500 meter long train take to cross a man walking with a speed of 3 km/h in the direction of the moving train if the speed of the train is 63 km/h?
a) 25   b) 30
c) 40   d) 45

117. A train 100 m long meets a man going in opposite direction at 5 km/h and passes him in $7\frac{1}{5}$ seconds. What is the speed of the train in km/h?
a) 45 km/h   b) 60 km/h
c) 55 km/h   d) 50 km/h

118. A train takes 18 seconds to pass through a platform 162 m long and 15 seconds to pass through another platform 120 m long. The length of the train is
a) 70   b) 80
c) 90   d) 105

119. A train with a uniform speed passes a platform, 122 meters long, in 17 seconds and a bridge, 210 meters long, in 25 seconds. The speed of train is
a) 46.5 km/h   b) 37.5 km/h
c) 37.6 km/h   d) 39.6 km/h

120. A train passes a platform 90 meter long in 30 seconds and a man standing on the platform in 15 seconds. The speed of the train is:
a) 12.4 km/h   b) 14.6 km/h
c) 18.4 km/h   d) 21.6 km/h

121. A train passes a man standing on a platform in 8 seconds and also crosses the platform which is 264 meters long in 20 seconds. The length of the train (in meters) is:
a) 188   b) 176

c) 175   d) 96

122. Two trains one 160 m and the other 140 m long are running in opposite directions on parallel rails, the first at 77 km/h and the other at 67 km/h. How long will they take to cross each other?
a) 7 seconds   b) $7\frac{1}{2}$ seconds
c) 6 seconds   d) 10 seconds

123. Two trains, each of length 125 meter, are running in parallel tracks in opposite directions. One train is running at a speed of 65 km/h and they cross each other in 6 seconds. The speed of the other train is
a) 75 km/h   b) 85 km/h
c) 95 km/h   d) 105 km/h

124. Two rains of equal length take 10 seconds and 15 seconds respectively to cross a telegraph post. If the length of each train be 120 meters, in what time (in seconds) will they cross each other travelling in opposite direction?
a) 16   b) 15
c) 12   d) 10

125. Two trains are running with speeds 30 km/h and 58 km/h in the same direction. A man in the faster train passes the slower train in 18 seconds. The length (in meters) of the slower trains is:
a) 70   b) 100
c) 128   d) 140

126. A man standing on a platform finds that a train takes 3 seconds to pass him and another train of same length moving in the opposite direction, takes 4 seconds. The time taken by the trains to pass each other will be
a) $2\frac{3}{7}$ seconds   b) $3\frac{3}{7}$ seconds
c) $4\frac{3}{7}$ seconds   d) $5\frac{3}{7}$ seconds

127. A boy can swim in still water at a speed of 10 km/h. If the speed the current would have been 5 km/h, then the boy could swim 60 km
a) upstream in 4 hours
b) downstream in 12 hours
c) upstream in 6 hours
d) downstream in 4 hours

128. A man rows 40 km upstream in 8 hours and a distance of 36 km downstream in 6 hours. Then speed of stream is
a) 0.5 km/h   b) 1.5 km/h
c) 1 km/h   d) 3 km/h

129. A person can row a distance of one km upstream in ten minutes and downstream in four minutes. What is the speed of the stream?
a) 4.5 km/h   b) 4 km/h

c) 9 km/h   d) 5.6 km/h

130. The speed of a boat along the stream is 12 km/h and against the stream is 8 km/h. The time taken by the boat to sail 24 km in still water is
a) 2 hours   b) 3 hours
c) 2.4 hours   d) 1.2 hours

131. A boat travels 24 km upstream in 6 hours and 20 km downstream in 4 hours. Then the speed of boat in still water and the speed of water current are respectively
a) 4 km/h and 3km/h
b) 4.5 km/h and 0.5 km/h
c) 4 km/h and 2 km/h
d) 5 km/h and 2 km/h

132. The speed of a boat in still water is 10 km/h. It covers upstream a distance of 45 km in 6 hours. The speed (in km/h) of the stream is
a) 2.5   b) 3
c) 3.5   d) 4

133. A motorboat in still water travels at a speed of 36 km/h. It goes 56 km upstream in 1 hour 45 minutes. The time taken by it to cover the same distance downstream will be:
a) 2 hours 45 minutes
b) 3 hours
c) 1 hour 24 minutes
d) 2 hours 21 minutes

134. The current of a stream runs at the rate of 4 km an hour. A boat goes 6 km and comes back to the starting point in 2 hours. The speed of the boat in still water is
a) 6 km/h   b) 8 km/h
c) 7.5 km/h   d) 6.8 km/h

135. The speed of the current is 5 km/h. A motorboat goes 10 km upstream and back again to the starting point in 50 minutes. The speed, in km/h, of the motorboat in still water is
a) 20   b) 26
c) 25   d) 28

136. A man can row 30 km downstream and return in a total of 8 hours. If the speed of the boat in still water is four times the speed of the current, then the speed of the current is
a) 1 km/h   b) 2 km/h
c) 4km/h   d) 3 km/h

137. Speed of a boat is 5 km/h in still water and the speed of the stream is 3 km/h. If the boat take 3 hours to go to a place and came back, the distance of the place is

a) 3.75   b) 4
c) 4.8   d) 4.25

138. A boat covers 24 km upstream and 36 km downstream in 6 hours, while it covers 36 km upstream and 24 km downstream in $6\frac{1}{2}$ hours. The speed of the current is
a) 1 km/h   b) 2 km/h
c) 1.5 km/h   d) 2.5 km/h

Answer key:

1.a.4	b.60	c.175	d.16	2.b
3.b	4.d	5.c	6.a	7.b
8.c	9.a	10.c	11.c	12.a
13.b	14.a	15.c	16.c	17.d
18.c	19.c	20.d	21.d	22.c
23.a	24.a	25.a	26.b	27.c
28.c	29.a	30.c	31.d	32.b
33.a	34.c	35.c	36.b	37.a.20
b.30	c.5	d.10	e.16	38.c
39.b	40.b	41.c	42.b	43.d
44.d	45.c	46.c	47.c	48.d
49.c	50.b	51.d	52.c	53.b
54.b	55.c	56.c	57.a	58.b
59.a	60.b	61.b	62.d	63.c
64.b	65.c	66.b	67.a	68.c
69.d	70.a	71.c	72.d	73.a.5
b.175	c.480	d.14	74.d	75.d
76.d	77.b	78.a	79.b	80.c
81.c	82.b	83.c	84.a	85.c
86.c	87.d	88.d	89.a	90.d
91.a	92.b	93.c	94.b	95.b
96.b	97.b	98.b	99.d	100.b
101.c	102.b	103.b	104.a	105.b
106.c	107.b	108.b	109.b	110.a
111.b	112.d	113.b	114.b	115.d
116.b	117.c	118.c	119.d	120.d
121.b	122.b	123.b	124.c	125.d
126.b	127.d	128.a	129.a	130.c
131.b	132.a	133.c	134.b	135.c
136.b	137.c	138.b		

10. NUMBER SYSTEM

Space for concepts and important points

CLASS ASSIGNMENT

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

2. If a & b are two odd positive integers then by which of the following integers is $(a^4 - b^4)$ always divisible?
   a) 3   b) 6
   c) 8   d) 12

3. Convert the following decimal values in fractions
   a) 0.4747…….
   b) 0.5353……..
   c) 0.512512…….
   d) 0.4232323………
   e) 0.5271271271……….
   f) 4.7121212……….

4. Find the total no of factors of 180.
   a) 4   b) 18
   c) 8   d) 9

5. Find the total no. of even factors of 120.
   a) 12   b) 16

   c) 8   d) 18

6. How many odd factors do 540 have?
   a) 20   b) 8
   c) 12   d) 4

7. The total number of prime factors of 420 are
   a) 24   b) 5
   c) 4   d) 2

8. How many factors of 480 are composite?
   a) 3   b) 24
   c) 21   d) 20

9. 360 have 'x' factors, which are divisible by 4. Find the value of 'x'.
   a) 12   b) 6
   c) 18   d) 9

10. Find the smallest number which gives a perfect square when multiplied by 392.
    a) 7   b) 2
    c) 4   d) 14

15. If x,p $\in$ I and x>p, then find the smallest value of x such that $\frac{70!}{5^p}$ is an integer.
    a) 16   b) 17
    c) 18   d) 19

11. By what smallest no. should we divide 2800 to make it a perfect square?
    a) 2   b) 4
    c) 7   d) 9

16. If $\frac{150!}{15^x}$ is an integral value, then find the maximum value that x can have.
    a) 37   b) 10
    c) 11   d) 72

12. By which smallest number 1323 must be multiplied, so that it becomes a perfect cube?
    a) 9   b) 3
    c) 21   d) 7

17. Find the total no of zeroes after the right most non-zero digit in 100!.
    a) 9   b) 10
    c) 24   d) 25

13. The smallest natural number by which 5145 must be divided to make the quotient a perfect cube is
    a) 15   b) 3
    c) 5   d) 7

18. If 5432*7 is divisible by 9. Find *.
    a) 0   b) 1
    c) 9   d) 6

14. What can be the maximum value of p so that $\frac{30!}{2^p}$ is an integer?
    a) 25   b) 15
    c) 26   d) 30

19. Which one of the following is the value of * if 78*3945 is divisible by 11?
a) 1   b) 0
c) 3   d) 5

20. Which of the following is divisible by 25?
a) 303310   b) 373355
c) 303375   d) 22040

21. A number is formed by writing the 1st 35 natural numbers side by side. Find the remainder when it is divided by 4.
a) 1   b) 2
c) 3   d) none

22. A 50 digit number is formed by writing natural numbers side by side starting from 1. Find the remainder when this number is divided by 8.
a) 3   b) 4
c) 5   d) 6

23. A six-digit number is formed by repeating a three-digit number for example 369369 is formed by repeating 369. Any number of this form is divisible by which of the following:
a) 7 only   b) 11 only
c) 13 only   d) 1001

24. $4^{61} + 4^{62} + 4^{63} + 4^{64}$ is divisible by
a) 3   b) 10
c) 11   d) 13

25. $3^{25} + 3^{26} + 3^{27} + 3^{28}$ is divisible by
a) 11   b) 16
c) 25   d) 30

26. $5^{71} + 5^{72} + 5^{73}$ is divisible by
a) 150   b) 160
c) 155   d) 30

27. $49^{15} - 1$ is exactly divisible by
a) 50   b) 51
c) 29   d) 8

28. Find the unit digit of 9!.
   a) 9   b) 0
   c) 2   d) 8

29. What will be unit digit of 7^{105}?
   a) 1   b) 3
   c) 9   d) 7

30. The unit of 2153^{167} is
   a) 3   b) 9
   c) 7   d) 1

31. Find the unit digit of $264^{102} + 264^{103}$
   a) 0   b) 2
   c) 4   d) 6

32. Unit digit of $2169^{1793} \times 615^{317} \times 132^{491}$ is
   a) 5   b) 0
   c) 8   d) 9

33. When two numbers are separately divided by 33, the remainders are 21 and 28 respectively, if the sum of two numbers is divided by 33, the remainder will be
   a) 16   b) 7
   c) 49   d) can't say

34. Find the remainder when (1007+1008+1009+1010) is divided by 6.
   a) 0   b) 1
   c) 2   d) 3

35. If $218 \times 219 \times 220 \times 221$ is divided by 7 the remainder is
   a) 0   b) 1
   c) 2   d) 3

36. A number being divided by 52 gives a remainder 45. If the number is divided by 13, the remainder will be?
   a) 0   b) 9
   c) 6   d) 7

37. A number gives a remainder 75 on dividing by 296. What is the remainder if the same number is divided by 37?
a) 0 b) 1
c) 2 d) 3

38. A number when successively divided by 3 and 2 leaves remainder 1 in both cases. What will be the remainder when the number will be divided by 6?
a) 3 b) 4
c) 5 d) can't say

39. A number when successively divided by 4 and 5 leaves a remainder 1 and 4 respectively. When it is successively divided by 5 and 4 the respective remainders would be.
a) 2 and 3 b) 3 and 2
c) 4 and 1 d) can't say

Find the remainder when 'A' is divided by 'B'

40. $A=3^{21}$ B=5
a) 1 b) 2
c) 3 d) 4

41. $A=48^{978}$ B=13
a) 1 b) 3
c) 6 d) 9

42. $A=237^{237}$ B=8
a) 1 b) 5
c) 4 d) 6

43. $A=17^{2015}$ B=5
a) 1 b) 2
c) 3 d) 4

44. $A=2015^{2015}$ B=7
a) 1 b) 6
c) 3 d) 5

45. $A=17^{136}$ B=18
a) 1 b) 7
c) 8 d) 17

46. $A = 7^{19} + 49^{19}$ $B = 6$
   a) 1   b) 2
   c) 3   d) 0

HOME ASSIGNMENT

47. How many natural numbers divisible by 7 are there between 3 and 200?
   a) 27   b) 28
   c) 29   d) 36

48. The number of integers in between 100 and 600, which are divisible by 4 and 6 both, is
   a) 40   b) 42
   c) 41   d) 50

49. If $[n]$ denotes the greatest integer $< n$ and (n) denotes the smallest integer $> n$ where n is any real number, then $\left(1\frac{1}{5}\right) \times \left[1\frac{1}{5}\right] - \left(1\frac{1}{5}\right) \div \left[1\frac{1}{5}\right] + (1.5)$ is
   a) 1.5   b) 2
   c) 2.5   d) 3.5

50. 1.2727…. in the form $\frac{p}{q}$ is equal to
   a) $\frac{127}{100}$ b) $\frac{73}{100}$
   c) $\frac{14}{11}$ d) $\frac{11}{14}$

51. 0.123123……. is equal to:
   a) $\frac{14}{333}$ b) $\frac{41}{333}$
   c) $\frac{123}{1000}$ d) $\frac{441}{333}$

52. The difference of 5.767676….. and 2.3333…… is
   a) 2.5454….   b) 3.7373….
   c) 3.4646….   d) 3.4343….

53. The value of $(0.6363…. + 0.3737….)$ is equal to
   a) 1   b) $\frac{100}{99}$
   c) $\frac{99}{100}$ d) $\frac{100}{33}$

54. Find the total no of factors of 380.
   a) 4   b) 12
   c) 8   d) 9

55. Find the total no. of even factors of 120.
   a) 12   b) 16
   c) 8   d) 18

56. How many odd factors do 360 have?
   a) 20   b) 8
   c) 6   d) 4

57. The total number of prime factors of 315 are
   a) 4   b) 12
   c) 3   d) 2

58. The number 323 has
   a) three prime factors
   b) five prime factors
   c) two prime factors
   d) no prime factors

59. 360 have 'x' factors, which are divisible by 12. Find the value of 'x'.
   a) 12   b) 9
   c) 8   d) 24

60. There are 50 boxes and 50 persons. Person 1 keeps one marble in every box. Person 2 keeps 2 marbles in every second box, person 3 keeps 3 marbles in every third box. This process goes on till person 50 keeps 50 marbles in 50th box. Find the total number of marbles kept in the 50th box.
   a) 43   b) 78
   c) 6   d) 93

61. 1008 divided by which single digit number gives a perfect square?
   a) 9   b) 4
   c) 8   d) 7

62. By which smallest number should 5808 be multiplied so that it becomes a perfect square?
   a) 2   b) 7
   c) 11   d) 3

63. By what smallest no. should we divide 6300 to make it a perfect square?
   a) 2   b) 4
   c) 7   d) 9

64. What is the smallest number by which 4320 be divided to make it a perfect cube?
   a) 15   b) 20
   c) 24   d) 25

65. The number $25^{64} \times 64^{25}$ is the square of a natural number n. The sum of digits of n is
   a) 7   b) 14
   c) 21   d) 28

66. Find the total no of zeroes after the right most non-zero digit in 120!.
   a) 12   b) 10
   c) 24   d) 28

67. Numbers 2, 4, 6, 8, 10,……………196, 198, 200 are multiplied together. The number of zeroes at the end of the product on the right will be equal to-
   a) 21   b) 22
   c) 24   d) 25

68. The numbers 1, 3, 5, 7.........99 and 128 are multiplied together. The number of zeroes at the end of the product must be:
a) 19   b) 22
c) 7   d) NIL

69. If the number formed by last two digits of a three digits integer is an integral multiple of 6, the original integer itself will always be divisible by
a) 6   b) 3
c) 2   d) 12

70. The smallest number that must be added to 803642 in order to obtain a multiple of 11 is
a) 1   b) 4
c) 7   d) 9

71. Which of the following numbers is exactly divisible by 99?
a) 114345   b) 135792
c) 3572404   d) 913464

72. When 335 is added to 5A7, the result is 8B2. 8B2 is divisible by 3. What is the largest possible value of A?
a) 8   b) 2
c) 1   d) 4

73. The six-digit number 5ABB7A is a multiple of 33 for digits A and B. Which of the following could be possible value of A+B?
a) 8   b) 9
c) 10   d) 14

74. I multiplied a natural number by 18 and another by 21 and added the products. Which one of the following could be the sum?
a) 2007   b) 2008
c) 2006   d) 2002

75. The first 44 positive integers are written in an order to form a larger number
$N = 1234567891011 ... ... 4344$
when N is divided by 45, then the remainder is
a) 5   b) 7
c) 9   d) 11

76. A six digit number is formed by repeating a three digit number for example 369369 is formed by repeating 369. Any number of this form is divisible by which of the following:
a) 7 only   b) 11 only
c) 13 only   d) 1001

77. $7,77,77,777 \div 77$ equals
a) 1111   b) 101001
c) 10101   d) 1010101

78. The expression $2^{6n} - 4^{2n}$, where n is a natural number is always divisible by
a) 15   b) 18

c) 36   d) 48

79. If $(2^{36} - 1) = 68a19476735$, where a is any digit, then the least possible value of a is
a) 1   b) 3
c) 5   d) 7

80. The difference between a two digit number and the number obtained by interchanging the positions of its digits is 36. What is the difference between the two digits of that number?
a) 4   b) 9
c) 3   d) can't say
e) None of these

81. If the positions of two digits of a two digit number are interchanged, the number obtained is smaller than the original number by 27. If the digits of the number are in the ratio of 1:2, what is the original number?
a) 36   b) 63
c) 48   d) can't say
e) None of these

82. The sum of digits of a two digit number is 10. The number formed by reversing the digits is 18 less than the original number. Find the original number.
a) 81   b) 46
c) 64   d) 60

83. In a two digit positive number, the digit in the unit's place is equal to the square of the digit in the ten's place, and the difference between the number and the number obtained by interchanging the digits is 54. What is 40% of the original number?
a) 15.6   b) 39
c) 37.2   c) 24
e) None of these

84. A 2-digit number is three times the sum of its digits. If 45 is added to the number, it's digits are interchanged. The sum of digits of the number is
a) 11   b) 9
c) 7   d) 5

85. A two digit number is five times the sum of its digits. If 9 is added to the number, the digits interchange their positions. The sum of digits of the number is:
a) 11   b) 9
c) 7   d) 6

86. In a two digit number the digit at the unit's place is 1 less than twice the digit at ten's place. If the digits at unit's and ten's place are interchanged, the difference between the new and the

original number is less than the original number by 20. The original number is
a) 59   b) 23
c) 35   d) 47

87. If the digits in the unit's and ten's places of a three digit number are interchanged, a new number is formed, which is greater than the original number by 63. Suppose the digit in the unit place of the original number be x. Then, all the possible values of x are
a) 7, 8, 9   b) 2, 7, 9
c) 0, 1, 2   d) 1, 2, 8

88. A certain number of two digits is three times the sum of its digits. If 45 be added to it, the digits are reversed. The number is
a) 72   b) 32
c) 27   d) 23

89. A number consists of two digits and the digit in ten's place exceeds that in unit's place by 5. If 5 times the sum of the digits be subtracted from the number, the digits of the number are reversed. Then the sum of the digits of the number is.
a) 11   b) 7
c) 9   d) 13

90. Let d be a two digit number. If half of d exceeds one third of d by the sum of digits in, d, then the sum of digits in d is
a) 6   b) 8
c) 9   d) 15

91. In a three digit number the digit at the hundreds place is two times the digit at the units place and the sum of the digits is 18. If the digits are reversed, the number is reduced by 396. The difference of the hundreds and tens digit of the number is
a) 1   b) 2
c) 3   d) 5

92. A number consists of two digits. If the number formed by interchanging the digits is added to the original number, the resulting number must be divisible by
a) 11   b) 9
c) 5   d) 3

93. The sum of two digit number and the number obtained by reversing its digits is a square number. How many such numbers are there?
a) 5   b) 6
c) 7   d) 8

94. Find the unit digit of 13!.
a) 9   b) 0
c) 2   d) 8

95. What will be unit digit of 937^{105}?
a) 1   b) 3
c) 9   d) 7

96. The unit of 2158^{167} is
a) 8   b) 4
c) 2   d) 6

97. The unit digit of the expression $25^{6251} + 36^{528} + 73^{54}$ is
a) 6   b) 5
c) 4   d) 0

98. The unit's digit in the product $7^{71} \times 6^{63} \times 3^{65}$ is
a) 1   b) 2
c) 3   d) 4

99. What least number would be subtracted from 427398 so that the remaining number is divisible by 15?
a) 6   b) 3
c) 16   d) 11
e) None of these

100. The smallest number to be added to 1000, so that 45 divides the sum exactly, is:
a) 35   b) 80
c) 20   d) 10

101. The smallest number of five digits exactly divisible by 476 is
a) 47600   b) 10000
c) 10476   d) 10472

102. The least number of five digits which has 123 as a factor is
a) 10037   b) 10086
c) 10081   d) 10063

103. Two numbers, when divided by 17, leave remainders 13 and 11 respectively. If the sum of those two numbers is divided by 17, the remainder will be
a) 13   b) 11
c) 7   d) 4

104. A positive integer when divided by 425 gives a remainder 45. When the same number is divided by 17, the remainder will be
a) 11   b) 8
c) 9   d) 10

105. A number x when divided by 289 leaves 18 as the remainder. The same number when divided by 17 leaves y as a remainder. The value of y is
a) 5   b) 2
c) 3   d) 1

106. If $215 \times 216 \times 217 \times 218$ is divided by 8 the remainder is
a) 2   b) 4
c) 6   d) 8

107. When a number is divided by 56, the remainder obtained is 29. What will be

the remainder when the number is divided by 8?

a) 4   b) 5
c) 3   d) 7

108. A number when divided by 899 gives a remainder 63. If the same number is divided by 29, the remainder will be:
a) 10   b) 5
c) 4   d) 2

109. A number when divided by 6 leaves remainder 3. When the square of same number is divided by 6, the remainder is
a) 0   b) 1
c) 2   d) 3

110. When an integer K is divided by 3, the remainder is 1, and when K+1 is divided by 5, the remainder is 0. Of the following, a possible value of K is
a) 62   b) 63
c) 64   d) 65

111. 47 is added to the product of 71 and an unknown number. The new number is divisible by 7 giving the quotient 98. The unknown number is a multiple of
a) 2   b) 5
c) 7   d) 3

112. In a division sum, the divisor is 3 times the quotient and 6 times the remainder. If the remainder is 2, then the dividend is
a) 50   b) 48
c) 36   d) 28

113. A student was asked to divide a number by 6 and add 12 to the quotient. He, however, first added 12 to the number and then divided it by 6, getting 112 as the answer the correct answer should have been
a) 124   b) 122
c) 118   d) 114

114. If two numbers are divided by the same divider, the remainders are respectively 3 and 4. If the sum of the two numbers be divided by the same divisor, the remainder is 2. The divisor is
a) 9   b) 7
c) 5   d) 3

115. A number divided by 13 leaves a remainder 1 and if the quotient, thus obtained, is divided by 5, we get a remainder of 3. What will be the remainder if the number is divided by 65?
a) 28   b) 16
c) 18   d) 40

116. If r is the remainder when each of 7654, 8506 and 9997 is divided by the greatest number d $(d > 1)$, then $d - r$ is equal to
a) 14   b) 18
c) 24   d) 28

117. Let x be an odd natural number. If x is divided by 6, it leaves a remainder y. If y^2 is divided by 4, it leaves remainder of z. Which of the following must be true for z?
a) $z = 3$ b) $z = 5$
c) $z = 1$ d) z is even

118. If sum of two numbers be a and their product be b, then the sum of their reciprocal is
a) $\frac{1}{a} + \frac{1}{b}$ b) $\frac{b}{a}$
c) $\frac{a}{b}$ d) $\frac{1}{ab}$

119. Sum of two numbers is 40 and their product is 375. What will be the sum of their reciprocals?
a) $\frac{8}{75}$ b) $\frac{1}{40}$
c) $\frac{75}{8}$ d) $\frac{75}{4}$

120. The sum and product of two numbers are 12 and 35 respectively. What will be the sum of their reciprocals?
a) $\frac{1}{3}$ b) $\frac{1}{5}$
c) $\frac{12}{35}$ d) $\frac{35}{12}$

121. How many digits in all are required to write numbers from 1 to 50?
a) 100   b) 92
c) 91   d) 50

122. The number $(2^{48} - 1)$ is always divisible by two numbers between 60 and 70. The numbers are:
a) 63 and 65   b) 63 and 67
c) 61 and 65   d) 65 and 67

Answer key:

1.d	2.c	3.a.$\frac{47}{99}$	b.$\frac{53}{99}$
c.$\frac{512}{999}$	d.$\frac{419}{990}$	e.$\frac{39}{74}$	f.$4\frac{47}{66}$
4.b	5.a	6.d	7.c
8.d	9.a	10.b	11.c
12.d	13.a	14.c	15.b
16.a	17.c	18.d	19.d
20.c	21.c	22.c	23.d
24.b	25.d	26.c	27.d
28.b	29.a	30.c	31.a
32.b	33.a	34.c	35.d
36.c	37.b	38.b	39.a
40.c	41.a	42.b	43.c
44.b	45.a	46.b	47.b
48.c	49.b	50.c	51.b
52.d	53.b	54.b	55.a
56.c	57.c	58.c	59.c
60.d	61.d	62.a	63.c
64.b	65.b	66.d	67.c

68.c	69.c	70.c	71.a
72.d	73.b	74.a	75.c
76.d	77.d	78.d	79.a
80.a	81.b	82.c	83.a
84.b	85.b	86.d	87.c
88.c	89.c	90.c	91.b
92.a	93.d	94.b	95.d
96.c	97.d	98.d	99.b
100.a	101.d	102.b	103.c
104.a	105.d	106.c	107.b
108.b	109.d	110.c	111.d
112.a	113.b	114.c	115.d
116.a	117.c	118.c	119.a
120.c	121.b	122.a	