SUMMER PEP-2023

WORKSHEETS FOR

ALL

B.TECH. STUDENTS

Department of Analytical Skills

Centre of Professional Enhancement

PREFACE

Companies that hire students through campus placements have various rounds to shortlist suitable candidates; these rounds include aptitude tests, group discussions and then personal interview. Most, if not all the companies follow this recruitment pattern.

Almost 90% of the applied candidates don't clear the aptitude test. The aptitude test is used to test the candidate on Quantitative Aptitude, Verbal Ability, and Analytical Ability/Logical Reasoning.

Quantitative Aptitude and Reasoning is very important subject to test your problem solving skills. So, in every competitive written exam they asked questions from this subject, not only in written they may ask some brain storming puzzles in interview also. It is the one of the key concept to qualify written exam almost every students who know basic mathematics can solve most of the questions in the exam but the main problem is that the time management, the recruiters does not give enough time to solve the problems so one who has more practice the model questions before exam can easily solve in the exams.

This book is essential for aptitude exams as all the important topics are discussed in this book. This book explains all the concepts clearly and also covers all the types of the questions.

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NUMBER SYSTEM – 1

1. What is the unit digit in the product (3^{65} x 6^{59} x 7^{71})?

   A) 1 B) 2 C) 4 D) 6

2. The digit in unit place of $12^{21} + 15^{37}$ is:

   A) 7 B) 3 C) 2 D) 5

3. Find the unit digit of $2^{23} \times 3^{41} \times 5^{25} \times 7^{4}$

   A) 3 B) 4 C) 0 D) 8

4. The unit's digit in the result of $(41)^{20} + (23)^{41} - 27^{18}$ is

   A) 6 B) 7 C) 5 D) 1

5. What is the unit digit of the given sum:
   1+ 22 + 33 + 44 + 55 + 66 =?

   A) 1 B) 4 C) 7 D) 9

6. Find the unit digit of $(432)^{412} \times (499)^{431}$.

   A.2 B.4 C.6 D.8

7. If x = $(164)^{169} + (333)^{337} – (727)^{726}$, then what is the units digit of x?

   A.5 B.9 C.7 D.8

8. What will come in place of unit digit in value of $(7)^{35} \times (3)^{71} \times (11)^{55}$?

   A.0 B.3 C.1 D.6

9. Find the unit digit of expression
   $(259)^{123} – (525)^{111} – (236)^{122} – (414)^{115} + (323)^{81}$

   A.3 B.4 C. 5 D. 7

10. If a number 6784329x145 is divisible by 11, then find the value of x.

    A. 3 B. 4 C. 5 D. 7

11. If a number 67235x489 is divisible by 9, then find the value of x.

    A. 1 B. 3 C. 5 D. 7

12. How many Integers are there in between 200 and 400 that are divisible by 7?

    A.31 B.33 C. 29 D.27

13. A number of friends decided to go on a picnic and planned to plan to spend Rs. 108 on eatables. Three of them however did not turn up. As a consequence each one of the remaining had to contribute Rs. 3 extra. The number of them who attended the picnic was:

A.15 B.12 C.9 D. 6

14. Find the unit digit in the expression
1! + 2! + 3! + 4! + ... + 100!

A.3 B. 4 C.6 D. 8

15. If 10-digit number 67127y76x2 is divisible by 88, then the value of (7x- 2y) is:

A. 10 B. 7 C. 5 D. 3

16. The digit in the unit's place of the number represented by $(7^{95} – 3^{58})$ is:

A. 6 B. 7 C. 0 D. 4

17. The unit digit of $[(25^{43} \times 56^{42}) + 456^{25} + 23^{42} + 76^{23}]$ is –
A. 1 B. 2 C. 3 D.4

18. What is the unit digit of the sum of first 150 whole numbers?
A. 9 B. 5 C. 0 D.1

19. Find the unit digit of 83 × 87 × 93 × 59 × 61.
A. 9 B. 4 C. 7 D.3

20. Find the digit at unit place in the product $(7^{42} \times 4^{37} \times 5^{43} \times 6^{79})$
A. 2 B. 4 C. 6 D.8

21. The digit in the unit's place in the number obtained after calculating $3^{53} - 6^{38} + 27^{56}$ is:
A. 4 B. 2 C. 8 D. 6

22. Three consecutive numbers such that twice the first, 3 times the second, and 4 times the third together make 182. The numbers are:
A. 18, 22 and 23 B. 18, 19 and 20
C. 19, 20 and 21 D. 20, 21 and 22

23. One-fifth of a number is equal to 5/8th of another number. If 35 is added to the first number, it becomes four times the second number. Find the second number.

A. 39 B. 70 C. 40 D. 25

24. How many of the integers between 110 and 120 are prime numbers?

A. 1 B. 2 C. 3 D. 4

25. The value of $(0.34\overline{67} + 0.1\overline{333})$ is :

A. 0.48 B.$0.48\overline{01}$ C.$0.\overline{48}$ D.$0.4\overline{8}$

26. An 85m long rod is divided into two parts. If one part is 2/3 of the other part, then the longer part (in metres) is :

A. 34 B.56 2/3 C. 85 D. 51

27. The product of two fractions is 14/15 and their quotient is 35/24. The greater fraction is—

A. 7/4 B. 7/6 C. 7/3 D. 4/5

28. If one-ninth of a certain number exceeds its one-tenth by 4, the number is

A.320 B.360 C. 400 D. 440

29. The unit digit in the sum of $(124)^{372} + (124)^{373}$ is

A. 5 B.4 C. 2 D.0

30. The last digit of $(1001)^{2008} + 1002$ is

A. 0 B. 3 C.4 D.6

31. Find the unit digit in the product $(4387)^{245} \times (621)^{72}$.

A.1 B. 2 C.5 D. 7

32. The unit digit of the expression $25^{6251} + 36^{528} + 73^{54}$ is

A. 6 B.5 C.4 D.0

33. The unit's digit in the product $7^{71} \times 6^{63} \times 3^{65}$ is

A. 1 B.2 C.3 D. 4

34. The digit in unit's place of the number $(1570)^2 + (1571)^2 + (1572)^2 + (1573)^2$ is :

A. 4 B. 1 C. 2 D. 3

35. The unit digit in $3 \times 38 \times 537 \times 1256$ is

A.4 B. 2 C. 6 D. 8

36. In a two–digit number, the digit at the unit's place is 1 less than twice the digit at the 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

37. The digit in unit's place of the product 49237 × 3995 × 738 × 83 × 9 is

A. 0 B. 7 C.5 D.6

38. By interchanging the digits of a two digit number we get a number which is four times the original number minus 24. If the unit's digit of the original number exceeds its ten's digit by 7, then original number is
A. 29 B. 36 C. 58 D. 18

39. By what number 5741648 is divisible by?
A. 131 B.101 C.97 D.151

40. Express 0.7777777…..in the form of a fraction.
A. 9/7 B.5/9 C.7/11 D. 7/9

NUMBER SYSTEM – 2

1. Find the number of the zeroes in the expression $2^{274} \times 25^{137}$.

   A. 275 B.274 C. 276 D. 277

2. The numbers 2, 4, 6, 8……98, 100 are multiplied together. The number of zeros at the end of the product must be:

   A. 13 B. 12 C. 11 D. 10

3. The divisor is 25 times the quotient and 5 times the remainder. If the quotient is 16, the dividend is :

   A. 6400 B. 6480 C. 400 D. 480

4. 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

5. Find the remainder when 35^{113} is divided by 9.

   A. 1 B. 2 C. 8 D. 7

6. Find the remainder when 7^{512} is divided by 400.

   A) 8 B) 7 C) 5 D) 1

7. How many factors of $25 \times 36 \times 52$ are perfect squares?

   A)18 B) 24 C) 36 D) 8

8. What is the highest power of 12 that divides 54!?

   A) 24 B) 25 C) 12 D) 18

9. Find the smallest number that leaves a remainder of 4 on division by 5, 5 on division by 6, 6 on division by 7, 7 on division by 8 and 8 on division by 9?

   A) 2519 B) 5039 C) 1079 D) 97

10. In a division sum, the divisor is 10 times the quotient and 5 times the remainder. If the remainder is 46, what is the dividend?

    A) 4236 B) 4306 C) 4336 D) 5336

11. Find the least number which when divided by 5, 8, 11, 15 and 18 leaves the same remainder 3 in each case.

    A) 3960 B) 3693 C) 3363 D) 3963

12. If 133! is divisible by 7^n then find the maximum value of n.

A) 21 B) 22 C) 23 D) 24

13. If 187! is divisible by 15^n then find the maximum value of n

A) 45 B) 50 C) 46 D)48

14. Find the no. of zeros in expression: 1 × 3 × 5 × 7 ..... × 99

A) 24 B) 12 C) 10 D) 0

15. Find the no. of zeros in expression : 10 × 20 × 30 × ..... × 1000

A) 124 B) 130 C) 249 D) 150

16. Find the remainder in expression– (1001×1002×1003×1004)/27

A) 10 B) 11 C) 12 D) 2

17. Find the remainder in expression- (1!+2!+3!+....+100!)/7

A) 2 B) 3 C) 4 D) 5

18. Find the remainder when $(67^{67} + 67)$ is divided by 68.

A) 1 B) -1 C) 66 D) 3

19. Find the remainder when $(17)^{23} + (29)^{23}$ is divided by 23.

A) 0 B) 1 C) 2 D) 3

20. Find the remainder when $(3)^{2140}$ is divided by 17.

A) 13 B) 4 C) 10 D) 7

21. 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

22. A number when divided successively by 4 and 5 leaves remainders 1 and 4 respectively. When it is successively divided by 5 and 4 the respective remainders will be

A) 4,1 B) 3,2 C) 2,3 D)1,3

23. How many factors of the number 28 × 36 ×54 × 105 are multiples of 120?

A) 540 B) 660 C) 594 D) 792

24. Number $N = 2^6 \times 5^5 \times 7^6 \times 10^7$; how many factors of N are even numbers?

A) 1183 B) 1200 C)1050 D) 540

25. How many factors of 24 × 53 × 74 are odd numbers?

A) 100 B) 99 C) 20 D) 24

26. Consider a 6-digit number of the form XYXYXY. The number is divisible by :

A) 3 and 7 only B) 7 and 13 only

C) 3, 13 and 37 only D) 3, 7, 13 and 37

27. What is the largest 5-digit number, which leaves the remainder 7, when divided by 18 as well as by 11?

A) 99981 B) 99988 C) 99997 D) 99999

28. If the 5-digit number 676xy is divisible by 3, 7 and 11, then what is the value of (3x - 5y)?

A) 9 B)11 C) 10 D) 7

29. Find the highest power of 30 in 50!
A) 13 B) 7 C) 8 D) 12

30. Find the number of zeroes present at the end of 100!
A) 13 B) 7 C) 24 D) 12

31. The number 2006! is written in base 22. How many zeroes are there at the end?
A) 450 B) 500 C) 199 D) 200

32. L.C.M of two prime numbers x and y (x>y) is 161. The value of 3y-x is :
A) -1 B) -2 C) 1 D) 2

33. The LCM of two numbers is 432 and their HCF is 72.if one of the number is 144, the other number is:
A) 216 B) 144 C) 92 D) 152

34. The HCF of 6453 and 7409 is 239, Their LCM is:
A) 682 B) 1047 C) 200043 D) 956

35. The HCF and LCM of two numbers are 6 and 462 respectively. The numbers of such pairs will be

A) 0 B) 1 C) 2 D) 3

36. The HCF and the product of two numbers are 30 and 12600 respectively. The number of possible pairs are/is
A) 0 B) 1 C) 2 D) 3

37. The LCM of two numbers is 375 and their HCF is 10. if one of the numbers is 15, the other number is

A) 300 B) 150 C) 125 D) 250

38. The HCF and product of two numbers are 15/2 and 3150 respectively. The numbers of such pairs will be

A) 0 B) 1 C) 2 D) 3

39. The LCM of two numbers is 4 times of their HCF. The sum of LCM and HCF is 250.If one of the number is 200 then the other number is

A) 50 B) 150 C) 200 D) 350

40. The LCM of two numbers is 3640 and their HCF is 78.if one of the number is 156, the other number is

A) 1500 B)1820 C) 2000 D) 2080

AVERAGE AND WEIGHTED AVERAGE

1. Average of first 10 natural numbers

   A] 5 B] 6 C] 5.5 D] 5.2

2. The average age of three boys is 15 years. If their ages are in the ratio 3: 5: 7, the age of the youngest boy is:
   A] 9 years B] 15 years C] 18 years D] 21 years

3. The average of ages of 10 persons in a club was 32. What should be the age of the new person joining in the club so as to increase the average by 4?
   A] 68 B] 70 C] 71 D] 76

4. The average weight of the teacher and six students is 12 kg which is reduced by 5 kg if the weight of the teacher is excluded. How much does the teacher weight?
   A] 40 B] 42 C] 36 D] 38

5. The average age of 40 students in a class is 15 years. If the age of teacher is also included, the average becomes 16 years, find the age of the teacher.
   A] 50 B] 52 C] 54 D] 56

6. Average age of 9 members of a club is 29 years. If 2 more persons with the average age of 40 years have become the members of the club, find average age of all the 11 members.
   A] 29 B] 30 C] 31 D] 32

7. Average age of 18 men is decreased by 1 year when one man whose age is 49 years is replaced by a new man. Find age of the new man.
   A] 29 B] 31 C] 33 D] 35

8. The average weight of 12 persons is 50 kg. On replacing a man whose weight is 53 kg. with a new man, new average becomes 49 kg. The weight of the new man is:
   A] 35 B] 37 C] 39 D] 41

9. The average age of 12 men in a group is increased by 2 years when two men whose ages are 20 years and 22 years, are replaced by new members. What is the average age of the new men included?
A] 35 B] 33 C] 31 D] 29
10. Average age of 7 members of a family is 29 years. If present age of the youngest member is 5 years, find average age of the remaining members at the time of birth of the youngest member.
A] 24 B] 26 C] 28 D] 30
11. Average weight of 8 persons is 48 kg. If one man weighing 34 kg, is died, what is the average age of the 7 persons.
A] 50 B] 52 C] 54 D] 56
12. The average expenditure of a man for 10 days is Rs. 45 per day. If his average expenditure for the first 3 days is Rs. 52 per day, find his average expenditure for the remaining 7 days.
A] 35 B] 37 C] 39 D] 42

13. The average weight of the students of a class is 40 kgs. 5 new students with the average weight of 46 kgs having joined the class, the average weight of the class is increased by 2 kg. Find the number of students the class originally?
A] 10 B] 12 C] 14 D] 16

14. Average temperature from 9th to 16th of a month is 30 degree C and that from 10th to 17th is 31-degree C. What is the temperature on 17th, if temperature on 9th is 35 degree C?
A] 35 B] 37 C] 39 D] 43

15. The average of 11 observations is 72. If average of first 6 observations is 70 and that of last 6 observations is 71, then the 6th observation is:
A] 51 B] 54 C] 55 D] 56

16. Average expenditure of a person for the first 3 days of a week is Rs. 350 and for the next 4 days is Rs. 420. Average expenditure of the man for the whole week is:
A] 350 B] 370 C] 390 D] 430

17. 11 friends went to a hotel and decided to pay the bill amount equally. But 10 of them could pay Rs. 60 each as a result 11th has to pay Rs. 50 extras than his share. Find the amount paid by him.
A] 110 B] 111 C] 115 D] 123

18. The average marks obtained by some students in an examination is 54. If 20% of the students got a mean score of 90 marks and the 30% of the students got a mean score of 20. Find the average marks of the remaining students.
A] 60 B] 62 C] 64 D] 66

19. The average temperature of Monday, Tuesday, Wednesday and Thursday was 38◦ and that of Tuesday, Wednesday, Thursday and Friday was 40◦. If the temperature on Monday was 30◦, the temperature of Friday was:
A] 40◦ B] 39◦ C] 38◦ D] 30◦

20. A shop keeper earned Rs.504 in 12 days. His average income for the first four days was Rs.40 a day. His average income for the remaining days is:
A] Rs.40 B] Rs.42 C] Rs.43 D] Rs.45

21. A man whose bowling average is 12.4 takes 5 wickets for 26 runs and there by decreases his average by 0.4. The number of wickets taken by him before his last match is:
A] 85 B] 78 C] 72 D] 64

22. The average of weight of three men A, B and C is 84 kg. Another man D joins the group and the average now becomes 80 kg. If another man E, whose weight is 3 kg more than that of D, replaces A, then the average weight of B, C, D and E becomes 79 kg. The weight of A is:
A] 70 kg B] 72 kg C] 75 kg D] 80 kg

23. The average age of A, B, C, D five years ago was 45 years. By including X, the present average age of all the five is 49 years. The present age of X is:
A] 64 years B] 48 years C] 45 years D] 40 years

24. The average age of 24 students in a class is 10. If the teacher's age is including, the average increases by one. The age of the teacher is:
A] 25 years B] 30 years C] 35 years D] 40 years

25. The average of marks obtained by 120 candidates was 35. If the average of marks of passed candidates was 39 and that of failed candidates was 15, the number of candidates who passed the examination, is:
A] 100 B] 110 C] 120 D] 150

26. The average expenditure of a man for the first five months is Rs.120 and for the next seven months it is Rs.130. If he saves Rs.290 in that year, his monthly average income is:
A] Rs.140 B] Rs.150 C] Rs.160 D] Rs.170

27. The average salary of 20 workers in an office is Rs.1900 per month. If the manager's salary is added, the average salary becomes Rs.2000 p.m. What is the manager's annual salary?
A] Rs.24,000 B] Rs.25,200 C] Rs.45,600 D] None of these

28. The average weight of a class of 40 students is 40 kg. If the weight of the teacher is included, the average weight increases by 500 gm. The weight of the teacher is:
A] 40.5 kg B] 60 kg C] 60.5 kg D] 62 kg

29. The average weight of 8 men is increased by 2 kg when one of the men, whose weight is 50 kg is replaced by a new man. The weight of the new man is:
A] 52 kg B] 58 kg C] 66 kg D] 68 kg

30. The average weight of 8 persons is increased by 2.5 kg, when one of them whose weight is 56 kg is replaced by a new man. The weight of the new man is:
A] 66 kg B] 75 kg C] 76 kg D] 86 kg

31. The average age of an adult class is 40 years. 12 new students with an average of 32 years join the class, thereby decreasing the average by 4 years. The original strength of the class was:
A] 10 B] 11 C] 12 D] 15

32. Out of four numbers, the average of first three is 15 and that of the last three is 16. If the last number is 19, the first is:
A] 15 B] 16 C] 18 D] 19

33. The average of 10 numbers is calculated as 15. It is discovered later on that while calculating the average one number, namely 36 was wrongly read as 26. The correct average is:
A] 12.4 B] 14 C] 16 D] 18.6

34. The average height of 30 girls out of a class of 40 is 160 cm. and that of remaining girls is 15 cm. The average height of the whole class is:
A] 158 cm B] 158.5 cm C] 159 cm D] 159.5 cm

35. Some consecutive natural numbers, starting with 1, are written on the board. Now, one of the numbers was erased and the average of the remaining numbers is 800/39. Find the number which was erased.

A] 24 B] 20 C] 18 D] 16

36. A team of eight entered for a shooting competition. The best marks man scored 85 points. If he had scored 92 points, the average scores for. The team would have been 84. How many points altogether did the team score?

A] 625 B] 632 C] 656 D] 665

37. A grocer has a sale of Rs 6435, Rs. 6927, Rs. 6855, Rs. 7230 and Rs. 6562 for 5 consecutive months. How much sale must he have in the sixth month so that he gets an average sale of Rs, 6500?

A]4991 B] 5497 C] 4950 D] 5051

38. In Arun's opinion, his weight is greater than 65 kg but less than 72 kg. His brother does not agree with Arun and he thinks that Arun's weight is greater than 60 kg but less than 70 kg. His mother's view is that his weight cannot be greater than 67 kg. If all of them are correct in their estimation, what is the average of different probable weights of Arun?

A] 66 B] 66.5 C] 68.5 D] 70

39. The average of six numbers is 3.95. The average of two of them is 3.4, while the average of the other two is 3.85. What is the average of the remaining two numbers?

A]4.6 B] 3.6 C] 3.8 D] 4.2

40. The average age of students of a class is 15.8 years. The average age of boys in the class is 16.4 years and that of the girls is 15.4 years, The ratio of the number of boys to the number of girls in the class is:

A] 2:3 B] 3:2 C] 2:5 D] 5:2

RANKING

1. In a row of some children, S is 25th from left, T is 60th from right. If they interchanged their positions, then T becomes 70th from right end. Find:

   (i) What is S's right-hand position in new position

   A] 35 B] 33 C] 34 D] 36

   (ii) What is T's left hand position in earlier position?

   A] 35 L B] 35 R C] 34 L D] 34 R

   (iii) How many numbers of persons between S and T.

   A] 10 B] 11 C] 9 D] 8

   (iv) What is the total strength

   A] 96 B] 98 C] 94 D] 97

   (v) If 'Q' is placed exactly between S & T then what is his rank from left end?

   A] 31 B] 29 C] 32 D] 30

2. In a row of girls, Kamya is fifth from the left and Preeti is sixth from the right. When they exchange their Positions, then kamya becomes thirteenth from the left. What will be Preeti's position from the right?

   A 7^{th} B 14^{th} C. 11^{th} D. 18^{th}

3. In a row of children facing north, Ritesh is 12^{th} from the left end. Sudhir, who is 22^{nd} from the right end, is 4^{th} to the right of Ritesh. Total how many children are there in the row?

   A. 35 B. 36 C. 37 D. 34

4. There are 25 boys in a horizontal row. Rahul was shifted by three places towards his right side and he occupies the middle postion in the row. What was his Original position from the left end of the row?

   A. 15^{th} B. 16^{th} C. 12^{th} D. 10^{th}

5. Aman is 6^{th} from the left end in a row of boys and Vivek is 18^{th} from the right end. Gagan is 11^{th} from Aman towards the right and 3^{rd} from Vivek towards the right end. How many boys are there in a row?

   A. 40 B. 42 C. 48 D. 41

6. In a row of girls, Nithya and Suganya occupy the ninth place from the right end and tenth place from the left end, respectively. If they interchange their places, then Nithya and Suganya occupy seventeenth place from the right and eighteenth place from the left respectively. How many girls are there in the row?
   A] 22 B] 24 C] 26 D] 28

7. In a queue of children, Arun is fifth from the left and Suresh is sixth from the right. When they interchange their places among themselves, Arun becomes thirteenth from the left. Then, what will be Suresh's position from the right?
   A] 8th B] 14^{th} C] 15th D] 16th

8. Vimal is 7 ranks ahead of Sathish in a class of 39. If Sathish's rank is seventeenth from the last, what is Vimal's rank from the start?
   A] 11^{th} B] 13^{th} C] 16^{th} D] 18^{th}

9. In a row of trees, one tree is fifth from either end of the row. How many trees are there in row?
   A] 8 B] 9 C] 10 D] 11

10. Sugan ranks sixteenth from the top and forty ninth from the bottom in a class. How many students are there in the class?
    A] 54 B] 64 C] 65 D] 66

11. In a class of boys stands in a single line. One boy is nineteenth in order from both the ends. How many boys are there in the class?
    A] 17 B] 27 C] 37 D] 39

12. If Ajay finds that he is twelth from the right in a line of boys and fourth from the left, how many boys should be added to the line such that there are 28 boys in the line?
    A] 13 B] 14 C] 16 D] 20

13. Mahi ranked ninth from the top and thirty eighth from the bottom in a class. How many students are there in the class?
    A] 42 B] 44 C] 46 D] 48

14. In a row of girls facing North, Reena is 10th to the left of Pallavi, who is 21st from the right end. If Malini, who is 17th from the left end, is fourth to the right of Reena, how many girls are there in the row?

A] 37 B] 41 C] 43 D] 49

15. Ram ranked ninth from the top and thirty–eighth from the bottom in a class. How many students are there in the class?

A] 44 B] 45 C] 46 D] 47

16. If it is possible to make a meaningful word with the fourth, the eighth and the tenth letters of the word 'COUNTERACT, which of the following will be the last letter of that word ? If no such word can be made, give X as the answer. If more than one such word can be made, give. M as the answer.
A] A B] N C] T D] X E] M

17. Nitin was counting down from 32. Sumit was counting upwards the numbers starting from 1 and he was calling out only the odd numbers. What common number will they call out at the same time if they were calling out at the same speed?
A] 19 B] 21 C] 22 D] They will not call out the same number

18. Rahul ranked ninth from the top and thirty eighth from the bottom in a class. How many students are there in the class?
A] 45 B] 46 C] 47 D] 48

19. In a row of boys, Deepak is seventh from the left and Madhu is twelfth from the right. If they interchange their positions, Deepak becomes twenty-second from the left. How many boys are there in the row?
A] 19 B] 31 C] 33 D] Cannot be determined
E] None of these

20. In a queue, Amrita is 10th from the front while Mukul is 25th from behind and Mamta is just in the middle of the two. If there be 50 persons in the queue, what position does Mamta occupy from the front?
A] 20th B] 19th C] 18th D] 17th

21. Manoj and Sachin are ranked seventh and eleventh respectively from the top in a class of 31 students. What will be their respective ranks from the bottom in the class?
A] 20th and 24th B] 24th and 20th C] 25th and 21st
D] 26th and 22nd E] None of these

22. In a row of girls, Rita and Monika occupy the ninth place from the right end and tenth place from the left end, respectively. If they interchange their places, Rita and Monika occupy seventeenth place from the right and eighteenth place from the left, respectively. How many girls are there in the row?
A] 25 B] 26 C] 27 D] Data inadequate E] None of these

23. Three persons A, B and C are standing in a queue. There are five persons between A and B and eight persons between B and C. If there be three persons ahead of C and persons behind A, what could be the minimum number of persons in the queue?
A] 41 B] 40 C] 28 D] 27

24. In a row of boys, Kapil is eighth from the right and Nikunj is twelfth from the left. When Kapil and Nikunj interchange positions, Nikunj becomes twenty first from the left. Which of the following will be Kapil's position from the right ?
A] 8th B] 17th C] 21st D] Cannot be determined E] None of these

25. In a queue of children, Kashish is fifth from the left and Mona is sixth from the right. When they interchange their places among themselves, Kashish becomes thirteenth from the left. Then, what will be Mona's position from the right ?
A] 4th B] 8th C] 14th D] 15th

26. If you are eleventh in a queue starting either end, how many are there in the queue ?
A] Eleven B] Twenty C] Twenty one D] Twenty two

27. In a row of 16 girls, when Hema was shifted by two places towards the left she became 7th from the left end. What was her earlier position from the right end ?
A] 7th B] 8th C] 9th D] 10th

28. In a row of boys, Srinath is 7th from the left and Venkat is 12th from the right. If they interchange their positions, Srinath becomes 22nd from the left. How many boys are there in the row?
A] 19 B] 31 C] 33 D] 34

29. Suresh is 7 ranks ahead of Ashok in the class of 39 students. If Ashok's rank is 17th from the last, what is Suresh's rank from the start?
A] 16th B] 23th C] 24th D] 15th

30. Sudheesh ranks seventh from the top and 28th from the bottom. How many students are there in the class?
A] 34 B] 35 C] 28 D] 21

PERCENTAGE

1. A number when decreased by 10% became 450. Find the original number.

A] 350 B] 400 C] 500 D] 700

2. A number when increased by 25% became 150. Find the original number.

A] 80 B] 100 C] 120 D] 140

3. In an election contest between A and B, A wins by the margin of 240 votes. If A gets 60% of the total votes, total votes are

A] 1000 B] 1200 C] 1500 D] 2000

4. Find the income of a person who spends Rs. 3125 and saves 37.5% of his income.

A] 4500 B] 5000 C] 5500 D] 6000

5. If X is 125% of Y. Y is 25% more than Z, then by what % X is more than Z.

A]58% B] 56.25% C] 60.50% D] 62.50%

6. A student required 36% marks to pass in an examination. He scored 24% marks and failed by 18 marks. Find the passing mark and total marks.

A] 60,160 B] 50,150 C] 54,150 D] 54,160

7. A student multiplied a number by 5/8 instead of 8/5. What is the percentage error in the calculation?

A] 58% B] 61% C] 64% D] 55%

8. Salary of a person was first decreased by 15% the increased by 20% and again decreased by 25%. If initial salary was 50,000 find the current salary.

A] 35000 B] 38250 C] 40000 D] 42500

9. If the price of Sugarcane juice is decreased by 25% and its consumption increased by 15%, what will be the change in expenditure.

A] 17.5% decrease B] 13.75% decrease C] 13.75% increase D] 17.5% increase

10. If population of a town was increased successively by 25%,15% and 20% for 3 years. Find the current population of the town if initial population was 80000.

A] 150000 B] 125000 C] 138000 D] 145000

11. In an election between two candidates, one got 55% of the total valid votes, 20% of the votes were invalid. If the total number of votes was 7500, the number of valid votes that the other candidate got, was:

A] 2500 B] 2700 C] 2900 D] 3100

12. If 20% of a = b, then b% of 20 is the same as

A]4% of a B] 6% of a C] 8% of a D] 10% of a

13. Fresh fruit contains 68% water and dry fruit contains 20% water. How much dry fruit can be obtained from 100 kg of fresh fruits?

A]20 B] 30 C] 40 D] 50

14. A's salary is 40% of B's salary which is 25% of C's salary. What percentage of C's salary is A's salary?

A]10 B] 20 C] 30 D] 40

15. Gaurav spends 30% of his monthly income on food articles, 40% of the remaining on conveyance and clothes and saves 50% of the remaining. If his monthly salary is Rs. 18,400, how much money does he save every month?

A] 3864 B] 4903 C] 5849 D] 6789

16. In an examination it is required to get 35% of the aggregate marks to pass Rishu got 216 marks and declared failed by 5% marks then what was the total marks?

A] 620 B] 720 C] 820 D] 710

17. Aditya's salary is 80% of Amit's salary and 120% of Rajiv's salary. What is Amit's salary if Rajiv's salary is 30,000?

A] 40000 B] 45000 C] 50000 D] 55000

18. Rice is now being sold at Rs. 30 per kg. During last month its rate was Rs. 26 per kg. Find by how much percentage must a family reduce its consumption to keep the expenditure fixed?

A] 12.5% B] 13.33% C] 14% D] 15%

19. Three candidates contested an election and received 1136, 7636 and 11628 votes respectively. What percentage of the total votes did the winning candidate get?

A] 57% B] 60% C] 65% D] 90%

20. In an examination, A candidate obtains 25% marks and fails by 45 marks while another candidate obtains 46% marks and passed by 15% marks. What are the passing marks?

A] 600 B] 675 C] 700 D] 750

21. Aditya has some amount out of which 25% is stolen in bus, 10% he gave to his friend, 50% of remainder is spent in party and rest Rs. 26 gave to his mother. What was his initial amount?

A] 1230 B] 80 C] 160 D] 90

22. If 3/5 of a number is 23 more than 50% of the same number, then what will be 80% of the number?

A] 230 B] 174 C] 23 D] 184

23. 405 toffees were distributed equally among children in such a way that the number of toffees received by each child is 20% of total number of children. How many toffees did each child got?

A] 40 B] 30 C] 42 D] 55

24. The price of sugar is reduced by 2%. How many kg of sugar can now be bought for the money which was sufficient to buy 49 kg of sugar earlier?

A] 1 kg less B] 1 kg more C] 2 kg more D] 2 kg less

25. Aditya's salary is 125% of Ram's salary. Sanjay's salary is 80% of Ram's salary. If the total of all the three salaries is Rs. 61000. What is Sanjay's salary?

A] 10000 B] 12000 C] 15000 D] 16000

26. Population of Delhi increases by 10% every year. If the current population of Delhi is 1,331,000 then what was its population 3 years ago?

A] 1000000 B] 25000 C] 10000000 D] 1543200

27. A, B, C shared Rs. 18500 so that A received 25% more than B and B received 20% more than C then what amount did A received?

A] 7000 B] 5000 C] 7500 D] 8000

28. Nutan got 456 marks in an exam. Aditya got 54% marks in same exam which is 24 less than Nutan. The minimum passing marks in exam is 35%. Then how much marks did Nutan get more than passing marks?

A] 280 B] 456 C] 180 D] 176

29. 1200 boy and 650 girls appeared in examination. If 70% of boy and 40% of girls failed. Find the approximate percentage of passed students?

A] 30% B] 41% D] 50% D] Can't determine.

30. Anuj and Meetu work in a shop and Anuj's salary is 5/6th of the salary of Meetu. They spend same money of Rs 2000 and after that save all the money. Find the salary of Anuj and Meetu if the ratio of their savings is 4 : 5.

A] Rs. 10000, Rs 12000 B] Rs.15500, Rs 1250

C] Rs. 8000, Rs 10000 D] Rs. 11000, Rs 8000

31. A Shopkeeper undertakes to supply 2000 tables at Rs. 1725 each. He estimates that if 10% are defective which will be sold at 50%, then the profit will be 15% on his whole outlay. When the tables were supplied, 70% of the tables were found defective. What loss did the Shopkeeper
incur?

A] Rs. 607500 B] Rs. 557500 C] Rs. 550500 D] Rs. 80680

32. Sweta invested Rs. 10,000 in a scheme exactly three years ago. The value of the investment increased by 10% during the first year, increased by 5% during the second year, and decreased by 10% during the third year. What is the value of the investment today?

A] Rs. 10,500 B] Rs. 10,395 C] Rs. 10,342 D] Rs. 10,230

33. In Mumbai, 60% of the registered voters are BJP-supporters and the rest are Congress-supporters. In a mayoral race, if 75% of the registered voters who are BJP-supporters and 20% of the registered voters who are Congress-supporters are expected to vote for candidate X, what percent of the registered voters are expected to vote for candidate X?

A] 53% B] 55% C] 57% D] 59%

34. In Convent Model School, 60% of the students are boys. In an aptitude test, 80% of the girls scored more than 40 marks (out of a maximum possible 150 marks). If 60% of the total students scored more than 40 marks in the same test, find the fraction of the boys who scored 40 marks or less?

A] 3/5 B] 6/7 C] 5/7 D] 7/15 E] None of these

35. Suman's project report on 'Development with dignity', consists of 25 pages each of 60 lines with 75 characters on each line. In case the number of lines is reduced to 55 but the number of characters is increased to 90 per lines, what is the percentage change in the number of pages. (Assume the number of pages to be a whole number.)

A] – 8% B] + 8% C] + 12% D] 80%

36. Price of sugar is increased by 22%. A person wants to increase his expenditure by 12% only. By what percent should he decrease consumption, nearest to one decimal place?
(a) 10% (b) 8.2% (c) 7.8 (d) 8.6%

37. Amir gave two successive discounts of 10% and 20% on a pencil. If the marked price of the pencil is Rs 3200, then what is the total value (in Rs) of the two discounts together?
(a) 940 (b) 1086 (c) 896 (d) 1120

38. 75% of the students passed in an examination. If 2 more students had passed the examination, 80% would have been successful. How many students are there in the class?
(a) 30 (b) 40 (c) 50 (d) 32

39. Tanya got an increment of **15%** in her salary. If her enhanced salary is Rs.14,030. What was her original salary?
(a) 12200 (b) 12300 (c) 12400 (d) 12000

40. A crate of fruits contains one spoiled fruit for every 25 fruits. 60% of the spoiled fruits were sold. If the seller had sold 48 spoiled fruits, then the number of fruits in the crate were
(a) 3000 (b) 2000 (c) 1200 (d) 2400

PROFIT AND LOSS

1. John made a profit of 25% while selling a book for Rs.250. Find the cost price of the book.
   A] Rs.160 B] Rs.170 C] Rs.180 D] Rs.200

2. A trader buys oranges at 7 for a rupee and sells them at 40% profit. How many oranges does he sell for a rupee?
   A] 3 B]. 4 C] 5 D] 6

3. On selling mangoes at 36 for a rupee, a shopkeeper loses 10%. How many mangoes should he sell for a rupee in order to gain 8%?
   A] 25 B] 30 C] 35 D] 40

4. A boy buys eggs at 10 for Rs.1.80 and sells them at 11 for Rs. 2. What is his gain or loss per cent?
   A] 1.27% B] 1.01% C] 1.68% D] 1.77%

5. A woman buys apples at 15 for a rupee and the same number at 20 a rupee. She mixes and sells them at 35 for 2 rupees. What is her gain per cent or loss per cent?
   A] 2.04% B] 3.5% D] 4.4% D] 5.4%

6. Some quantity of coffee is sold at Rs. 22 per kg, making 10% profit. If total gain is Rs. 88, what is the quantity of coffee sold?
   A] 44 B] 55 C] 60 D] 70

7. A manufacturer sells a scooter at 10% profit to wholesaler who in turn sells it to a retailer at 20% profit. If the price paid by the retailer is Rs. 13200, how much the scooter costs to the manufacturer?
   A] 8500 B] 10000 C] 11000 D] 12000

8. A man bought some oranges at the rate of 3 oranges for one rupee and equal number of oranges at the rate of 2 oranges for one rupee. What is his profit percentage, if he sells 2 oranges for one rupee.
   A] 10 B] 20 C] 30 D] 40

9. Goods are purchased for Rs. 450 and one-third is sold at a loss of 10%. At what profit per cent should the remainder be sold so as to gain 20% on the whole transaction?
   A] 35% B]42% C] 45% D] 48%

10. A retailer buys goods at 10% discount on its marked price and sells them at 20% higher than the marked price. What is his profit per cent?
   A] 30% B] 33.33% C] 37.5% D] 40%

11. A dishonest merchant professes to sell his goods at cost price, but uses a weight of 900 grams for one kg. weight. What is his profit per cent?
   A] 9.8 B] 10 C] 10.5 D] 11 1/9%

12. A merchant professes to sell goods at 20% profit but uses weight of 900 grams in place of a kilogram. What is his actual profit per cent?
   A] 28% B] 30% C] 33.33% D] 35%

13. A shopkeeper buys some pens. If he sells them at Rs.13 per pen, his total loss in Rs.150 but on selling them at Rs.15 per pen, his total gain is Rs. 100. How many pens did he sell?
   A] 101 B] 111 C] 121 D] 125

14. A man sold an article at 10% profit. Had it been sold for Rs. 50 more, he would have gained 15%. Cost Price of the article is:
   A] 9500 B] 9600 C] 9800 D] 1000

15. A machine is sold at a loss of 10%. Had it been sold at a profit of 15%, it would have fetched Rs. 50 more. The cost price of the machine is:
   A] Rs.210 B] Rs.220 C] Rs.200 D] Rs.270

16. A bicycle is sold at 10% profit. Had it been sold for Rs. 10 less, the profit would have been 5% only. What is the cost price of the bicycle?
   A] 180 B] 200 C] 220 D] 250

17. A man sells an article at a profit of 25%. If he had bought it at 20% less and sold it for Rs. 10.50 less, he would have gained 30%. Find the CP of the article.
A] 144 B] 72 C] 50 D] None of these

18. A merchant fixed selling price of his articles at Rs.700 after adding 40% profit to the cost price. As the sale was very low at this price level, he decided to fix the selling price at 20% profit. Find the new selling price.
A] 600 B] 800 C] 925 D] 1200

19. A shopkeeper bought some apples at the rate of Rs. 16 per dozen. Due to harsh climate 20% of the apples bought were rotten during the transportation. At what rate of per dozen should he sell the remaining apples so as to gain 30% on the total cost price?
A] 20 B] 26 C] 28 D] 30

20. A Watch is sold at 10% discount on its marked price of Rs. 480. If the retailer makes 20% profit on the cost price, find the cost price of the watch.
A] Rs.300 B] Rs.360 C] Rs.400 D] Rs.420

21. A shopkeeper allows 25% discount on the marked price of his articles and hence gains 25% of the Cost Price. What is the marked price of the article on selling which he gains Rs. 120?
A] Rs.75 B] Rs.76 C] Rs.70 D] Rs.80

22. A man purchased two articles for Rs. 10000 each. On selling first, he gains 20% and on the other, he loses 20%. What is profit/loss in the transaction?
A] 4% Profit B] 4% Loss C] 40% Profit D] No Profit & No loss

23. A man sold two articles for Rs. 10000 each. On selling first, he gains 10% and on the other, he loses 10%. What is profit/loss in the transaction.
A] 20% Profit B] 1% Profit D] 1% Loss D] 4% Loss

24. Two tables are purchased for the total cost of Rs. 5000. First table is sold at 40% profit and second at 40% loss. If selling price is same for both the tables, what is the cost price of the table that was sold at profit?
A] Rs.1260 B] Rs.1500 C] Rs.2500 D] Rs.2600

25. A reduction of 10% in the price of sugar enables a man to buy 25 kg more for Rs. 225. What is the original price of sugar (per kilogram)?
A] Rs. 2.5 B] Rs. 1 C] Rs.1.5 D] Rs.2

26. The income of a broker remains unchanged though the rate of commission is increased from 4% to 5%. The percentage of slump in business is:
A] 8% B] 1% C] 20% D] 80%

27. A dealer marks his goods 20% above cost price. He then allows some discount on it and makes a profit of 8%. The rate of discount is:
A] 12% B] 10% C] 6% D] 4%

28. A cloth merchant has announced 25% rebate in prices. If one needs to have a rebate of Rs.40, then how many shirts, cash costing Rs.32, he should purchase?
A] 6 B] 5 C] 10 D] 7

29. The difference between the selling prices after a discount of 40% on Rs.500 and two successive discount of 36% and 4% on the same amount is:
A] 0 B] Rs.2 C] Rs.1.93 D] Rs.7.20

30. Tarun bought a T.V with 20% discount on the labelled price. Had he bought it with 25% discount, he would have saved Rs.500. At what price did he buy the T.V?
A] Rs.5000 B] Rs.10,000 C] Rs.12000 D] Rs.6000

31. A man purchases an electric heater whose printed price is Rs.160. If he received two successive discounts of 20% and 10%; he paid:
A] Rs.112 B] Rs.129.60 C] Rs.119.60 D] Rs.115.20

32. The ratio of the prices of three different types of cars is 4:5:7. If the difference between the costliest and the cheapest cars is Rs.60000, the price of the car of modest price is:
A] Rs.80000 B] Rs.100000 C] Rs.140000 D] Rs.120000

33. A person bought an article and sold it at a loss of 10%. If he had bought it for 20% less and sold it for Rs.55 more, he would have had a profit of 40%. The C.P. of the article is:
A] Rs.200 B] Rs.225 C] Rs.250 D] None of these

34. The cost price of an article, which on being sold at a gain of 12% yields Rs.6 more than when it is sold at a loss of 12% is:
A] Rs.30 B] Rs.25 C] Rs.24 D] Rs.20

35. Bhajan Singh purchased 120 reams of paper at Rs.80 per ream. He spent Rs.280 on transportation, paid octroi at the rate of 40 paise per ream and paid Rs.72 to the coolie. If he wants to have a gain of 8%, what must be the selling price per ream?
A] Rs.86 B] Rs.87.48 C] Rs.89 D] Rs.90

36. Rahul went to purchase a Nokia mobile handset; the shopkeeper told him to pay 20% tax if he asked the bill. Rahul manages to get the discount of 5% on the actual sale price of the mobile and he paid the shopkeeper Rs. 3325 without tax. Besides he manages to avoid to pay 20% tax on the already discounted price, what is the amount of discount that he has gotten?
A] 875 B] 750 C] 375 D] 550

37. Ajay bought 15 kg of dal at the rate of Rs 14.50 per kg and 10 kg at the rate of Rs 13 per kg. He mixed the two and sold the mixture at the rate of Rs 15 per kg. What was his total gain in this transaction?
A] 27.50 B] 1.10 C] 11 D] 16.50

38. If the selling price of a mat is five times the discount offered and if the percentage of discount is equal to the percentage profit, find the ratio of the discount offered to the cost price.
A] 7:30 B] 6:31 C] 11:30 D] None of these

39. A man saves 20% of his monthly salary. If an account of dearness of things he is to increase his monthly expenses by 15%, he is only able to save Rs. 400 per month. What is his monthly salary?
A]5000 B] 4500 C] 4000 D] 4700

40. A milk man has 20 liters of milk. If he mixes 5 liters of water, which is freely available, in 20 liters of pure milk. If the cost of pure milk is Rs.18 per liter, then the profit of the milkman, when he sells all the mixture at cost price is:
A] 25% B] 20% C] 33.33% D] 18%

SIMPLE INTEREST & COMPOUND INTEREST

1. The interest earned by Rs.4800 in 2 years and 3 months at the rate of 8.5%p.a. simple interest is
   A] 918 B] 922 C] 925 D] 928

2. Murali deposited a certain sum of money at S.I, which amounts to Rs. 720 after 2 years and to Rs. 1020 after a further period of 5 years. The sum is
   A] Rs.500 B] Rs.600 C] Rs.1200 D] Rs.1300

3. The simple interest on a sum of money will be Rs.600 after 10 years. If the principle is trebled after 5 years, what will be the total interest at the end of the tenth year?
   A] Rs.1050 B] Rs.1100 C] Rs.1200 D] Rs.1300

4. An amount becomes 4 times in 7 years when invested under SI at a certain rate. In how many years will the amount become 16 times of the original amount at the same rate?
   A] 25 B] 30 C] 35 D] 40

5. A sum was put at simple interest at a certain rate for 2 years. Had it been put at 4% higher rate; it would have fetched Rs. 400 more. Find the sum.
   A] Rs.4500 B] Rs.5000 C] Rs.6000 D] Rs.7500

6. Rs. 600 amounts to Rs. 735 in 5 years at a certain rate of Simple interest. If the rate of interest is increased by 2%, what will be the amount then?
   A] Rs.795 B] Rs.815 C] Rs.825 D] Rs.850

7. A man lent Rs. 2000 - partly at 5% and the balance at 4%. If he receives Rs. 92 towards annual interest, find the amount lent at 5%.
   A] 1200 B] 800 C] 1500 D] 700

8. The rate of interest on a sum of money is 4% per annum for the first 2 years, 6% per annum for the next 4 years and 8% per annum for the period beyond 6 years. If the simple interest occurred by the sum for a total period of 9 years is Rs.1120, what is the sum?
   A] Rs.1500 B] Rs.2000 C] Rs.2500 D] Rs.4000

9. The difference between the interests received from two different banks on Rs.500 for 2 years, is Rs.2.50. The difference between their rates is:
   A] 1% B] 0.5% C] 2.5% D] 0.25%

10. In how many years will sum of money double itself at 12% per annum?
   A] 6 years 9 months B] 8 years 3 months

   C] 7 years 6 months D] 8 years 4 months

11. A lent Rs.600 to B for 2 years and Rs.150 to C for 4 years and received all together from both Rs.90 as simple interest. The total interest is:
   A] 4% B] 5% C] 10% D] 12%

12. Rs.800 amounts to Rs.920 in 3 years at simple interest. If the interest rate is increased by 3%, it would amount to how much?
   A] Rs.1056 B] Rs.1112 C] Rs.1182 D] Rs.992

13. At a certain rate of simple interest, a certain sum doubles itself in 10 years. It will triple itself in :
   A] 15 years B] 20 years C] 30 years D] 12 years

14. Find interest for Rs. 6000 at 10% per annum, compounded semi-annually for 2 yrs.
   A] Rs.1200 B] Rs.1250 C] Rs.1293 D] None of these

15. Find compound interest on Rs. 10000 at 10% p.a. for 4 years, if interest is compounded annually.
   A] Rs.4341 B] Rs.4441 C] Rs.4641 D] Rs.4741

16. If a certain sum of money invested at a certain rate of compound interest doubles in 5 years. In how many years will it become 4 times?.
   A] 7 years B] 10 years C] 11 years D] 12 years

17. If a certain sum of money invested at a certain rate of compound interest doubles in 6 years. In how many years will it become 8 times?
   A] 16 B] 18 C] 20 D] 24

18. At what rate per cent of compound interest, a sum of Rs. 2000 will amount to Rs. 2662 in 3 years?
   A] 10% B] 20% C] 30% D] 40%

19. The difference between the CI and SI on a certain amount at 10% per annum for 2 years, compounded annually is Rs.372. Find the principal.
A] Rs.32200 B] Rs.35000 C] Rs.37200 D] None

20. A sum of money amounts to Rs. 2880 in 2 years and 3456 in 3 years at compound interest. Find the sum.
A] Rs.2000 B] Rs.2200 C] Rs.2255 D] Rs.2400

21. A certain sum is to be divided between A and B so that after 5 years the amount received by A is equal to the amount received by B after 7 years. The rate of interest is 10%, interest compounded annually. Find the ratio of amounts invested by them.
A] 100: 121 B] 121: 100 C] 110: 121 D] 110: 131

22. A father wants to divide Rs. 5100 between his two sons, Mohan and Sohan who are 23 and 24 at present. Divide the amount in such a way that if their shares are invested at compound interest @ 4% p.a., they will receive equal amount on attaining the age of 26 years. Find Mohan's share.
A] Rs.2460 B] Rs.2600 C] Rs.2500 D] Rs.2720

23. Find the difference between Compound Interest and Simple Interest on Rs. 4000 for 1 year at 10% p.a., if the interest is compounded half-yearly.
A] Rs.40 B] Rs.35 C] Rs.25 D] Rs.10

24. If Compound Interest on a certain sum for 2 years at 5% p.a. is Rs.328, the Simple interest will be?
A] Rs.320 B] Rs.340 C] Rs.360 D] Rs.380

25. The difference between simple interest and compound interest on a sum for 2 years at 8%, when the interest is compounded annually Rs.16. If the interest was compounded half-yearly, the difference in two interests would be nearly:
A] Rs.16 B] Rs.16.80 C] Rs.21.85 D] Rs.24.64

26. The least number of complete years in which a sum of money put out at 20% C.I. will be more than doubled is:
A] 3 B] 4 C] 5 D] 6

27. The difference between simple interest and compound interest at the same rate for Rs.5000 for 2 years is Rs.72. The rate of interest is:
A] 10% B] 12% C] 6% D] 8%

28. The compound interest on a certain sum of money for 2 years at 10% per annum is Rs.420. The simple interest on the same sum at the same rate and for the same time will be:
A] Rs.350 B] Rs.375 C] Rs.380 D] Rs.400

29. A sum of money placed at C.I doubles itself in 5 years. It will amount to eight times itself in:
A] 15 years B] 20 years C] 12 years D] 10 years

30. The simple interest on a certain sum for 2 years at 10% per annum is Rs.90. The corresponding compound interest is:
A] Rs.99 B] Rs.95.60 C] Rs.94.50 D] Rs.108

31. What is the principal amount which earns Rs.132 as compound interest for the second year at 10% per annum?
A] Rs.1000 B] Rs.1200 C] Rs.1320 D] None of these

32. The difference of compound interest on Rs.800 for 1 year at 20% per annum when compounded half-yearly and quarterly is:
A] Nil B] Rs.2.50 C] Rs.4.40 D] Rs.6.60

33. The difference between simple interest and the compound interest on Rs.600 for 1 year at 10% per annum, reckoned half-yearly is:
A] Nil B] Rs.6.60 C] Rs.4.40 D] Rs.1.50

34. The compound interest of Rs.20480 at 6 1/4% per annum for 2 years 73 days is:
A] Rs.3000 B] Rs.3131 C] Rs.2929 D] Rs.3636

35. There is 50% increase in the amount after 5 years at certain rate. Find Compound interest on Rs 5000 after 2 years at same rate.
A]1050 B] 950 C] 850 D] 750

36. Yes bank offers 10% CI on half yearly customer deposit Rs 1200 on 1st Jan 2020. at the end of that year what would be the interest earned?
A] 243 B] 123 C] 173 D] 153

37. A certain sum amounts to 1960 after 2 years at 16.67% CI then find the sum and CI
A]1440 & 520 B] 1660 & 300 C] 1420 & 240 D] None of these

38. Find the rate of interest when SI for 5 years is 2000 and CI for 2 years is 840.
A]10% B] 12% C] 15% D]20%

39. If a certain sum of money becomes 4 times of itself in 3 years, then in how much time it would become 64 times of itself?
A] 9 years B] 8 years C] 19 years D] 18 years

40. If a sum of money 21600 becomes 51200 in 3 years, then find rate if compound interest.
A]33.33% B] 30% C] 25% D] 50%

RATIO AND PROPORTON

1. Two numbers are in the ratio 7: 5. On diminishing each of them by 40, the ratio becomes 27: 17. The difference between the numbers is:

A] 30 B] 60 C] 50 D] 40

2. 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

3. The number of oranges in three baskets are in the ratio of 3 : 4 : 5. In which ratio the no. of oranges in first two baskets must be increased so that the new ratio becomes 5 : 4 : 3?

A] 2 : 1 B] 2 : 5 C] 1 : 2 D] 2 : 3

4. A dog takes 3 leaps for every 5 leaps of a hare. If one leap of the dog is equal to 3 leaps of the hare, the ratio of the speed of the dog to that of the hare is:

A] 2 : 3 B] 2 : 5 C] 9 : 5 D] 4 : 3

5. The concentration of petrol in three different mixtures (petrol and kerosene) is 1/2 , 3/5 and 4/5 respectively. If 2 litres, 3 litres and 1 liter are taken from these three different vessels and mixed. what is the ratio of petrol and kerosene in the new mixture?

A] 2 : 3 B] 2 : 5 C] 3 : 2 D] 4 : 3

6. The ratio of male and female in a city is 7 : 8 respectively and percentage of children among male and female is 25 and 20 respectively. If number of adult females is 156800, what is the total population of the city?

A] 4,67,500 B] 5,67,500 C] 3,67,500 D] 2,67,500

7. In a competitive exam, the number of passed students was four times the number of failed students. If there had been 35 fewer appeared students and 9 more had failed, the ratio of passed and failed students would have been 2 : 1, then the total number of students appeared for the exam?

A] 145 B] 150 C] 165 D] 155

8. In a class of 39 students the ratio of boys and girls is 2 : 1. Radhika ranks 15th among all students from top and 8th among girls from bottom. How many boys are below Radhika?

A] 14 B] 10 C] 16 D] 17

9. A child has three different kinds of chocolates costing Rs.2, Rs.5, Rs.10. He spends total Rs.120 on the chocolates. what is the minimum possible number of chocolates he can buy, if there must be at least one chocolate of each kind?

A] 10 B] 15 C] 14 D] 17

10. 64 boys and 40 girls form a group for social work. During their membership drive, the same number of boys and girls joined the group. How many members does the group have now, if the ratio of boys to girls is 4:3?

A] 100 B] 150 C] 168 D] 170

11. An alloy A is formed by mixing gold and silver in the ratio 2 : 1. Another alloy B is formed by mixing silver and platinum in the ratio 3 : 4. An alloy C is obtained by mixing alloys A and B in a certain ratio such that the ratio of gold and platinum in alloy C is 5 : 6. Which of the following correctly represents the share of silver in alloy C.

A] 49/126 B] 15/126 C] 16/126 D] 17/126

12. For any two numbers m, n; (m+n) : (m-n) : mn = 7: 1: 60 . Find the value of 1/m: 1/n

A] 1: 3 B] 3: 4 C] 5: 4 D] 1: 4

13. In Maa Yatri Temple, every devotee offers fruits to the orphans. Thus every orphan receives bananas, oranges and grapes in the ratio of 3:2:7 in terms of dozens. But the weight of a grape is 24 gm and weight of a banana and an orange are in the ratio of 4:5, while the weight of an oranges 150gm. Find the ratio of all the three fruits in terms of weight, that an orphan gets.

A] 10 : 20 : 13 B] 20 : 25 : 11 C] 30 : 21 : 10 D] 30 : 25 : 14

14. Three cats are roaming in a zoo n such a way that when cat A takes 5 steps, B takes 6 steps and C takes 7 steps. But the 6 steps of A are equal to the 7 steps of B and 8 steps of C. what is the ratio of their speeds?

A] 100 : 200 : 130 B] 200 : 250 : 110 C] 300 : 210 : 100 D] 140:144:147

15. The ratio of students in a coaching preparing for B. tech and MBA is 4 : 5. The ratio of fees collected from each of B.tech and MBA students is 25 : 16. If the total amount collected from all the students is 1.62 lakh, what is the total amount collected from only MBA aspirants?

A] Rs. 62,000 B] Rs. 72,000 C] Rs. 52,000 D] Rs. 42,000

16. There are certain numbers of toys in the box. They are divided into such a way that the person who gets 1/4 of the whole gets thrice of what the others get on an average. Find the number of people amongst whom the toys are distributed?

A] 10 B] 15 C] 16 D] 17

17. There are two containers, the first one contains 1-liter pure water and the second one contains 1-liter pure milk. Now 5 cups of water from the first container are taken out is mixed well in the second container. Then, 5 cups of this mixture are taken out and is mixed in the first container. Let A denote the proportion of milk in the first container and B denote the proportion of water in the second container then:

A] A= B B] A>B C] A<B D] A+B

18. The ratio of the angles of a triangle is 3 : 4 : 5. The three angles of a quadrilateral is equal to three angles of this triangle. What is the sum of the largest angle and second smallest angle of the quadrilateral?

A] 220 deg B] 215 deg C] 225 deg D] None of these

19. In an exam, a candidate secured 504 marks out of the maximum mark of 'M'. If the maximum mark 'M' is converted into 800 marks, he would have secured 384 marks. What is the value of 'M'?

A] 220 B] 1050 C] 225 D] None of these

20. Vinod have 20 rupees. He bought 1, 2, 5-rupee stamps. They are different in numbers by the reason of no change, the shop keeper gives 3 one-rupee stamps. So how many stamps Vinod have?

A] 10 B] 18 C] 12 D] 15

21 If a:b = 4:1, then find (a – 3b) / (2a – b)?

A] 1/7 B] 2/7 C] 3/7 D] 5/7

22 The ratio of incomes of Nupur and Divya is 1: 2 and ratio of their expenditure is 2: 3. Who saves more? (You again have to assume that these girls do not take any loan from anywhere).

A] Nupur B] Divya C] Cannot be determined D] None of these

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

A] 2 : 5 B] 3 : 5 C] 4 : 5 D] 6 : 7

24 The ratio of sum of squares of first n natural numbers to square of sum of first n natural number 17: 325, the value of n is……

A] 15 B] 20 C] 35 D] None of these

25. The ratio of the incomes of Chetan and Dinesh is 3:4. The ratio of their expenditures is 5:7. If each of them saves Rs.200, find the incomes of both?

A] Rs.600, Rs.800 B] Rs.1200, Rs.1600

C] Rs.1500, Rs.2000 D] Rs.1800, Rs.2400

26 The inverse ratio of 3 : 2 : 1 is?

A] 1 : 2 : 3 B] 2 : 3 : 1 C] 3 : 1 : 2 D] 2 : 3 : 6

27 The cost of a diamond varies as the square of its weight. A diamond weighing 20 decigrams costs Rs. 4,800. Find the cost of a diamond of the same kind weighing 8 decigrams.

A] Rs. 762 B] Rs. 760 C] Rs. 764 D] Rs. 768

28 Find the ratio of the diagonal of a square of side 30 cm, to its side.

A] $\sqrt{2}$: 3 B] $\sqrt{3}$: 4 C] 1 : $\sqrt{2}$ D] $\sqrt{2}$: 1

29 The ratio of the first and second-class fares between the two stations is 6 : 4 and the number of passengers traveling by first and second-class is 1 : 30. If Rs. 2100 is collected as fare, what is the amount collected from first class passengers?

A] Rs.250 B] Rs. 200 C] Rs. 150 D] Rs. 100

30 In one alloy there is 60% gold in its total mass, while in another alloy it is 35%. 12 kg of the first alloy was melted together with 8 kg of the second one to form a third alloy. Find the percentage of gold in the new alloy.

A] 50% B] 49% C] 45% D] 48%

31. Rs 1104 is divided between 3 men, 4 women and 6 boys, so that the share of man, a women and a boy are in the proportion of 3 : 2 : 1. How much does each boy get?

A] Rs 48 B] Rs 64 C] Rs 96 D] Cannot be determined

32. The ratio of the present ages of a son and his father is 1 : 5 and that of his mother and father is 4 : 5. After 2 years the ratio of the age of the son to that of his mother becomes 3 : 10. What is the present age of the father?

(A) 30 years (B) 28 years (C) 37 years (D) 35 years

33. In Ram nagar Colony, the ratio of school going children to non-school going children is 5 : 4. If in the next year, the number of non-school going children is increased by 20%, making it 35,400 what is the new ratio of school going children to non-school going children?

A] 4 : 5 B] 3 : 2 C] 25 : 24 D] 6 : 7

34 The salaries A, B, C are in the ratio 2 : 3 : 5. If the increments of 15%, 10% and 20% are allowed respectively in their salaries, then what will be new ratio of their salaries?

A] 3:3:10 B] 10:11: 20 C] 23:33:60 D] Cannot be determined

35 By mistake, instead of dividing Rs. 117 among A, B and C in the ratio 1/2,1/3,1/4 it was divided in the ratio of 2:3:4. Who gains the most and by how much?

A] Rs 28 B] Rs 3 C] Rs 20 D] Rs 25

36 Two numbers A and B are such that the sum of 5% of A and 4% of B is two-third of the sum of 6% of A and 8% of B. Find the ratio of A : B is

A] 11: 20 B] 4: 3 C] 3: 4 D] 13: 20

37. What is the ratio whose terms differ by 40 and the measure of which is 2/7?

A] 16: 56 B] 4: 3 C] 30: 40 D] 13: 20

Q38. The ratio of number of men and women in a factory of 720 workers is 7 : 5. How many more women should be joined to make the ratio 1 : 1?

A] 120 B] 140 C] 130 D] 135

Q39. A store owner is packing small radios into larger boxes that measure 25 * 42 * 60 inches. If the measurement of each radio is 7 * 6 * 5 inches, then how many radios can be placed in the box?

A] 260 B] 300 C] 340 D] 380

Q40. A gardener wants to plant trees in his garden in rows in such a way that the number of trees in each row to be the same. If there are 24 rows the number of trees in each row is 42. If there are 12 more rows find the number of trees in each row?

A] 24 trees B] 28 trees C] 32 trees D] 36 trees

MIXTURE AND ALLIGATION

1. How many kilograms of rice of Rs 6.4/kg should be mixed with 10 kg of rice of Rs 4.8/kg, in such that by selling the mixture at 20 % profit, which is Rs. 1.12 more than the average price per kg of both the varieties of rice

A]12 kg B]10 kg C]15 kg D]11 kg

2. If the ratio of milk and water in a mixture of 66 *lt* is 5: 6. We added 12 *lt* water to the mixture, then find the ratio of milk and water.
A] 5: 8 B] 2:4 C] 7:9 D] 1:3

3. If the ratio of milk and water in a mixture is 7: 5. We withdraw 9 *lt* mixture and added same quantity of water to the mixture, then ratio becomes 1: 1. Find initial quantity of milk.
A] 36.75 *lt* B] 22.15 *lt* C] 17.50 *lt* D] 21.35 *lt*

4. Sandeep borrows a total sum of Rs. 10,000 from two sources. Out of two, one he pays 10% and to the other 5% per annum simple interest. If the total interest paid by him is Rs. 700. How much did he borrow at each rate of interest?
A] Rs. 4000, Rs. 6000 B] Rs. 5000, Rs. 4000
C] Rs. 7000, Rs. 3000 D] Rs. 8000, Rs. 2000

5. The expenditure and savings of Mahesh are in the ratio 3: 1. His income increases by 16% but at the same time his expenditure also increases by 20%. Find increase or decrease in his savings.
A] 8% B] 9% C] 5% D] 4%

6 Suresh buys two watches for Rs. 1,000. He sells one at a loss of 5% and the other at 20% gain and on the whole, he gains Rs. 50. Find the cost price of each watch.
A] Rs. 900, Rs. 400 B] Rs. 600, Rs. 400 C] Rs. 700, Rs. 400 D] Rs. 300, Rs. 400

7. Ramu buys 121 *lt* milk at Rs. 10 per/*lt* and mixed some water to this milk and then sold it Rs. 11 /*lt* and gains 20 % profit. Find the quantity of water that he mixed.
A] 14 *lt* B] 13 *lt* C] 11 *lt* D] 12 *lt*

8. In MNCs company the average daily wages of staff, consisting of supervisors and laborers, of a company is Rs. 50. The average wages of supervisors is Rs. 150, while that of laborers is Rs. 40 per day. If the number of supervisors is 15, find the number of laborers in the company.
A] 180 B] 170 C] 150 D] 160

9. It has been observed that, there are 510 average number of people on Sunday and 240 on remaining days of week in a market. This month's having 30 days and starts with Sunday. Find the average of people of each day.

A] 285 B]290 C] 260 D]385

10. A jeweller has bars of 18-carat gold and 12-carat gold. How much of each must be melted together to obtain a bar of 16-carat gold, weighing 120 g?
(Given: Pure gold is 24-carat).

A] 70 B]80 C]20 D]50

11. There are deer and ducks in a zoo. If heads are counted, then there are 180 total and if legs are counted then there are 450 total. Find the number of deer and ducks.

A] Deer33, Duck136 B] Deer44, Duck130
C] Deer45, Duck135 D] Deer54, Duck136

12. Uncle wants Rs. 41 is divided into 50 students. Each boy receives 90 paise and each girl receives 65 paise. How many boys and girls are present in the class?

A] Boys30, Girls24 B] Boys36, Girls16
C] Boys34, Girls16 D] Boys16, Girls34

13. A tank contains a mixture of 70 *lt* of milk and water. 65% of the milk and 30 % of the water are withdrawn. Therefore 60% part of the tank is remaining. Find the initial quantity of milk and water in the tank.

A] M20 *lt*, W30 *lt* B] M50 *lt*, W20 *lt*
C] M 60 *lt*, W10 *lt* D] M30 *lt*, W20 *lt*

14. A drink contains liquids P and Q in the ratio 4: 7. If 50 ml of first liquid is added to drink weighing 440 ml, then ratio of two mixture in it now becomes?

A] 5: 4 B] 4: 5 C] 3: 5 D] 3: 4

15. A, B and C are three alloys of tin and copper are prepared by mixing metals in the ratio of 1 ∶ 2, 2 ∶ 3, and 8 ∶ 7 respectively. Equal quantities of these alloys are melted to form alloy D. The ratio of tin and copper in alloy D.

A] 60: 17 B] 65: 19 C] 19: 26 D] 55: 20

16. Ramesh purchased three types of wheat. The cost of 1st, 2nd and 3rd type of wheat are Rs. 1.27 per /kg, Rs. 1.29 /kg and Rs. 1.32 /kg respectively. In which ratio are these mixed so that cost of mixture is Rs. 1.30 kg.

A] 1: 1: 2 B] 3: 1: 2 C] 2: 1: 2 D] 2: 1: 1

17. Three vessels whose capacities are in the ratio 3: 2: 1 are completely filled with milk mixed with water. The ratio of milk and water in the mixture of vessels are 5: 2, 4: 1, and 4: 1 respectively. Taking 33.33% of the first, 50% of the second, and 14.29% of the third, a new mixture is formed and poured into a new vessel. What is the percentage of water in the new vessel?

A] 24% B] 16 % C] 15 % D] 25 %

18. 4 liters are drawn from a cask full of wine and is then filled with water. This operation is performed one more time. The ratio of the quantity of wine now left in cask to that of the water is 16: 609. How much wine the cask holds originally?

A] 6.77 B] 4.77 C] 7.77 D] 5.77

19. In a mixture, the ratio of milk and water is in the ratio 5: 3. If 40 liters of mixture is extracted and 10 liters of water is added to the remaining mixture then the ratio of milk and water becomes 5: 4. Find the original quantity of mixture.

A] 135 liters B] 130 liters C] 120 liters D] 115 liters

20. When a bus started from the first stop, the number of male passengers to the number of female passengers was 3: 1. At the first stop, 16 passengers got down and 6 more female passengers got in. The ratio of the male to female passengers now became 2: 1. What was the total number of passengers in the bus when it started from the first stop?

A] 105 B] 100 C] 64 D] 115

21. A container contains 50 litres of milk. From those 8 litres of milk was taken out and replaced by water. This process was repeated further two times. How much milk is now contained by the container?

A] 39.63 litres. B] 49.63 litres. C] 59.63 litres. D] 29.63 litres.

22. 25% of a solution containing 20% petrol, 50% diesel and 30% kerosene was replaced with kerosene 25% of a solution containing 20% petrol, 50% diesel and 30% kerosene was replaced with kerosene. now, 2/3 of the solution obtained in the previous step was replaced with petrol. what is the percentage of diesel in this new solution?

A] 12.5% B] 25% C] 30% D] 40%

23. The diluted wine contains only 8 liters of wine and the rest is water. A new mixture whose concentration is 30%, is to be formed by replacing wine. How many liters of mixture shall be replaced with pure wine if there was initially 32 liters of water in the mixture?

A] 3 B] 5 C] 8 D] 4

24. The ratio of water and alcohol in two different containers is 2:3 and 4:5. In what ratio we are required to mix the mixtures of two containers in order to get the new mixture in which the ratio of alcohol and water be 7:5?

A] 3: 4 B] 3: 2 C] 2: 3 D] 5: 3

25. A mixture of 70 litres of Fruit Juice and water contains 10% water. How many litres of water should be added to the mixture so that the mixture contains 12.5% water?

A] 7 lit B] 3 lit C] 1 lit D] 2 lit

26. A grocer wishes to sell a mixture of two varieties of pulses worth Rs.16 per kg. In what ratio must he mix the pulses to reach this selling price, when cost of one variety of pulses is Rs.14 per kg and the other is Rs.24 per kg?

A] 2:5 B] 4:3 C] 2:1 D] 4:1

27. Cost of two types of pulses is Rs.15 and Rs, 20 per kg, respectively. If both the pulses are mixed together in the ratio 2:3, then what should be the price of mixed variety of pulses per kg?

A] Rs. 22 per kg B] Rs. 30 per kg C] Rs. 10 per kg D] Rs. 18 per kg

28. A dealer has 1000 kg sugar and he sells a part of it at 8% profit and the rest of it at 18% profit. The overall profit he earns is 14%. What is the quantity which is sold at 18% profit?

A]250 kg B]600 kg C]620 kg D]400 kg

29. How much coffee of variety A, costing Rs. 5 a kg should be added to 20 kg of Type B coffee at Rs. 12 a kg so that the cost of the two-coffee variety mixture be worth Rs. 7 a kg?

A] 25 kg B]34 kg C]55 kg D]50 kg

30. In 40 litres of a mixture, the ratio of milk to water is 7:1. In order to make the ratio of milk to water as 3:1, the quantity of water that should be added to the mixture will be

A]6 liter B]$5\frac{1}{4}$ liter C]$6\frac{2}{3}$ liter D]$4\frac{1}{4}$ liter

31. In what ratio should wheat at Rs.9.30 per kg be mixed with wheat at Rs. 10.80 per kg so that the mixture is worth Rs.10 per kg?

A] 6: 7 B] 7: 6 C] 7: 8 D] 8: 7

32. Two Container X and Y contain spirit and water in the ratio 5: 2 and 7: 6 respectively. Find the ratio in which these mixtures be mixed to obtain a new mixture in vessel Z containing spirit and water in the ratio 8: 5?

A] 7: 9 B] 3: 4 C] 9: 7 D] 4: 3

33.The cost of rice1 is Rs. 15 per kg and rice2 is Rs.20 per kg. If both rice1 and rice2 are mixed in the ratio of 2: 3, then what is the price per kg of the mixed variety of rice?

A] Rs. 17 B] Rs. 18 C] Rs. 19 D] Rs. 16

34. Akshay has 1600 kg of sugar. He sells a part at 8% profit and the rest at 12% profit. If he gains 11% on the whole, find the quantity sold at 12%.

A] 800 kg B] 1600 kg C] 1200 kg D] 1400 kg

35. How many litres of water must be added to 16 liters of milk and water containing 10% water to make it 20% water in it?

A] 3 liter B] 2 liter C] 4 liter D] 1 liter

36. A mixture of 40 liters of milk and water contains 10% water. How much water should be added to this so that water may be 20% in the new mixture?

A] 6.5 liters B] 5 liters C] 4 liters D] 7.5 liters

37. Vessel A contains the mixture of Petrol and Diesel in the ratio of 3: 2, vessel B contains the mixture of Petrol and Kerosene in the ratio of 1: 2 and Vessel C contains mixture of Kerosene and Diesel in the ratio of 2: 3. If all the vessels are mixed in the ratio of 4: 3: 2, then find the respective ratio of Petrol, Diesel and Kerosene in the final mixture?

A] 17: 14: 14 B] 17: 14: 14 C] 17: 14: 13 D] 15: 14: 14

38. Ratio of the milk to water in vessel A to B is 3:2 and 5:6 respectively and the quantity of the milk in vessel B is 5 liters less than the quantity of the water in vessel B. If vessel A and Vessel B mixtures are mixed, then the ratio of milk to water becomes 11:10, then what is the initial quantity of vessel A?

A]60liters B]50 liters C]40 liters D]30 liters

39. A vessel contains a mixture of milk and orange juice in the ratio of x: 3. When 10 litres of milk is added to the mixture then the ratio of milk to orange juice becomes 5: 3 and when 20 litres of milk is added then the ratio of milk to orange juice becomes 7: 4. Find the initial quantity of orange juice in the mixture.

A]125 litres B]110 litres C]120 litres D]90 litres

40. The cost price of milk in vessel A is Rs.66 per liter and the cost price of milk in vessel B is Rs.51. If milk in vessel A and B are mixed, then the shopkeeper sold 37.5 liters of this mixture at the cost price of milk in vessel A while he gets the profit of 10%. If he sold the same mixture at the cost price of milk in vessel B, then what is the percentage of loss or profit earned by shopkeeper?

A]8% profit B]8% loss C]15% loss D]15% profit

SEATING ARRANGEMENT

Directions (1-5): Study the following information and answer the given question.

Eight people of which A, B, C, and D are women and P, Q, R, and S are men sit around a circular table facing towards the centre.

None of the women sit as immediate neighbour. A is not facing B. Q, who is immediate neighbour of C, faces P. R is immediate neighbour of D but not of C. D does not sit second to the right C. At least one person sits between A and R.

1. Who sit to the immediate right of S?

A] C B] A C] P D] Q

2. Who sits in front of B?

A] D B] C C] S D] Q

3. P is immediate neighbour of:

A] R B] A C] S D] Q

4. How many people sit between R and C if counted from right of R?

A] 1 B] 4 C] 3 D] 2

5. Find the odd one out.

A] B, D B] P, S C] R, Q D] C, A

Directions (6-10): Read the following information carefully and answer the questions given beside.

Eight cars viz. C1, C2, C3, C4, C5, C6, C7 and C8 are parked in two parallel rows namely row-1 and row-2 facing towards north such that the car standing in the row-2 faces the back side of the car standing in front of it in row-1. Equal number of cars stand in both the rows.

C3 stands second to the left of C4, which does not stand at any extreme end. C1 and C4 stand in different rows. C5 is third to the right of C2. C8 does not stand at any of the extreme ends. C7, which stands in row-2 is opposite to C1.

6. Three of the following four are alike in a certain way and thus form a group. Which of the following does not belong to the group?

A] C2 B] C3 C] C6 D] C8

7. Which of the following cars is parked opposite to C4?

A] C3 B] C8 C] C5 D] C1

8. Which of the following cars is not parked in row-1?

A] C6 B] C2 C] C1 D] C5

9. What is the position of C4 with respect to C3?

A] Immediate left B] Second to the left

C] Second to the right D] Immediate right

10. Which of the following cars stands opposite to C6?

A] C1 B] C5 C] C7 D] C4

Directions (11-15): These questions are based on the following information, read the comprehension carefully to answer the given questions.

Eight persons – A, B, C, D, E, F, G and H are sitting around a circular table, but not necessarily in the same order. Four of them are facing inside while rests of them are facing outside.

C is not adjacent to A, who is facing same direction as B. Two persons are sitting between E and G, who are facing different directions. B is sitting fourth to the left of E, who faces centre. E is sitting second to the right of C. Only one person is sitting between A and H, who are facing different directions. F is to the immediate left of H, who is facing same direction as E. D and F are facing same directions.

11. Who among the following faces the same direction?

A] E, B B] D, A C] H, G D] H, F

12. Three of the following four are alike in a certain way and so form a group. Find the one which does not belong to that group?

A] D B] A C] E D] F

13. B is related to H in a certain way; the same way E is related to whom?

A] D B] H C] E D] A

14. Who among the following sits second to the right of G?

A] B B] A C] G D] D

15. Which of the following pairs sit opposite to each other?

A] D, F B] E, B C] A, C D] C, H

Directions (16-20): These questions are based on the following information, read the comprehension carefully to answer the given questions.

In a classroom, there are two rows of chairs. There are 6 seats in each row of 5 people. In row-1 Iron Man, Thanos, Captain America, Thor and Spider Man are facing south while in row-2 Black Panther, Ant Man, Doctor Strange, Nebula and Hulk are facing north but not necessarily in the same order.

Iron Man is sitting second to the right of Captain America while Thanos is sitting at corner. One of the two vacant seats is in one of the corners. Thor is sitting immediately right to Spider Man. Iron Man and Nebula are related in the same manner as Ant Man and Thor are related. Thanos is sitting in front of Hulk. Black Panther is not sitting with Ant Man. The person, who is sitting in front of Ant Man, is immediately left to the Thanos. Spider Man is sitting diagonally opposite to Hulk.

16. Who is sitting immediately next to Black Panther?

A] Ant Man B] Doctor Strange C] Both Doctor Strange and Ant Man D] Hulk

17. Who among the following is sitting immediately next to one of the vacant seats?

A] Iron Man B] Nebula C] Captain America D] All of the above

18. Select the pair which sits in front of vacant seats.

A] Doctor Strange - Captain America B] Black Panther – Spider Man

C] Spider Man – Doctor Strange D] Hulk – Spider Man

19. Who sits immediately next to Captain America?

A] Thanos B] Iron Man C] Thor D] Spider Man

20. Which of the following pair/pairs sits/sit opposite each other?

A] Iron Man – Ant Man, Thor – Nebula B] Thanos – Doctor Strange

C] Thanos – Doctor Strange, Spider man – Hulk D] Spider man – Hulk

Directions (21-25): These questions are based on the following information, read the comprehension carefully to answer the given questions.

Eight people A, B, C, D, E, F, G and H are sitting around a circular table but not necessarily in the same order. Some are facing inside and some are facing outside. Not more than two people facing same direction are sitting together.

H sits third to the right of C who is not facing outside. Immediate neighbors of H are facing same directions with respect to each other but opposite direction with respect to H who is facing inside. B is the immediate neighbor of E and both are facing same direction. E sits second to the left of C who is not the immediate neighbor of B. There are equal number of persons facing inside and outside direction. B sits third to the left of A and both are facing opposite directions to each other. H sits to the immediate right of D. F sits second to the left of G.

21. How many persons are sitting between A and G while counting from left of G?

A] 1 B] 2 C] 3 D] 4

22. What is the position of F with respect to E?

A] Second to the right B] Third to the left C] Third to the right D] Second to the left

23. If all the persons sitting are equidistant and if H faces south direction, what direction will B be facing?

A] North-east B] East C] West D] South - west

24. Who is immediate neighbor of F?

A] A B] H C] C D] Both A and C

25. If D leaves the group, what will be H's position?

A] 2nd to right of G B] 2nd to the right of E

C] 2nd to the right of C D] 4th to the left of C

Directions (26-30): Read the following information carefully and answer the questions given beside.

16 persons are sitting in three rows namely Row-1,2 and 3 such that 4-4 persons sit in row 1 and row 3 and 8 persons sit in row-2. The persons sitting row-1 face south while the persons sitting in row-3 face north. The first four persons from western end of row-2 face North while the rest four face South. In this way all the persons of row-1 face the first four persons of row-2 and all the persons of row-3 face the last four persons of row-2.

B sits third to the left of G. D faces the one who is second to the right of P and H both. 2 persons sit between P and G. A sits third to the right of E, who does not face North. A is not adjacent to B. S is second to the right of the one who faces A. No one sits to the right of F. Neither S nor T sits at an extreme end. H faces the one who is on the immediate left of T. I sits third from an extreme end but does not face South. V sits second to the left of Q. 3 persons sit between J and M, who faces I. One of the persons is R.

26. Who among the following is second to the right of M?

A] P B] G C] A D] H

E] None of these

27. Who among the following faces T?

A] J B] Q C] H D] B

E] None of these

28. Find the odd one out?

A] S B] M C] Q D] P

29. Find the odd combination out?

A] E-F B] A-D C] I-P D] Q-B

30. What is the position of R with respect to T?

A] R faces T B] Second to the left

C] Third to the right D] Both are in different rows

Directions (31-35): Read the following information carefully and answer the questions given beside.

Eight persons Viraj, Sumeet, Rahul, Anup, Hiten, Deepak, Deepika and Kunal are sitting in a circle facing the centre. All of them like different Hindi entertainment channels – Star plus, Sony, Colors, Zee TV, Star Bharat, &tv, SAB and DD National. They are not necessarily seated in the mentioned order.

The one who likes Sony is to the immediate right of Hiten and Hiten does not like Star plus.

Sumeet is sitting fourth to the right of Kunal.

Deepak likes Zee TV and is sitting third to the right of the one who likes Sony.

The one who likes &tv is sitting second to the left of the one who likes Zee TV.

The one who likes SAB is sitting second to the left of Hiten.

Viraj who likes Colors is sitting exactly between Deepak and Kunal.

The one who likes Star Bharat is sitting second to the right of the one who likes Colors.

Rahul is sitting third to the left of Deepak.

Hiten is sitting third to the left of Deepika.

Neither Sumeet nor Kunal is an immediate neighbour of Hiten.

31. Who among the following sits third to the right of Deepika?

A] Hiten B] Kunal C] Viraj D] Anup

32. Who among the following sits opposite to the one who likes Zee TV?

A] one who likes Star Plus B] one who likes SAB

C] one who likes Star Bharat D] one who likes DD National

33. What is the position of the one who likes Star plus with respect to Hiten?

A] Third to the right B] Sixth to the left C] Immediate right D] Third to the left

34. If Viraj is related to Star Bharat in a certain way, Hiten is related to &tv in the same way then who among the following is related to Sony?

A] Rahul B] Anup C] Sumeet D] Deepika

35. Which of the following combinations is false?

A] Hiten - DD National B] Anup - Star plus

C] Kunal - SAB D] Sumeet - &tv

Directions (36-40): Study the following information carefully and answer the questions given below:

Ten persons A, B, C, D, E, P, Q, R, S, and T are sitting in a straight line and some of them are facing north while some of them are facing south. The distance between two persons are equal. All the above information is not necessarily in the same order.

The persons sitting at the extreme ends are facing opposite directions. P sits at the extreme end of the line. Two persons sit between P and R. S sits third to the left of R. Number of persons between P and S is same as it is between R and B. B sits fourth to the right of A. Immediate neighbors of S are facing same direction. T and C are immediate neighbors of each other and neither of them faces north nor immediate neighbor of B faces north. E sits second to the left of T. Number of persons sitting between S and D is one less than the number of persons sit between P and R. Persons facing north are not immediate neighbors of each other. C is to the immediate left of P.

36. How many persons are facing north?

A] One B] Two C] Three D] Four

37. Which of the following persons sit third to the left and third to the right of A respectively?

A] T and Q B] R and D C] D and T D] T and D

38. Who sits third to the left of B and third to the left of R?

A] Both A and S B] Both C and T C] Only A D] Only S

39. Which of the following persons sit(s) between the first-person facing north from one end and the first-person facing north from the other end of the arrangement?

A] Only C, T and R B] Only S and A C] Only S, Q and D D] Only Q and D

40. If T is related to E in some way, Q is related to A in the same way, then who is related to R in the same way?

A] A B] S C] C D] T

CLOCK AND CALENDAR

1. What angle is made by second hand in 15 sec?

   A] 15^0 B] 1.5^0 C] $(1/8)^0$ D] 90^0

2. What angle is made by hour hand in 36 sec?

   A] 120^0 B] 3^0 C] $(3/10)^0$ D] $(10/3)^0$

3. What angle is made by minute hand in 29 seconds?

   A] 174^0 B] 2.9^0 C] 29^0 D] 260^0

4. How many minutes are gained by minute hand over hour hand in 84 minutes.

   A] 77 minutes B] 54 minutes C] 62 minutes D]6 6 minutes

5. An accurate clock shows 6 o'clock in the morning. Through how may degrees will the hour hand rotate when the clock shows 4 o'clock in the afternoon?

   A] 250° B] 300° C] 360° D] 230°

6. How many degrees will the minute hand move, in the same time in which the second hand move 3600°

   A] 50° B] 60° C] 70° D] 90°

7. How many degrees will the hour hand move, in the same time in which the second hand move 2880°

   A] 3° B] 4° C] 5° D] 6°

8. What angle is made by minute and hour hand at 4: 12?

   A] 66^0 B] 44^0 C] 54^0 D] 60.5^0

9. What angle is made by minute and hour hand at 12:46?

   A] 97^0 B] 107^0 C] 154^0 D] 60.5^0

10. What angle is made by minute and hour hand at 9:53?

    A] 21.5^0 B] 20^0 C] 22^0 D] 20.5^0

11. What angle is made by minute and hour hand at 11:10?

A] 265^0 B] 175^0 C] 85^0 D] 95^0

12. The reflex angle between the hands of a clock at 9:30 is:

A] 180° B] 240° C] 250° D] 255°

13. How many times in a day, are the hands of a clock in straight line but opposite in direction?

A] 20 B] 22 C] 24 D] 48

14. How many times do the hands of a clock coincide in a day?

A] 20 B] 21 C] 22 D] 24

15. How many times in a day, are the hands of the clock at right angle?

A] 22 B] 44 C] 24 D] 48

16. How many times in 12 hrs, are the hands of the clock straight?

A] 22 B] 44 C] 11 D] 48

17. How many times, the hour hand and minute hand of a clock coincide from 3:00 to 9:00 in clock.

A]4 times B]5 times C]6 times D]7 times

18. If two clock strikes 13 times in 36 seconds then in 24 seconds, they will strike how many times?

A] 8 times B]9 times C] 10 times D]11 times

19. At what time between 10 am and 11 am will the angle between the minutes hand and hours hand be 25^0 ?

A] 10:50 B] 10:53 C] 10:54 D] 10:55

20. At what time between 8 to 9 o'clock minute and hour hand will make an angle of 90^0?

A] 8: 27 3/11 B] 8: 28 3/11 C] 8: 29 3/11 D] 8: 26 3/11

21. What is two weeks from today?

A] Same day B] Previous day C] Next day D] None

22. How many days are there in k weeks k days ?

A] 8+K DAYS B] 7+K DAYS

C] 8K DAYS D] 7/K DAYS

23. How many weekends in a non-leap year?

A] 52 B] 53 C] 103 D] 104

24. What is the number of odd days in a leap year?

A] 1 B] 2 C] 3 D] 4

25. If the third day of a month is Tuesday, which of the following would be the 25th day of that month?

A] Tuesday B] Monday C] Wednesday D] Sunday

26. Today is Wednesday, What will be the day after 27 days?

A] Monday B] Wednesday C] Friday D] Tuesday

27. Today is Wednesday, What will be the day after 62 days?

A] Monday B] Wednesday C] Friday D] Tuesday

28. Arnav's birthday is on Tuesday 14th March. On what day of the week will be Pranay's Birthday in the same year if Pranay was born on 13th September?

A] Monday B] Tuesday C] Wednesday D] Thursday

29. Aniruddh's birthday is on Sunday 2nd April. On what day of the week will be Priyansh's Birthday in the same year if Priyansh was born on 28th October??

A] Saturday B] Wednesday C] Friday D] Thursday

30. Priya's birthday is on Tuesday 11th April. On what day of the week will be Rani's Birthday in the same year if Rani was born on 31st August?

A] Monday B] Wednesday C] Tuesday D] Thursday

31. If Feb 12th,1986 falls on Wednesday then Jan 1st,1987 falls on which day?

A] Wednesday B] Tuesday C] Thursday D] Friday

32. If 6th March, 2005 is Monday, what was the day of the week on 6th March, 2004?

A] Sunday B] Saturday C] Tuesday D] Wednesday

33. Given that on 9th August 2016 is Saturday. What was the day on 9th August 1616 ?

A] Saturday B] Sunday C] Friday D] Monday

34. The maximum gap between two successive leap year is?

A]4 B]8 C] 2 D]1

35. Which of the following is not a leap year?

A] 800 B] 900 C] 1600 D] 2400

36. How many leap years are there in 160 years?

A] 80 B] 90 C] 39 D] 40

37. How many leap years are there in between 2000 to 2160 years?

A] 80 B] 90 C] 39 D] 40

38. How many leap years are there in 900 years?

A] 219 B] 217 C] 218 D] 223

39. The last day of a century cannot be

A] Tuesday B] Saturday C] Thursday D] All of the above

40. From the given options, Which two months in a year have the same calendar?

A] October and December B] April and November

C] June and October D] April and July

BLOOD RELATION AND DIRECTION SENSE

Directions (1-2): Study the information carefully and answer the questions given below.
X is sister of O. L is daughter of B and wife of Z. B and J are kids of Q and W who has only one son and one daughter. J is married to P who is father of O and has only one daughter. S, who is father-in-law of A is uncle of J. Q is father-in-law of P. A is wife of D.

1. How is W related to P?

A] Father B] Mother C] Mother- in- law D] Father-in-law

2. What is the relation of S with respect to B?

A] Uncle B] Father C] Mother D] Can't be determined

Directions (3): Some persons related to each other were going in a bus. When asked about their relationships, following were their replies:
Soni says 'Anshu is my grandmother and Joan is my paternal uncle'.
Clay says 'Nikki is my wife and Manav is my father in law'.
Nikki says 'Babu is my father in law and Soni is my daughter'.
Reet says 'Soni is my granddaughter and Nikki is my daughter in law'.

3. How many male member(s) are there in the family?

A] Two B] Three C] Four D] Five

Directions (4-6): M, N, O, P, Q, R and S are family members and there are two married couples in two generations of people who live in the same house. M is father of spouse of O. R is the maternal Uncle of S who is not a male. M is brother-in-law of R. P and S are sisters of each other. Q is son of N. O is a feminine gender.

4. How is M related to P?

A] Mother B] Father C] Uncle D] Aunt

5. If J is grandchild of M then how is N related to J?

A] Grandmother B] Grandfather C] Brother D] Sister

6. If L is maternal uncle of S then how is L related to Q?

A] Son B] Grandson C] Nephew D] Uncle

Directions (7-8): A family has 6 members – Radhey, Krishna, Madhav, Kanha, Gaur and Hari among 3 generations.
Further it is also known that:
Radhey is the son-in-law of Krishna.
Gaur who is unmarried, has a sister and Hari has an uncle.
Kanha is the grandmother of Hari.
Both the grandparents and parents of Hari are alive.

7. Which of the following does not belong to the second generation of the family?

A] Madhav B] Krishna C] Gaur D] Radhey

8. How is Radhey related to Hari's uncle?

A] Brother-in-law B] Sister-in-law C] Sister D] Brother

Directions (9-12): Some persons related to each other were going in a bus. When asked about their relationships, following were their replies:
M says ‘N is my daughter in law and R is my father in law’.
C says ‘T is my aunt and Z is my father’.
Z says ‘S is my maternal grandmother and T is not my sister’.
N says ‘Q is my father in law and L is my brother in law’.
L says ‘P is my grandfather and C is my niece’.

9. How is N related to R?

A] Granddaughter in law B] Father in law
C] Sister in law D] Granddaughter

10. How is the sister in law of L related to T?

A] Daughter B] Mother C] Sister in law D] Sister

11. How is C related to M?

A] Daughter B] Sister C] Son D] Granddaughter

12. How many female members are there in the family?

A] Three B] Four C] Five D] Six

13. Ravi started walking from his house east direction on Bus stop which is 3km.away. Then he set off in the bus straight towards his right to the school 4 km away. what is the crow flight distance from his house to the school?

A] 1 km B] 5 km C] 7 km D] 12 km

14. Hemant in order to go to university started from his house in the east and came to a crossing. The road to the left ends in a theatre, straight ahead is the hospital. In which direction is the university?

A] North B] South C] East D] West

15. Two cars start from the opposite places of a main road, 150 km apart. First car runs for 25 km and takes a right turn and then runs 15 km. It then turns left and then runs for another 25 km and then takes the direction back to reach the main road. In the meantime, due to minor break down the other car has run only 35 km along the main road. What would be the distance between two cars at this point?

A] 65 km B] 75 km C] 80 km D] 85 km

16. Amit started walking positioning his back towards the sun. After some time, he turned left, then turned right and towards the left again. In which direction is he going now?

A] North or South B] North or West C] East or West D] South or West

17. One morning after sunrise Nivedita and Niharika were talking to each other face to face at Dalphin crossing. If Niharika's shadow was exactly to the right of Nivedita, in which direction Niharika was facing?

A] North B] South C] East D] Data is inadequate

18. A child went 90 m in the East to look for his father, then he turned right and went 20 m. After this he turned right and after going 30 m he reached to his uncle's house. His father was not there. From there he went 100 m to his north and met his father. How far did he meet his father from the starting point?

A] 80 m B] 100 m C] 140 m D] 260 m

19. P started from his house towards west. After walking a distance of 25 m. He turned to the right and walked 10 m. He then again turned to the right and walked 15 m. After this he is to turn right at 135o and to cover 30 m. In which direction should he go?

A) West B] South C] South-West D] South-East

20. Afreena walks 8 km towards East and then walks 13 km back, then she turns left and walks 4 km; then walks 5 km after turning left; she turns left again and walks 3 km. How far is she from the starting point?

A) 3 km B] 2 km C] 1 km D] 6 km

21. A horse is facing north. It turns 90 degrees in the clockwise direction, then 180 degrees in the anti-clockwise and then another 90 degrees in the same direction. Which direction is the horse facing now?

A] East B] South C] Southwest D] Southeast

22. The length and breadth of a room are 8 m and 6 m respectively. A cat runs along all the four walls once and finally along a diagonal order to catch a rat. How much total distance is covered by the cat?

A] 10 B] 14 C] 38 D] 48

Directions (23): Avnish and Avni are sisters. Avanti is an unmarried son of Abish, Avanti has a brother in law Arti. Amrita is Avnish's nephew and has a brother Arun. Ankur has two daughters Ankit and Abha Arti is father of Abha Asha is the father of Arun. Asha is the brother-in-law of Avnish. Abish is the brother-in-law of Avni.

23.How many male members are there in the family?

A] Four B] Five C] Six D] Seven

Directions (24-25): Daya, who is child of Subh, is married to Prem. Bala is daughter of Subh. Subh is paternal grandfather of Geet. Rathi is only son of Daya. Prem has three children & one of them is married to Nupur. Nupur is sister-in-law of Honey. There were only 8 persons in the family.

24.How is Daya related to Nupur?

A] Daughter B] Sister C] Mother-in-law D] Father-in-Law

25.How is Honey related to Bala?

A] Aunt B] Son C] Daughter D] Niece

Directions (26-28): Micky is brother-in-law of Akku, who has two daughters but no son. Rinku is cousin of Quki and brother of Riku. Vicky has two daughters and one son. Unni has only one son and one daughter. Micky is the only sibling of Wiku. Tinu and Sanu are daughters of Xoxo. Donu is also the member of this family. Riku is granddaughter of Akku, who is married to Wiku. Unni and Vicky are sons in law of Wiku.

26.How is Wiku related to Donu?

A] Father B] Mother C] Grandfather D] Can't be determined

27.Four of the following are alike in some way. Which of the following is the odd one out?

A] Donu B] Riku C] Rinku D] Xoxo

28.How is Xoxo related to Sanu?

A] Daughter B] Mother C] Aunt D] Can't be determined

Directions (29-30): Study the following information carefully and answer the questions which follow:

L # Q means L is father of Q
L $ Q means L is son-in-law of Q
L @Q means L is daughter of Q
L * Q means L is niece of Q
L ^Q means L is brother of Q
L! Q means L is sister of Q

29.If S is Aunt of C, and then which of the following is true?
A] S!Z@X#C$B@N B] S!Z^X#C$B@N C] S!Z^X#B$C@N D] S!Z^X#N$B@C

E] None of these

30.If R$T@Y^I#P@S, then how S is related to T?

A] Aunt B] Paternal Aunt C] Maternal Aunt
D] Cannot be determined E] None of these

31. Sundar runs 20 m towards East and turns to right and runs 10 m. Then he turns to the right and runs 9 m. Again, he turns to right and runs 5 m. After this he turns to left and runs 12 m and finally, he turns to right and 6 m. Now to which direction is Sundar facing?

A] East B] West C] North D] South

32. Arun and Amit started walking from two different points 'A' and 'B' respectively. Arun walks 2 kms North and turns to the East and walks 3 kms and again turns to North walks 4 kms and finally turns to East and Walks 5kms to reach point 'C'. Similarly, Amit walks 2 kms North and turns to west and walks 3 kms and finally turns to North, walks 4 kms and meets Arun at point 'C'. What is the distance between Arun and Amit's starting points?

A] 5 km B] 8 km C] 11 km D] 13 km

33. Early morning after sunrise, Karthik was standing Infront of his house in such a way that his shadow was falling exactly behind him. He starts walking straight and walks 5 meters. He turns to his left and walks 3 meters and again turning to his left walks 2 meters. Now in which direction is he from his starting point?

A] West B] North-East C] East D] South-West

34. Laxmi goes 6 km towards South-East from her office. Then she goes 15 km turning to West. After this she goes 6 km towards North-West and in the end, she goes 11 km towards East. How far is she from her office?

A] 10 km B] 11 km C] 4 km D] 6 km

35. I travel 20 miles towards north and then travel 25 miles eastward. I then travel 40 miles rightwards, then travel 30 miles towards left and then travels 12 miles to the left and finally 20 miles northwards. How far am I approximately from my original destination and in what direction?

A] 20 miles towards south
B] 13 miles towards south-west
C] 12 miles towards east
D] 13 miles towards north-east

Study the following information and answer the questions given below:

Each of five friends A, B, C, D and E travels different distances to their work places. A travels more than B but less than E. D travels more than only C. The one, who travels the most, travels 30 km. B travels 15 km to his workplace.

36. Who amongst the following possibly travels 5 km to the workplace?

A] A
B] C
C] D
D] Either C or D

37. Ravi wants to go to the university. He starts from his home which is in the East and comes to a crossing. The road to the left ends in a theatre, straight ahead is the hospital. In Which direction is the University?

A] North
B] South
C] East
D] West

38. Reena walked from A to B in the East 10 feet. Then she turned to the right and walked 3 feet. Again, she turned to the right and walked 14 feet. How far is she from A?

A] 4 feet
B] 5 feet
C] 24 feet
D] 27 feet

39. Raman is performing yoga with his head down and legs up. His face is towards the west. In which direction, will his left hand be?

A] North
B] North – East
C] East
D] West

40. A girl facing north rotates 100(degree) clockwise then 190(degree) anticlockwise. what is new direction of the girl?

A] North-East
B] West
C] South-East
D] South

CODING-DECODING AND SERIES

1. Look at this series: 664, 332, 340, 170, ____, 89, ... What number should fill the blank?

   A]85 B]97 C]109 D]178

2. Look at this series: V, VIII, XI, XIV, __, XX, ... What number should fill the blank?

   A] IX B] XXIII C] XV D] XVII

3. Look at this series: 70, 71, 76, __, 81, 86, 70, 91, ... What number should fill the blank?

   A] 70 B] 71 C] 80 D] 96

4. Look at this series: (1/9), (1/3), 1, ____ , 9, ... What number should fill the blank?

   A] (2/3) B] 3 C] 6 D]27

5. Look at this series: 83, 73, 93, 63, __, 93, 43, ... What number should fill the blank?

   A] 33 B]53 C]73 D]93

6. In a certain code language COMPUTER is written as RFUVQNPC How will APTITUDE be written in that code language?

   A] EFEDJJOE B] EEVUJUQA C] EFEJDJOE D] EOJDJEFM

7. In a certain code language,

   '134' means 'good and tasty';
   '478' means 'see good pictures' and
   '729' means 'pictures are faint'.
   Which of the following digits stands for 'GOOD'?

A] 9 B] 2 C] 4 D] 8

8. If Z = 52 and ACT = 48, then HAT will be equal to

A] 39 B] 41 C] 44 D] 58

9. If train is called bus, bus is called calculator, calculator is called bottle, bottle is called scooter, scooter is called bicycle, bicycle is called moped, which is used for calculation in mathematics?

A] Train B] Bus C] Tractor D] bottle

10. In a certain code language 'how many goals scored' is written as '5397'; 'many more matches' is written as '982'; and 'he scored five' is written as '163'. How is 'scored' written in that code language?

A] 5 B] 7 C] 3 D] Data is not sufficient

11. In a certain code language the word EXAMPLES is written as MAXESELP. How will the word BUOYANCY be written in that language?

A] YBANCYOU B] YUOYYBAN C] YUYOYBAN D] YOUBYCNA

12. In a certain code language, "KINGFISHER" is written as "+$@*!$><^?". How is "NEIGH" written in that code language?

A] ^@$*< B] @^$<* C] @$^*< D] @^$*<

13. In a certain code, "go home" is written as "ta na" and "nice little home" is written as "na ja pa". How is "HOME" written in that code?

A] ta B] na C] ja D] na or ta

14. Some equations are solved on the basis of certain system. Find the correct answer for the unsolved equation on that basis.

5 x 4 x 3 = 70 ,
6 x 5 x 4 = 140
7 x 6 x 5 = ?

A] 210 B] 240 C] 230 D] 270

15. In a certain code language, "CUTE" is written as "9251" and "REST" is written as "4135". How is "RESCUE-T " written in that code language?

A] 413921-5 B] 431291-5 C] 423911-5 D] 413912-5

16. In a code language, DISEASE is written as 4995195. What is the code for AILMENT?

A] 1985195 B] 1923540 C] 1905195 D] 1995196

17. Look at this series: 0.15, 0.3, ____, 1.2, 2.4, ... What number should fill the blank?

A] 4.8 B] 0.006 C] 0.6 D] 0.9

18. Look at this series: U32, V29, __, X23, Y20, ... What number should fill the blank?

A] W26 B] W17 C] Z17 D] Z26

19. Look at this series: 2, 1, (1/2), (1/4), ... What number should come next?

A] (1/3) B] (1/8) C] (2/8) D] (1/16)

20. Look at this series: 7, 10, 8, 11, 9, 12, ... What number should come next?

A] 7 B]10 C]12 D]13

20. Look at this series: 36, 34, 30, 28, 24, ... What number should come next?

A] 20 B]22 C] 23 D] 26

21. In a certain code language, "DISORDER" is written as "OSIDREDR". How is "DEPARTMENT" written in that code language?

A] RACARPECIT B] RAECAREPCIT C] RACCARTICE D] RAPEDTNEMT

23. In a certain coded language, 'hit ka tom' is written as 'tie the shoes', 'ka lo fod' is written as 'shoes of leather' and 'lo tin lot' is written as 'leather and raxin'. How is 'LEATHER' written in this code language?

A] fod B] ka C] lo D] tin

24. In a certain code language, 'TRUMPET' is written as '7591427' and 'SORROW' is written as '385586'. How is 'PRESS' written in that code language?

A] 45237 B] 45233 C] 54323 D] 54233

25. If 37*14 = 17,
69*33 = 34,
91*125 = 72
then what should 30*75= ?

A] 26 B] 42 C] 35 D] 28

26. In a certain code language, "LINKS" is written as "93210" and "CROMA" is written as "84576". How is "ROCKS" written in that code language?

A] 81054 B] 83106 C] 45810 D] 10486

27. Find the missing term in given series: 0,6,48,342,___

A] 2400 B] 2401 C] 2403 D] 2399

28. Find the missing term in given series: 42,50,92,142,____

A] 234 B] 246 C]230 D] 236

29. Find the missing term in given series: 3,14,5,7,19,11,____,24,17

A] 11 B] 13 C] 19 D] 23

30. Find the missing term in given series: 306,380,462,____,650

A]552 B]554 C]560 D]582

Direction (31 - 35) Study the information and answer the following questions:

In a certain code language

" kite fly in sit" is coded as" X25G D5L S20T M14J"

"exam date are search" is coded as" L13F D5B D5E G8T"

" solution is must for" is coded as" M14T S20N R19J Q18G"

" very problem may wrong" is coded as" F7X X25N L13Q X25W"

31. **What is the code for 'school' in the given code language?**

A] K21T B] T12K C] K12T D] T21K

E] None of these

32. **What is the code for 'fight problem' in the given code language?**

A] L13Q G20S B] G20S L13Q C] S20G L13Q D] L13Q S19T

E] None of these

33. **What may be the possible code for 'money quick sky' in the given code language?**

A] X25N J11R T25X B] J11R X25T N25X

C] J11S X25U N25X D] X25N X25T J11R

E] None of these

34. **What may be the possible code for 'student' in the given code language?**

A] T21S B] S20T C] S19U D] T20N

E] None of these

35. **What is the code for 'Kind Work' in the given code language?**

A] L12X L4C B] K12X L4C C] J11X C4L D] L11X L4C

E] None of these

36. Find the missing term in given series: 182,188,194,____,206

A]200 B]202 C]198 D]201

37. Find the missing term in given series: 98, 392, 196, 784, 392, ?

A]196 B]784 C]988 D]1568

38. Find the missing term in given series: 600,456,335,____,154

A]330 B]325 C] 339 D]235

39. In a certain code ADVENTURES is written as TDRESAUVEN. How is SURPRISING written in that code?

A] IUIPGSSRNR B] IRIPGSSNRR C] IUINGSSRRP D] IUIPGSRSNR

40. If cushion is called pillow, pillow is called mat, mat is called bedsheet and bedsheet is called cover, which will be spread on the bed?

A] Bedsheet B] Mat C] Cover D] Pillow

BINARY LOGIC

Q.1. Three persons A, B and C gave these statements:

A said, either Freedom Party or Green Party won the elections.

B said, Freedom Party won.

C said, neither Freedom Party nor Green Party won the elections.

Of these persons, only one person is wrong.

Who won the elections?

A] Freedom Party B] Green Party C] Uncertain D] None of these

Q.2. The police rounded up Tolu, Molu and Golu yesterday because one of them was suspected of robbing the local bank. The 3 suspects gave following statements after intensive questioning:

Tolu: I'm innocent.

Molu: I'm innocent.

Golu: Molu is the guilty one.

Who robbed the bank among the three persons, if only one of the statements will be true?

A] Tolu B] Molu C] Golu D] Uncertain

Q.3.On an Island, three types of tribes live- Saca, Jhav and Lobe. Sacas' always tell the truth, Jhavs' always lie and Lobes' tell the truth and lie alternating (they can tell truth first or lie first). Three persons (of different tribes) from this Island give these statements.

GABE: UCKO is of Sacas tribe; I am of Lobe tribe

BORRIS: GABE is of Jhavs tribe; I am of Sacas Tribe

UCKO: BORRIS is of Jhavs tribe; I am of Lobe tribe.

GABE belongs to which tribe?

A] Jhavs B] Sacas C] Lobe D] Uncertain

Q.4. While searching for a Painter, Ali met three locals - Raj, Rajan and Roy - who always gave two replies to any question. Among them one is a truth teller, one is a liar and one is an alternator. When Ali asked them, "Who among you is the painter?", their replies were:

Raj: I am the Painter, Rajan is a liar

Rajan: I am the Painter, Roy is a liar

Roy: Rajan is the Painter, Raj is a liar.

Who among them is the painter?

A] Rajan B] Raj C] Roy D] Uncertain

Q.5. In a colony, each person is either a truth teller, who always speaks truth or a liar, who always lies or an alternator, who alternates between truth and lie in any order. When a question is asked to three persons P1,P2 and P3 whose names are P, Q, R not necessarily in the same order they replied in the following manner.

P1: I am Q.

Exactly one of us is liar.

P2: Exactly one of us is truth teller

P3 is P

P3: Exactly one of us is an alternator

I am not R

If there is at least one truth teller, then who is R?

A] P2 B] P1 C] P3 D] Uncertain

Q.6. In Honololo Island, there are two types of people-truth tellers and liars. Truth-tellers always speak truth and liars always lie. I met three residents Ho, Lo, and Po, and asked them "who among you is the liar?" The Following are their replies.

Ho: I am a truth-teller.

Lo: Ho is not a truth-teller.

Po: Lo is not a liar.

If it is known that exactly one person among them is a liar and the other two are truth-tellers, then who among them is the liar?

A] Ho B] Lo C] Po D] Uncertain

7. Fact 1: Mary said, "Ann and I both have cats."

Fact 2: Ann said, "I don't have a cat."

Fact 3: Mary always tells the truth, but Ann sometimes lies.

If the first three statements are facts, which of the following statements must also be a fact?

I: Ann has a cat.

II: Mary has a cat.

III: Ann is lying.

A] I only B] II only C] I and II only D] All the statements.

8. All Lamels are Signots with buttons.

No yellow Signots have buttons.

No Lamels are yellow.

If the first two statements are true, the third statement is

A] True B] False C] Uncertain

9. A four-person crew from Classic Colours is painting Mr. Field's house. Michael is painting the front of the house. Ross is in the alley behind the house painting the back. Jed is painting the window frames on the north side; Shawn is on the south. If Michael switches places with Jed, and Jed then switches places with Shawn, where is Shawn?

A] in the alley behind the house B] on the north side of the house

C] in front of the house D] on the south side of the house

10. In a four-day period Monday through Thursday each of the following temporary office workers worked only one day, each a different day. Ms. Johnson was scheduled to work on Monday, but she traded with Mr. Carter, who was originally scheduled to work on

Wednesday. Ms. Falk traded with Mr. Kirk, who was originally scheduled to work on Thursday. After all the switching was done, who worked on Tuesday?

A] Mr. Carter B] Ms. Falk C] Ms. Johnson D] Mr. Kirk

11. Ms. Forest likes to let her students choose who their partners will be; however, no pair of students may work together more than seven class periods in a row. Adam and Baxter have studied together seven class periods in a row. Carter and Dennis have worked together three class periods in a row. Carter does not want to work with Adam. Who should be assigned to work with Baxter?

A] Carter B] Adam C] Dennis D] Forest

DIRECTIONS (12 – 13): Consider the following statements and answer the questions that follow.

Three criminals were arrested for shop lifting. However, when interrogated, only one of them told the truth in both his statements, while the other two each told one true statement and one lie. The statements were:

Ti-Ti: (a) Chi-Chi passed the goods. (b) Ki- Ki created the diversion.

Ki-Ki: (a) Ti-Ti passed the goods. (b) I created the diversion.

Chi-Chi: (a) I took the goods out of the shop. (b) Ki-Ki passed goods.

12. Who created the diversion?

A] Ti-Ti B] Chi-Chi C] Ki-Ki D] Either A or B

13. Which of these statements is correct?

A] Chi-Chi created the diversion. B] Ti-Ti took the goods out of the shop.

C] Chi-Chi passed the goods. D] Ti-Ti passed the goods.

DIRECTIONS (14 – 15): Consider the following statements and answer the questions that follow.

Chetan, Mohan and Thomas participated in a race and one of them won the race. They belong to three different communities - Saki, Noro and Carro. Sakis always speaks the truth, Noro's always lie and Carros tell the truth and lie alternatively. (Each of Chetan, Mohan and Thomas belongs to one community.) After the race they gave these statements.

Chetan: I would have won the race if Thomas had not obstructed me at the last moment.

Thomas always speaks the truth.

Mohan: Chetan won the race.

Thomas is not a Noro.

Thomas: I hadn't obstructed Chetan at the last moment.

Mohan won the race.

14. Thomas belongs to which community?

A] Saki B] Noro C] Carro D] Either B or C

15. Who won the race?

A] Mohan B] Thomas C] Chetan D] Data Inadequate

Direction (16-17): On an island 'Mola-Moola' the inhabitants always answer any question with two sentences —one of which is always true and the other always false. Read the question below very carefully and choose the correct answer for the questions that follow: The commissioner of the island discovers that smuggling is rampant there. You have been hired as a private detective in order to determine the identity of the culprits and also to know more about the next heist on the basis of a plane. You question three suspects as to when the plane is expected and what it looks like. This is what they have to say: Subhash: It arrives at 11:00 p.m. The colour of the plane is only red. Rubhash: It arrives at 11:00 p.m. The colour of the plane is only yellow. Bibhash: I know at what time the ship arrives. Rubhash is lying about the time of arrival.

16. At what time does the plane arrive?

A] 6 p.m. B]11 p.m. C] Can't say D] Won't arrive

17. What is the colour of the plane?

A] Can't say B] Red C] Yellow D] Both red and yellow

18. Suddenly, a murder takes place on the island. It is imperative that you locate the person who is the murderer. On further investigation, you find that the murderer has to be a person who has been to the chief whip's house within the last five days (today is Friday). By careful questioning, you narrow the possibilities down to three people. This is what they have to say.

Rani: ''I went to the Chief Whip's house. It was before Monday."

Vani: "Rani did not go to the Chief Whip's house. I have not gone to the Chief Whip's house in the last five days either".

Siwani: "Rani did not go to the Chief Whip's house. I am not the murderer."

Who is the murderer?

A] Siwani B] Rani C] Vani D] Can't say

Direction (19-20): In the village of Rampur, all inhabitants always answer any question with two sentences, one of which is always true, the other is always false.

While visiting the village, Gauri meets three inhabitants—Rajesh, Mahesh and Ramesh near the village square. One of them is wearing a suit. Knowing that they were there to resolve a dispute over the ownership of some land, you ask them— "Who got the land?" They answer as follows:

Rajesh: "I got the land. Ramesh is wearing the suit."

Mahesh: "I am wearing the suit. I got the land."

Ramesh: "I got the land. I am not wearing the suit."

19. Who is wearing the suit?

A] Rajesh B] Mahesh C] Ramesh D] None of these

20. Who got the land?

A] Rajesh B] Can't say C] Ramesh D] Mahesh

21. On waking up the next morning, you find that your brand-new watch has been stolen. The suspects are the same trio you met the previous day. You question them (knowing that only one of them is guilty).

And they reply as follows:

Rajesh: “Mahesh did not do it. I did not do it.”

Mahesh: “I did not do it. Ramesh did not do it.”

Ramesh: “I did not do it. I do not know who did it.”

Who stole the watch?

A] Can’t say B] Ramesh C] Mahesh D] Rajesh

Direction (22-23): In a small island called Never neverland, the people always answer any question with two sentences —one of which is always right and the other is false.

Perhaps due to this peculiar habit, there’s been a high rate of suicides on the island. As a doctor, you have to identify potentially suicidal people and counsel them. You know that all people who are suicidal feel that life is futile. On questioning three inhabitants, these are the answers you get:

Anuj: “Himansu is suicidal. I am not suicidal.”

Himansu: “I do not want to die. Akshay does not want to die.”

Akshay: “Life is futile. I am suicidal.”

22. Who among the three is suicidal?

A] Anuj and Himansu B] Himansu C] Himansu and Akshay D] Akshay

23. Which of them is lying about another person’s tendencies?

A] Akshay B] Himansu C] Anuj and Himansu

D] None of them is lying about another person’s tendencies

24. Going around the village, you come across three people. One of them is a dentist, one a barrister and one a professor. You want to know who is who.

Peter says, ‘‘I am not a professor. Shina is not a professor.”

Matt says, ‘‘Peter is not a barrister. Shina is a professor.”

Shina says, ‘‘Peter is not a dentist. I am not a professor.”

Which of the following is true?

A] Shina is the professor B] Peter is the dentist C] Matt is the barrister.

D] None of these.

25. Further, you come across three women, one of whom is an excellent singer. You start questioning them, when you notice that Minaxi is wearing a flower in her hair.

Madhuri says, ‘‘I am not the singer. The singer wears a flower in her hair.”

Minaxi says, ‘‘I am the singer. The singer is amongst us.”

Jaya says, ‘‘Madhuri is the singer. Minaxi is not the singer.”

Who is the singer?

A] Madhuri B] Minaxi C] Jaya D]None of these

26. You want to expand your horizons and decide to go to the village of “Where is Who”, which is further inside. You come to the border of “Kya Kya” and see a fork. One leads left and the other right. There are no other roads. You ask the inhabitants:

Maroof says, ‘‘I do not speak to strangers. I am new to these parts.”

Nafish says, “Take the road to the right. I am married to Ayesha.”

Ayesha says, “I am not Nafish’s wife. Maroof is not new to these parts.”

Which of the following is true?

A] The road to the right leads to “Where is Who”.

B] The road to the left leads to “Where is Who”.

C] Nafish is married to Ayesha. D] None of these.

27. On moving further, you come across another small village of Patina, whose inhabitants answer all questions with two sentences—one of which is true and the other always false.

I asked Shahrukh, Amitabh and Abhishek, “Did it snow last night?” and I got the following replies:

Shahrukh: Yes, it snowed last night. Moreover, Amitabh fell sick last night.

Amitabh: Yes, it snowed last night. But then I never lie.

Abhishek: No, it did not snow last night. But Shahrukh got married yesterday.

Which of the following statements is true?

A] It did not snow last night. B] Amitabh fell sick last night

C] Shahrukh got married yesterday D] None of these.

Direction (28-29): Rophas Khopas is a small land locked country in the Vindhyanchal forest range, with a distinct dress, culture, food habits, national language, national dance, a national bird, and a national animal. The inhabitants speak in two sentences—one of which is true and the other false.

I asked Shiva, Monu and Vijay, the three important citizens of Rophas Khopas, “What is the national language of Rophas Khopas?” and I got the following replies:

Shiva: “French is our national language. Hundred percent of our citizens are literate.”

Monu: Latin is our national language. We have a very poor literacy rate in the country.

Vijay: We have a very poor literacy rate in the country. Our national language is Bhasha Khopas.

28. The national language of Rophas Khopas is

A] French B] Latin C] Bhasha Khopas D] Cannot be ascertained

29. With reference to question 13 above, the rate of literacy in Rophas Khopas is

A] Very poor B] Good C] 100% D] Cannot be ascertained

30. I asked Shiva, Monu and Vijay, “What is your national dress?” and I got the following replies: Shiva: Our national dress is Pathani suit. People wear the national dress on very special occasions only.

Monu: Our national dress is Sari. People wear the national dress on very special occasions only.

Vijay: Our national dress is suit boot. But no one is ever permitted to wear the national dress.

The national dress of Rophas Khopas is

A] Pathani suit B] Sari C] Suit Boot D] Cannot be ascertained

Direction (31-32): I asked Shiva, Monu and Vijay, “What is your national food?” and I got the following replies:

Shiva: Our national food is sabudana khichdi. Most of our people are hale and hearty.

Monu: Our people are not hale and hearty at all. Our national food is makki ki roti.

Vijay: Most of our people are hale and hearty. Our national food is rice kee kheer.

31. The national food of Rophas Khopas is:

A] sabudana khichdi B] makki ki roti C] rice kee kheer

D] Cannot be ascertained

32. With reference to Question 16 above, in Rophas Khopas:

A] people are not hale and hearty. B] some people are hale and hearty.

C] most people are hale and hearty. D] cannot be ascertained.

33. I asked Shiva, Monu and Vijay, “What is your national bird?” and got the following replies:

Shiva: Our national bird is cackatoo. We are a peace loving country.

Monu. Our national bird is sparrow. We are a peace loving country.

Vijay: Our national bird is owl. But we worship the sparrow.

The national bird of Rophas Khopas is

A] Sparrow B] Cackatoo C] Owl D] Cannot be ascertained.

34. I asked Shiva, Monu and Vijay, “What is your national animal?” and I got following replies:

Shiva: Our national bird is kangaroo. We have thick growth of vegetation all over.

Monu: Our national bird is donkey. We have thick growth of vegetation all over.

Vijay: Ours is a mountainous country with almost no vegetation. Our national animal is koala.

The national animal of Rophas Khopas is

A] Kangaroo B] Donkey C] Koala D] Cannot be ascertained.

35. I asked Shiva, Monu and Vijay, “What is your national dance?” and got the following replies: Shiva: Samba is our national dance. We do not like or appreciate cricket.

Monu: Salsa is our national dance. We are great lovers of aggressive cricket.

Vijay: Disco is our national dance. We are great lovers of aggressive cricket.

The national dance of Rophas Khopas is

A] Samba B] Salsa C] Disco D] Cannot be ascertained.

36. With reference to Question 35 above, people of Rophas Khopas:

A] do not like or appreciate cricket. B] like and appreciate cricket.

C] are great lovers of aggressive cricket. D] Cannot be ascertained.

Direction (37-40): In the parliament of the Ravindra Rami, all members have a peculiar habit. Of any two sentences they speak, one is false and the other is true. You record the statements of three sitting members: Rozor, Sam, and Michael.

Rozor: The President claims he is the President. I am the President.

Sam: I am the President. Rozor is the President.

Michael: I am the President. Sam knows who is the President.

Answer the following questions based on these recorded statements.

37. The real President can be determined from

A] Sam's and Rozor's statements alone. B] Sam's and Michael's statements alone.

C] Michael's and Rozor's statements alone. D] None of the above.

38. If Rozor's first statement is false, which of the following cannot be President?

A] Sam B] Rozor C] Michael D] Rozor's first statement cannot be false.

39. Who is the President?

A] Sam B] Rozor C] Michael D] Can't be determined

40. Whose first statement is true?

A] Sam and Michael B] Michael and Rozor

C] Sam and Rozor D] Can't be determined

TIME AND WORK

1. 16 men complete one – fourth of a piece of work in 12 days. What is the additional number of men required to complete the work in 12 more days?

A] 48 B] 36 C] 30 D] 16

2. Jagdish can build a wall in 10 days. Narender can build the same wall in 12 days while Sumit takes 15 days to do the same job. Which two of them should be employed to finish the job in 6 days?

A] Jagdish and Narender B] Jagdish and Sumit
C] Sumit and Narender D] None of the above

3. Three friends Gerard, Runey work together to dig a hole. Gerard alone can complete the work in 10 days and together they can complete it in 4 days. They earn a total of Rs.1,200. Find the share of Runey if the money that they receive is proportional to work that they do?
A] Rs 720 B] Rs 165.51 D] Rs 500 D] Rs 600

4. A and B can finish a piece of work in 20 days. B and C in 30 days and C and A in 40 days. In how many days will A alone finish the job

A] 48 B] 34 2/7 C] 44 D] 45

5. A team P of 20 engineers can complete a task in 32 days. Another team Q of 16 engineers can complete the same task in 30 days. Then the ratio of working capacity of 1 member of P to that of a member of Q is:

A] 3:2 B] 3:4 C] 2:5 D] 3:5

6. Susan can type 10 pages in 5 minutes. Mary can type 5 pages in 10 minutes. Working together, how many pages can they type in 30 minutes?
A] 15 B] 20 C] 25 D] 75

7. A team of 200 wagers undertakes building work of a bridge. The total time allocated to build entire bridge is 20 days. After 10 days since start, 200 more wagers join the team and together the team completes the bridge in required time. If original team do not get those 200 extra wagers, how many days they would be behind schedule to complete bridge.
A] 10 days B] 20 days C] 15 days D] 1 day

8. Mary and John can do a piece of work in 24 days; John and Vino in 30 days; Vino and Mary in 40 days. If Mary, John and Vino work together they will complete the work in:
A] 10 days B] 20 days C] 17 days D] 15 days

9. A can do a piece of work in 100 days, B and C together can do the same work in 20 days. If B can do the work in same time as that of C and A together then how long C alone can do the same work?
A] 100 days B] 50days C] 25days D] 20 days

10. Grass in lawn grows equally thick and in a uniform rate. It takes 24 days for 70 cows and 60 for 30 cows. How many cows can eat away the same in 96 days?
A] 18 B] 20 C] 21 D] 19

11. A group of women can finish a piece of work in 50 days. In how many days will one-third the number of women be able to finish two-third of the work?
A] 150 days B] 75 days C] 50 days D] 100 days

12. An intern can a job in 15 days. The manager and senior manager are busy with other priorities and thus take 25 and 40 days respectively to complete the task. How long will they task to finish the task if all of them work together?
A] 7 B] $7^{22}/29$ C] 8 D]$8^{21}/29$ E] None of these

13. 3 friends Gerard, Rooney and Ronaldson work together to dig a hole. Gerard alone can complete the work in 10 days, Rooney in 8 days and together all three can complete it in 4 days. They earn a total of Rs. 1,200. Find the share of Rooney if the money that they receive is proportional to the work that they do?
A] Rs.480 B] Rs.165.51 C] Rs.500 D] Rs.600

14. Paul can complete a project in 6 days. With the help of an intern, he can do it in 4 days. In what time can the intern complete the project alone?
A] 6 days B] $6\ \frac{1}{4}$ days C] 12 days D] $12\ \frac{1}{2}$ days

15. Pardeep receives an export order for garments. He has 30 machines to complete the order in 60 days. How many machines would be required tom complete the job in 40 days?
A] 50 B] 25 C] 35 D] 45

16. In a poultry farm, 50 hens give 200 eggs in 2 days. In how many days, will 20 hens give 400 eggs?
A] 15 B] 10 C] 5 D] 8

17. Akshay, Bimal and Chirag work on a construction project. All of them work with equal efficiency and can together complete the project in 20 days. If only 2of them work on it at a time and all of them spend equal days to complete the project how many days would each one of them work for, to complete the work?

A] 10 B] 15 C] 30 D] 20

18. A customer paid you $600 for construction work, out of which, 3/5 of the total amount was spent on the purchase of materials and 1/5 of the remaining was spent on traveling. How much is left after all the deductions?

A] $120 B] $190 C] $192 D] $240

19. Working 5 hours a day, A can Complete a work in 8 days and working 6 hours a day, B can complete the same work in 10 days. Working 8 hours a day, they can jointly complete the work in how many days?

A] 3 days B] 4 days C] 4.5 days D] 5.4 days

20. If 15 oxen or 20 cows can eat the grass of a field in 80 days, then in how many days will 6 oxen and 2 cows eat the same grass?

A] 40 B] 60 C] 100 D] 160

21. A and B together can do a piece of work in 18 days, B and C in 24 days, and A and C in 36 days. The number of days all of them working together take to complete the work is:

A] 15 B] 18 C] 16 D] 17

22. In the beginning, Ram works at a rate such that he can finish a piece of work in 24 hrs, but he only works at this rate for 16 hrs. After that, he works at a rate such that he can do the whole work in 18 hrs. If Ram is to finish this work at a stretch, how many hours will he take to finish this work?

A] 12 hrs B] 22 hrs C] 11½ hrs D] 15 hrs

23. A can do a piece of work in 10 days, and B can do the same work in 20 days. With the help of C, they finished the work in 4 days. C can do the work in how many days, working alone?

A] 5 days. B]10 days C] 15 days D] 20 days

24. A can do a piece of work in 12 days. B can do this work in 16 days. A started the work alone. After how many days should B join him, so that the work is finished in 9 days?

A] 2 days B] 3 days C] 4 days D] 5 days

25. A and B can do a piece of work in 4 days, while C and D can do the same work in 12 days. In how many days will A, B, C and D do it together?

A] 12 days B] 4 days C] 3 days D] 2 days

26. A and B can do a piece of work in 40 days, B and C can do it in 120 days. If B alone can do it in 180 days, in how many days will A and C do it together?

A] 45 days B] 22.5 days C] 25 days D] 18 days

27. A, B, C, and D can do a piece of work in 20 days. If A and B can do it together in 50 days, and C alone in 60 days, find the time in which D alone can do it.

A] 75 days B] 200 days C] 150 days D] 90 days

28. A, B, and C can do a piece of work in 8 days. B and C together do it in 24 days. B alone can do it in 40 days. In what time will it be done by C working alone?

A] 25 days B] 24 days C] 60 days D] 20 days

29. A and B undertake to do a piece of work for Rs. 450. A can do it in 20 days and B can do it in 40 days. With the help of C, they finish it in 8 days. How much should C be paid for his contribution?

A] Rs. 180 B] Rs. 40 C] Rs. 120 D] Rs. 60

30. Daku and Tamatar can do a piece of work in 70 and 60 days respectively. They began the work together, but Daku leaves after some days and Tamatar finished the remaining work in 47 days. After how many days did Daku leave?

A] 14 days B] 7 days C] 18 days D] 10 days

31. Ajay and Vijay undertake to do a piece of work for Rs. 480. Ajay alone can do it in 75 days while Vijay alone can do it in 40 days. With the help of Pradeep, they finish the work in 25 days. How much should Pradeep get for his work?

A] Rs. 40 B] Rs. 20 C] Rs. 360 D] Rs. 100

32. Thomas takes 7 days to paint a house completely whereas Aashay requires 9 days to paint the same house completely. how many days will take to paint the house if both them work together?

A] 3.9 B] 2 C] 5 D] 3

33. Jake can dig a well in 16 days. Paul can dig the same well in 24 days. Jake, Paul and Hari together dig the well in 8 days. Hari alone can dig the well in?

A] 48 days B] 24 days C] 27 days D] 36 days

34. A alone can do 1/4th of the work in 2 days. B alone can do 2/3th of the work in 4 days. If all the three work together, they can complete it in 3 days so what part of the work will be completed by C in 2 days?

A] 1/20 B] 1/12 C] 1/8 D] 1/16

35. A certain sum of money is sufficient to pay either George wages for 15 days or Mark wages for 10 days. For how long will it be sufficient if both George and Mark work together?

A] 5 days B] 6 days C] 8 days D] 9 days

36. Babli alone can do a piece of work in 10 days Ashu alone can do it in 15 days. The total wages for the work in Rs.5000. How much should Babli be paid off they work together for entire duration of the work?

A] 5000 B] 4000 C] 3000 D] 2000

37. 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] 15 days B] 20 days C] 12 days D] 9 days

38. 4 men can check exam papers in 8 days working 5 hours regularly. What are the total hours when 2 men will check the double of the papers in 20 days?

A] 9 hours B] 4 hours C] 8 hours D] none

39. George does 3/5th of a piece of work in 9 days. He then calls Paul. and they finish the work in 4 days. How long would Paul take to do the work by himself?

A] 30 days B] 35 days C] 32 days D] 28 days

40. Y can do a work in 2/3 the time it takes x, z can do same work in ¾ time it takes y. when all three are typing the same time what is the fraction of total work does y do?

A] 1/3 B] 8/29 C] 4/13 D] 9/23

PIPE AND CISTERN

1. Two inlet pipes can fill an empty tank in 15 and 18 hours and one outlet pipe can empty the tank in 20 hours. If all the pipes opened simultaneously, then how many hours required fill the full tank?

A. $11\frac{8}{11}$ hours

B. $12\frac{5}{7}$ hours

C. $13\frac{11}{13}$ hours

D. $9\frac{5}{9}$ hours

E. None of these

2. Two pipes A and B alone can fill an empty tank in 20 min and 24 min respectively. Two pipes are opened simultaneously, after some time pipe B is closed. In how many minutes after pipe B is closed if the tank was filled in 15 minutes

A. 5 min
B. 6 min
C. 4 min
D. 4.5 min
E. None of these

3. A tank has a leak which can empty a full tank in 28 minutes. A tap is turned on which can fill 2.5 liters a minutes. The tank now becomes empty in 42 minutes. What is the capacity of the tank?

A. 210 liters
B. 342 liters
C. 250 liters
D. 389 liters
E. None of these

4. Two pipes A and B can fill a tank in 15 minutes and 25 minutes respectively. Both pipes are opened together and pipe B isclosed,5 minutes before the tank is filled

completely. Calculate the total time required to fill the tank?

A. 11 ¼ min

B. $13\frac{3}{5}$ min

C. $12\frac{7}{8}$ min

D. $14\frac{5}{6}$ min

E. None of these

5. Pipe P can fill an empty tank in 24 hours and pipe Q can fill the same tank in16 hours. How many hours required to fill the whole tank, if P and Q fill alternatively doing the work, P begins on first hour?

A. $17\frac{1}{2}$

B. $19\frac{1}{3}$

C. $18\frac{1}{3}$

D. $18\frac{3}{5}$

E. None of these

6. B is 5/4 times as efficient as A. If A can fill the 3/5 of the tank in 15 min, what fraction of the capacity of the tank would remain incomplete if B can fill the tank independently for 10 min only?
A. 2/3
B. 1/3
C. 1/4
D. 1/2
E. None of these

7. A tank is fitted with 2 inlet pipes A and B. Both pipes are kept open for 15 minutes to fill 3/5 of the tank and pipe A is closed. If pipe A is thrice as fast aspipe B. How much time will be taken by B alone to complete the remaining work?
A. 45min
B. 50 min
C. 40min
D. 30min
E. None of these

8. Two water taps T1 and T2 can fill a tank in 900 seconds and 2400 seconds respectively. Both the taps are opened together but after 240 seconds, tap T1 is turned off. What is the total time required to fill the tank?
A. 30 min 10 sec
B. 25 min 20 sec
C. 14 min 40 sec
D. 20 min 10 sec
E. None of these

9. Three taps T1, T2 and T3 can fill a tank in 720, 900 and 1200 minutesrespectively. If T1 is open all the time and T2 and T3 are open for one hour each alternately, the tank will be full in:
A. 6 2/3 hours
B. 9 hours
C. 4 hours
D. 7 hours
E. None of these

10. Two taps can fill a cistern in 30 and 40 minutes respectively. If both the tapsare opened simultaneously then the approximate time taken to fill the cistern is:

A. 17 minutes

B. 12 minutes

C. 19 minutes

D. 21 minutes

E. None of these

11. Three taps A,B and C are used to fill a cistern. Tap A alone can fill the cisternin 9 minutes. Tap B can fill in 6 minutes and Tap C can fill in 3 minutes. How many minutes will it take to fill this cistern if all the three taps are used simultaneously?

A. $2\frac{3}{7}$

B. $1\frac{7}{11}$

C. $3\frac{2}{11}$

D. $5\frac{6}{7}$

E. None of these

12. A water tank normally takes 14 hours to be filled by a tap but because of the leak, it takes another 4 hours. In how many hours will the leak empty a full watertank?

A. 50.5 hours

B. 54.4 hours

C. 60 hours

D. 63 hours

E. None of these

13. Half of the water tank is filled manually. Tap A can fill the tank in 20 minutesand B can empty the tank in 12 minutes. If A and B are opened together, then thetime taken to empty or fill the tank is:

A. 30 minutes

B. 15/2 minutes

C. 60 minutes

D. 45/2 minutes
E. None of these

14. Three pipes A, B and C can fill a tank in 12 minutes, 16 minutes and 24 minutes respectively. The pipe C is closed 3 minutes before the tank is filled. Inwhat time will the tank be full?
A. 7 minutes
B. 5 minutes
C. 4 minutes
D. 6 minutes
E. 8 minutes

15. Two pipes P and Q, would fill a cistern in 18 and 24 minutes respectively. Both pipes being opened, find when the first pipe must be turned off so that thecistern may be just filled in 12 minutes?
A. after 12 min.
B. after 9 min
C. after 8 min 30 seconds
D. after 10 min.
E. None of these

16. Pipes A and B can fill a cistern in 8 and 24 minutes respectively. They are opened on alternate minutes. Find in how many minutes, the cistern shall be full?
A. 6 min
B. 12 min
C. 18 min
D. 24 min
E. 30 min

17. A pipe can fill a tank in 6 hours, but due to a leakage it took 8 hours to fill thetank. If the tank is full, in what time will the tank become empty due to the leakage?
A. 48hrs
B. 26hrs
C. 24hrs
D. 16hrs
E. None of these

18. Tap A can empty a tank in 6 hours and another tap B can fill the tank at the rateof 15 l/min. If both the taps are opened the tank can be emptied in 10 hours then find the capacity of tank?

A. 13,200 ℓ
B. 14,500ℓ
C. 13,700ℓ
D. 13,500ℓ
E. 12,240ℓ

19. Three taps A, B and C are connected to a water tank and the rate of flow of water from them is 42 litres/hr, 56 litre/hr and 48 litres/hr. Tap A and B fill the tank and tap C empties it. If the tank gets completely filled in 16 hours, what is thecapacity of the tank?

A. 146 litres
B. 960 litres
C. 800 litres
D. 1200 litres
E. 500 litres

20. Tap A fills tank in 10 hours and B can fill it in 15 hours. Both are opened simultaneously. After some time tap B was closed and time taken to fill the wholetank was 8 hours. B was opened for how much time?

A. 2 hours
B. 3 hours
C. 4 hours
D. 5 hours
E. 7 hours

21. Two Inlet Pipes A and B together can fill a Tank in 'X' minutes. If A and Btake 81 minutes and 49 minutes more than 'X' minutes respectively, to fill the Tank. Then They can fill the 5/7 of that Tank in how many minutes?

A. 45 Minutes
B. 49 Minutes
C. 63 Minutes
D. 81 Minutes
E. None

22. If the ratio of Rate of filling of two Pipes A and B is 3:2. If together they canfill a Tank 5/6th of Tank in 20 minutes. Then in how many does A alone can fillthe Tank?

A. 20 Minutes
B. 30 Minutes
C. 40 Minutes
D. 50 Minutes
E. 60 Minutes

23. Two Pipes A and B together can fill a Tank in 'X' minutes. If 'A' is Inlet Pipecan Fill the Tank alone in 40 minutes less than 'X' minutes and 'B' is Outlet pipecan empty the Tank alone in 30 minutes less than 'X' minutes. Then together theycan fill the empty Tank in how many minutes?
A. 48 Minutes
B. 54 Minutes
C. 60 Minutes
D. 70 Minutes
E. None

24. If a pipe A can fill a tank 3 times faster than pipe B. If both the pipes can fillthe tank in 32 minutes, then the slower pipe alone will be able to fill the tank in?
A. 128 minutes
B. 124 minutes
C. 154 minutes
D. 168 minutes
E. None of the Above

25. A pipe can fill a cistern in 16 hours. After half the tank is filled, three more similar taps are opened. What is the total time taken to fill the cistern completely?
A. 3 hours
B. 2 hours
C. 9 hours
D. 4 hours
E. None of the Above

26. Pipe A fills a tank in 30 minutes. Pipe B can fill the same tank 5 times as fast as pipe A. If both the pipes were kept open when the tank is empty, how much timewill it take for the tank to overflow?
A. 3 minutes

B. 2 minutes
C. 5 minutes
D. 4 minutes
E. None of the Above

27. 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 thethree 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
E. 95 minutes

28. Tap A can fill a water tank in 25 minutes, tap B can fill the same tank in 40 minutes and tap C can empty the tank in 30 minutes. If all the three taps are openedtogether, in how many minutes will the tank be completely filled up or emptied?
A. $32\frac{2}{9}$
B. $30\frac{10}{19}$
C. $33\frac{3}{19}$
D. $31\frac{11}{19}$
E. None of these

29. If a pipe A can fill a tank 3 times faster than pipe B and takes 32 minutes lessthan pipe B to fill the tank. If both the pipes are opened simultaneously, then findthe time taken to fill the tank?
A. 14 minutes
B. 12 minutes
C. 15 minutes
D. 16 minutes
E. None of the Above

30. If a pipe A can fill a tank 3 times faster than pipe B. If both the pipes can fillthe tank in 42 minutes, then the slower pipe alone will be able to fill the tank in?

A. 148 minutes
B. 124 minutes
C. 154 minutes
D. 168 minutes
E. None of the Above

31. Three pipes, A, B, & C are attached to a tank. A & B can fill it in 20 & 30 minutes respectively while C can empty it in 15 minutes. If A, B & C are kept opensuccessively for 1 minute each, in how many minutes will the tank be filled?

A. 167
B. 171
C. 168
D. 180
E. None of these

32. If a pipe can fill the tank within 6 hrs. But due to leak it takes 30 min more. Now the tank is full then how much time will it take to empty the tank through theleak?

A. 78 hrs
B. 56 hrs
C. 66 hrs
D. 59 hrs
E. 45 hrs

33. Two pipes A and B can fill a tank in 8 minutes and 12 minutes respectively. Ifboth the pipes are opened simultaneously, after what time should B be closed so that the tank is full in 6 minutes?

A. 1 min
B. 2 min
C. 3 min
D. 4 min
E. None of these

34. One pipe fill 1/4 of the tank in 4 minutes and another pipe fills 1/5 of the tankin 4 minutes. Find the time taken by both pipe together to fill half the tank?

A. 40/9 minutes

B. 50/9 minutes

C. 53/9 minutes

D. None of these

35. Pipe P is 4 times as fast as Q in filling a tank. If P takes 20 minutes to fill a tank, then what is the time taken by both the pipe P and Q to fill the tank?

A] 12 B] 16 C] 18 D] 20 E] None of these

36. A pipe can fill a tank in 20 minutes but due to a leak develop at the bottom of the tank, 1/5 of the water filled by the pipe leaks out. Find the time in which the tank is filled.

A] 20 min B] 25 min C] 30 min D] Can't be determined
E] None of these

37. There are 10 taps connected to a tank. Some of them are waste pipe and some of them are water pipe. Water pipe can fill the tank in 15 hours and waste pipe can empty the tank in 30 hours. Find the number of waste pipes if the tank is filled in 6 hours.

A] 3 B] 4 C] 5 D] 7 E] None of these

38. There are 4 filling pipes and 3 emptying pipes capable of filling and emptying in 12 minutes and 15 minutes respectively. If all the pipes are opened together and as a result they fill 10 litres of water per minute. Find the capacity of the tank.

A] 65 ltr B] 70 ltr C] 75 ltr D] 80 ltr E] None of these

39. Two taps can separately fill the tank in 10m and 15min respectively. They fill the tank in 12 minutes when a third pipe which empties the tank is also opened. What is the time taken by the third pipe to empty the whole tank?

A] 14 min B] 15 min C] 12 min D] 20 min E] 16 min

40. Two pipes A and B can fill a tank in 12 hours and 15 hours respectively. If they are opened on alternate hours with pipe A opened first, then in how many hours the tank will be full?

A] 13 hrs B] 14 ½ hrs C] 12 hrs D] 12 ½ hrs E] 10 2/3 hrs

TIME, SPEED, DISTANCE AND TRAINS

1. A car takes half of the time taken by truck to go from Lucknow to Bombay. A truck takes 20 hours to go for the same journey. What is the speed of the truck, if the speed of the car is 120 km/hr?
   A] 50kmph B] 40kmph C] 60kmph D] None of these

2. The ratio of the length of two trains X and Y is 4 : 7 and the ratio of the time taken by both trains to cross a man standing on a platform is 2 : 3. If the speed of the train X is 36 km/h find the speed of the train Y in m/s.
   A] 35/3 m/s B] 30 m/s C] 20/3m/s D] 15 m/s

3. Kriplani goes to school at 20 km/hr and reaches the school 4 minutes late. Next time, she goes at 25 km/hr and reaches the school 2 minutes earlier than the scheduled time. What is the distance of her school?
   A] 50km B] 10km C] 20km D] 30km

4. Udai travels half of his journey by train at the speed of 120 km/hr and rests half by car at 80 km/hr. What is the average speed?
   A] 58kmph B] 80kmph C] 96kmph D] None of these

5. On a station, a train is stopped for 6 minutes, but after this its speed is increased by 4 km/hr. When the train covers 36 km it manages its delay. What is the initial speed of the train?
   A] 32 km/h B] 36 km/h C] 40 km/h D] 42 km/h

6. The distance between 2 places R and S is 42 km. Anita starts from R with a uniform speed of 4 km/hr towards S and at the same time, Romita starts from S towards R also with some uniform speed. They meet each other after 6 hours. The speed Romita is
   A] 2kmph B] 3kmph C] 5kmph D] None of these

7. The ratio of the speeds of the train and the man is 6 : 1. The length of the train is 650m and crosses a pole in 1 minute 5 seconds. In how much time will the man cross the 240m long platform?
   A] 1 min 24 sec B] 2 min 30 sec C] 2 min D] 2 min 24 sec

8. A thief Bhagu Ram is spotted by the policeman Pakad Singh from a distance of 200m. Once they see each other they start Running. What is the distance Bhagu Ram, who is running at 5 km/hr would have covered before being caught by Pakad Singh running at 7 km/hr?
   A] 300m B] 400m C] 450m D] 500m

9. A train started from point A at a speed of 60 km/hr and after 2 hours another train of same length started from A at a speed of 80 km/hr in the same direction as the first one. After how much time the second train will meet the first train?
   A] 5 hours B] 3 hours C] 6 hours D] 8 hours

10. Abhinav leaves Mumbai at 6 am and reaches Bangalore at 10 am Praveen leaves Bangalore at 8 am and reaches Mumbai at 11:30 am. At what time do they cross each other?
   A] 7:15 B] 8:56 C] 13:55 D] None of these

11. A train is moving at a speed of 20 m/s and crosses a pole in 8 seconds. How long will it take to cross another train which is running in opposite direction at double speed and half the length of the first train?
   A] 2 sec B] 3 sec C] 6 sec D] 4 sec

12. A train is running at a speed of 36 km/h and crosses a bridge of length 250 m in 30 seconds. What is ratio between the length of train and the length of bridge?
   A] 1 : 4 B] 1 : 2 C] 1 : 5 D] 3 : 2

13. A train 105 m long passes a person, running at 2 kmph in the direction opposite to that of the train, in 2 seconds. The speed of the train is:
   A] 100 kmph B] 123 kmph C] 187 kmph D] 144 kmph

14. A man decided to cover a distance of 6 km in 84 minutes. He decided to cover two thirds of the distance at 4 km / hr and the remaining at some different speed. Find the speed after the two third distance has been covered.
   A] 5 kmph B] 7 kmph C] 9 kmph D] 3 kmph

15. While going to office, Ramesh travels at a speed of 30 kmph and on his way back, he travels at a speed of 45 kmph. What is his average speed of the whole journey?
   A] 45 kmph B] 36 kmph C] 32 kmph D] 42 kmph

16. A train leaves Mumbai at 9 am at a speed of 40 kmph. After one hour, another train leaves Mumbai in the same direction at a speed of 50 kmph. When and at what distance from Mumbai will the two trains meet?
A] 1:00 pm, 220 km B] 1:00 pm, 200 km
C] 2:00, 200 km D] 2:00 pm, 220 km

17. A goods train leaves a station at a certain time and at a fixed speed. After 8 hours, an express train leaves the same station and moves in the same direction at a uniform speed of 120 kmph, this train catches up the goods train in 7 hours. Find the speed of the goods train.
A] 50 B] 48 C] 56 D] 60

18. Two cyclists do the same journey by travelling at 9 km/hr and 10 km/hr respectively. Find the distance travelled when one takes 32 minutes longer than the other.
A] 44 km B] 48 km C] 50 km D] 46 km

19. A train 150 metres long crosses a milestone in 15 seconds and crosses another train of the same length travelling in the opposite direction in 12 seconds. The speed of the second train in km/hr is
A] 52 km/hr B] 56 km/hr C] 54 km/hr D] 58 km/hr

20. Two trains, A and B start from stations X and Y towards Y and X respectively. After passing each other, They take 4 hours 48 minutes and 3 hours 20 minutes to reach Y and X respectively. If train A is moving at 45 km/hr., then the speed of the train B is
A] 60 km/hr B] 64.8 km/hr C] 54 km/hr D] 37.5 km/hr

21. A train covers a distance between station A and station B in 45 minutes. If the speed of the train is reduced by 5 km per hour, then the same distance is covered in 48 minutes. The distance between stations A and B is
A] 60 km B] 64 km C] 80 km D] 55 km

22. A train 300 m long is running at a speed of 25 metres per second, it will cross a bridge 200 metres long in
A] 5 seconds B] 10 seconds C] 20 seconds D] 25 seconds

23. A train passes by a lamp post on a platform in 7 sec. and passes by the platform completely in 28 sec. if the length of the platform is 390 m. then length of the train (in metres) is

A] 120 B] 130 C] 140 D] 150

24. Two trains move from station A and station B towards each other at the speed of 50 km/h and 60 km/h. At the meeting point, the driver of the second train felt that the train has covered 120 km more. What is the distance between A and B?

A] 1320 km B] 1100 km C] 1200 km D] 960 km

25. 512 passengers get into a train at the first station. At every subsequent station half the passengers get down and no passengers get in. If only one passenger is left in the train to get down at the last station, at how many stations did the train stop in between the source and destination station?

A] 10 B] 8 C] 9 D] 7

26. A car during its journey travels 30 minutes at a speed of 40 km/hr, another 45 minutes at a speed of 60 km/hr and 2 hours at a speed of 70 km/hr. Find its average speed (approximately).

A] 50 km/hr B] 63 km/hr C] 55.5 km/hr D] 48 km/hr

27. Joseph walked 1 km/hr slower than usual and he could return home in 9/8th of his usual time. His normal walking rate is

A] 8 km/hr B] 9 km/hr C] 10 km/hr D] 11 km/hr

28. Ram and Shyam are standing at two ends of a room with a width of 30 m. They start walking towards each other along the width of the room with a Speed of 2 m/s and 1 m/s, respectively. Find the total distance travelled by Ram when he meets Shyam for the third time.

A] 110 m B] 112 m C] 120 m D] 100 m

29. Walking at 4/5 of his normal speed, Dewang is 15 minutes late in reaching his club. What is the usual time taken by him to cover the distance?

A] 1hr B] 30min C] 3hr D] 2.5hr

30. Shweta when increasing her speed from 24 km/hr to 30 km/hr she takes one hour less than the usual time to cover a certain distance. What is the distance usually covered by Shweta?

A] 150km B] 140km C] 120km D] None of these

31. Three friends A, B and C decide to run around a circular track. They start at the same time and run in the same direction. A is the quickest and when A finishes a lap, it is seen that C is as much behind B as B is behind A. When A completes 3 laps, C is the exact same position on the circular track as B was when A finished 1 lap. Find the ratio of the speeds of A, B and C?

A] 5 : 4 : 2 B] 4 : 3 : 2 C] 5 : 4 : 3 D] 3 : 2 : 1

32. Three cars leave A for B in equal time intervals. They reach B simultaneously and then leave for Point C which is 240 km away from B. The first car arrives at C an hour after the second car. The third car, having reached C, immediately turns back and heads towards B. The first and the third car meet a point that is 80 km away from C. What is the difference between the speed of the first and the third car?

A] 60 kmph B] 20 kmph C] 40 kmph D] 80 kmph

33. Two friends A and B simultaneously start running around a circular track. They run in the same direction. A travels at 6 m/s and B runs at b m/s. If they cross each other at exactly two points on the circular track and b is a natural number less than 30, how many values can b take?

A] 3 B] 4 C] 7 D] 5

34. Two friends A and B leave City P and City Q simultaneously and travel towards Q and P at constant speeds. They meet at a point in between the two cities and then proceed to their respective destinations in 54 minutes and 24 minutes respectively. How long did B take to cover the entire journey between City Q and City P?

A] 60 B] 36 C] 24 D] 48

35. 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 is:

A] 5 kmph B] 6 kmph C] 6.25 kmph D] 7.5 kmph

36. Two bike riders ride in opposite directions around a circular track, starting at the same time from the same point. Biker A rides at a speed of 16 kmph and biker B rides at a speed of 14 kmph. If the track has a diameter of 40 km, after how much time (in hours) will the two bikers meet?

A] 6.52 B] 8.14 C] 4.18 D] 5.02

37. A thief goes away with a MARUTHI car at a speed of 40 kmph. The theft has been discovered after half an hour and the owner sets off in a bike at 50 kmph when will the owner over take the thief from the start?
A] 2 hrs 10 min B] 2 hrs C] 2 hrs 5 min D] 2 hrs 30 min

38. A Person X started at 3 hours earlier at 40km/h from a place P, then another person Y followed him at 60km/h. Started his journey at 3 O'clock, afternoon. What is the difference in time when X was 30 km ahead of Y and when Y was 30 km ahead of X?
A] 2 h B] 3 h C] 3.5 h D] 4.25 h

39. P is faster than Q. P and Q each walk 24 km. The sum of their speeds is 7 km/hr and the sum of times taken by them is 14 hours. Then, P's speed is equal to?
A] 3 km/hr B] 4 km/hr C] 5 km/hr D] 6 km/hr

40. A handcart has to cover a distance of 120 km in 15 hours. If it covers half the distance in 4/7th of the time, then what speed should it maintain in order to cover the remaining journey in the scheduled time?
A] 9.33 kmph B] 4.6 kmph C] 3.1 kmph D] None of these

BOATS AND RACES

1. The ratio of speed of A and B in still water is 3:2. A and B start from the same point in the river, A goes upstream and B goes downstream. After 3 hours the stream stops flowing and A starts rowing in the opposite direction to meet B. How much time after the stream stops flowing does A meet B?
   A] 12 hrs B] 15 hrs C] 18 hrs D]can't be determined

2. A boat goes a certain distance upstream and comes back downstream to the starting point in 144 min. If the speed of the boat in still water becomes 66.67% of the original, time taken for the same journey will be 224 min. What is the ratio of the speed of boat in still water and speed of current?
   A] 7:1 B] 6:1 C] 5:3 D] 7:2

3. A boat covers 120 km along with stream in x hours. Ratio of the speed of boat in still water to current is 3:1. If the speed of boat is increased by 20% and covers 92 km downstream in (x – 2) hours, then find the time taken by the boat covers 100 km against stream.
   A] 8 hrs B] 12.5 hrs C] 10 hrs D] 20 hrs

4. A boat rows 46km at a certain speed in the downstream and while returning, the boatman doubles his boat speed. The speed of the boat in still water is 15kmph and the current speed is 5kmph. What is the total time taken by him to cover the total distance?
   A] 4 hrs B] 4.14 hrs C] 5.5 hrs D] can't be determined

5. The speed of upstream is 12 kmph. If the speed of boat is decreased by 40% and the speed of stream is increased by 50%, then the boat covers 78 km downstream in 5 hours. Find the original speed of stream?
   A] 5 Kmph B] 6 Kmph C] 3 Kmph D] 4 Kmph

6. Ratio of the speed of boat in still water to current is 5:4. The total time taken by the boat covers 300 km against stream and 432 km along with stream in 58 hours. Find the speed of current?
   A] 8 Kmph B] 12 Kmph C] 16 Kmph D] 24 Kmph

7. A boat travels at a distance of 84 km upstream in 7 hours. If the ratio of the speed of boat in downstream is 25% more than the speed of boat in still water, then what is the distance covered by the boat along with stream in 6 hours?
   A] 120 Km B] 150 Km C] 180 Km D] 210 Km

8. A boat covers 128 km upstream in 16 hours. If the speed of stream is 33(1/3)% of the speed of boat, then what is the time taken by the same boat covers 272 km downstream?
   A] 11 hours B] 13 hours C] 15 hours D] 17 hours

9. A man rows a boat at a speed of 5 km/hr in still water. Find the speed of a river if it takes him 1 hr to row a boat to a place 2.4 km away and return back.
   A] 5 Kmph B] 6 Kmph C] 3 Kmph D] 1 Kmph

10. The ratio of the speed of the boat in downstream to upstream is 7: 4. A boy takes 4 hours to cover the total distance of 88km upstream. What is the speed of the boat in still water?
   A] 30.25 Kmph B] 35 Kmph C] 20.15 Kmph D] 15 Kmph

11. A runs $1\frac{1}{3}$ as fast as B. If A gives B a start of 30 meters. How far must be the wining post, so that the race ends in a dead heat?
   A] 100 m B] 110 m C] 140 m D] 120 m

12. In a 500 m race, the ratio of the speeds of two contestants A and B is 3 : 4. A has a start of 140 m. Then, A wins by:
   A] 60 m B] 40 m C] 20 m D] 10m

13. In a 100 m race, A beats B by 10 m and C by 13 m. In a race of 180 m, B will beat C by:
   A] 5.4 m B] 4.5 m C] 5 m D] 6 m

14. In a 200 meters race A beats B by 35 m or 7 seconds. A's time over the course is:
   A] 40 sec B] 47 sec C] 33 sec D] None of these

15. In a 300 m race A beats B by 22.5 m or 6 seconds. B's time over the course is:
   A] 86 sec B] 80 sec C] 76 sec D] None of these

16. A and B run a km race. If A gives B a start of 50 m, A wins by 14 sec and if A gives B a start of 22 sec, B wins by 20 m. The time taken by A to run a km is
   A] 125 sec B] 120 sec C] 105 sec D] 100 sec

Directions for QNo. (17-18) Three cyclists start cycling from the same point in a circular track of 900 m in same direction with the speed of 10 m/s, 20 m/s and 15 m/s respectively.

17. How long will they take to meet for the first time?
    A] 90 sec B] 180 sec C] 360 sec D] 45 sec

18. How long will the cyclist take to meet at the starting point first time?
    A] 90 sec B] 180 sec C] 360 sec D] 45 sec

19. In a circular track race along a track length of 3600 m, A and B start from the same point and at the same time with the speed of 36 Kmph and 45 Kmph in the opposite direction. Find when they meet for the first time
    A] 120 sec B] 144 sec C] 160 sec D] 100 sec

20. In a circular track race along a track length of 3600 m, A and B start from the same point and at the same time with the speed of 36 Kmph and 27 Kmph in the opposite direction. Find when they meet for the first time at the starting point.
    A] 1200 sec B] 1440 sec C] 1600 sec D] 1000 sec

21. Nirmal can row downstream 45 km in 5 hours and upstream 15 km in 3.75 hours, then what is the ratio of speed of current to speed of boat?
    A] 2:3 B] 3:5 C] 4:7 D] 5:13

22. The boat will take 2 hours to cover the distance of 20km downstream and while covering the same distance upstream, it will take 5 hours. Find speed of stream.
    A] 2 Kmph B] 3 Kmph C] 4 Kmph D] 5 Kmph

23. The ratio of the upstream speed and the downstream speed of the boat driven by Ram is 3: 5. If Ram can cover 25km downstream and 30km upstream in 7.5 hours, find the speed of boat in still water.
    A] 2 Kmph B] 4 Kmph C] 6 Kmph D] 8 Kmph

24. A man can row 30 km upstream in 6 hours. If the speed of the man in still water is 6 km/hr, find how much he can row downstream in 10 hours.
    A] 70 Km B] 140 Km C] 200 Km D] 250 Km

25. The speed of the stream is 5 kmph. The boat A covers 96 km along with stream in 6 hours and the boat B covers 120 km along with stream in 8 hours. What is the total time taken by boat A and B covers 180 km against stream?
    A] 66 hours B] 68 hours C] 70 hours D] 64 hours

26. A boat covers d km downstream in 9 hours and the same boat covers the same distance by upstream in 13.5 hours. If the speed of current is 5 kmph, then find the speed of boat in still water?
A] 30 Kmph B] 20 Kmph C] 15 Kmph D] 25 Kmph

27. A steamer can go 12 km in still water in 25 minutes. One day, it went 11.25 km upstream and returned the same distance in downstream. If the difference between the time taken to travel upstream and downstream was 12.5 minutes, then what was the speed of stream in km per hour?
A] 7.2 B] 5.4 C] 6.3 D] 4.5

28. The ratio of the speed of boat in still water to the speed of stream is 16 : 5. A boat goes 16.5 km in 45 minute upstream, find the time taken by boat to cover the distance of 17.5 km downstream.
A] 30 min B] 25 min C] 50 min D] 45 min

29. If the ratio of speed of boat in downstream and speed of stream is 9:1, speed of current is 3 km per hr, what would be the distance travelled in upstream by the boat in 5 hours?
A] 90 Km B] 97 Km C] 115 Km D] 105 Km

30. In a river, the ratio of the speed of the stream and the speed of a boat in still water is 5 : 7. Again, the ratio of the speed of the stream to the speed of another boat in still water is 6 : 8. What is the ratio of the speed of the first boat to that of the second boat in still water?
A] 27:29 B] 21:20 C] 27:28 D] 19:17

Direction for questions- (31 and 32)-
Two persons X and Y, start together from the same point and run on a 4 km circular track in a race of 16 km. The ratio of their speeds in 3:7.

31. How often do they meet on the track in the race, if they both run in the clockwise direction?
A] Once B] Twice C] Thrice D] Five times

32. How often do they meet in the race if X runs in the clockwise direction and Y in the anticlockwise direction?
A] Twice B] Thrice C] Four times D] Five times

33. In a running race, Pallavi gives a head start of 350 m to Richa. If the ratio of speeds Pallavi and Richa is 20:13, how far must the winning point be so that Pallavi and Richa finish the race at the same time?
A] 1 km B] 2 km C] 3 km D] 2.5 km

34. In a race, the speeds of A and B are in the ratio 3:4. A takes 30 min more than B to reach the desired destination. The time taken by A to reach the destination is
A] 1 hr B] 90 min D] 2 hr D] 2.5 hr

35. What is the minimum number of rounds that A must make in order to meet B at the starting point? The speeds of A and B are 4 m/sec and 12 m/sec respectively.
A] 1 B] 2 C] 3 D] 4

Direction for question-(36 & 37)
A and B are racing (in the same direction) on a circular track of length 1 km. In a 500 m race, A can give B a start of 100 m.

36. If both A and B start simultaneously on the circular track, find after how many rounds of A would the two be together for the first time?
A] 3 rounds B] 4 rounds C] 5 rounds D] 6 rounds

37. When A meets B for the first time, B has made 3 rounds. What is the lead that B gives to A?
A] 250 m B] 750 m C] 400 m D] 600 m

38. Rohit beats Virat in a kilometer race by 50 sec and Dhoni by 450 m. If Virat and Dhoni run a kilometer race, Virat wins by 40 sec. How much time does Dhoni takes to run a kilometer?
A] 160 sec B] 110 sec C] 200 sec D] 150 sec

39. In a 200m race, if A gives B a start of 25 metres, then A wins the race by 10 seconds. Alternatively, if A gives B a start of 45 metersthe race ends in a dead heat. How long does A take to run 200m?
A] 72.5 sec B] 75 sec C] 77.5 sec D] 80 sec

40. Karan and Arjun run 100m race, where Karan beats Arjun by 10m. To do a favour to Arjun, Karan starts 10m behind the starting line in second 100m race. They both run at their earlier speeds. Which of following is true for this race?
A] Karan and Arjun reach at the same time B] Arjun beats Karan by 1 m.
C] Arjun beats Karan by 11 m. D] Karan beats Arjun by 1 m.

PERMUTATION AND COMBINATION

1. How many 5- letter words with or without meaning, can be formed out of the letters of the word, 'LOGARITHMS', if repetition of letters is not allowed?
   A) 405 B) 252 C) 120 D) 504

2. In how many ways can a group of 4 LADIES and 2 GENTLEMEN be made out of a total of 7 LADIES and 3 GENTLEMEN?
   A) 135 B) 63 C) 105 D) 64

3. The Indian Cricket team consists of 15 players. It includes 2 wicket keepers and 5 bowlers. In how many ways can a cricket eleven be selected if we have to select 1 wicket keeper and at least 4 bowlers?
   A) 392 B) 190 C) 200 D) 109

4. In how many different ways can the letters of the word 'ADITYA' be arranged in such a way that the vowels occupy only the odd positions?
   A) 18 B) 25 C) 42 D) 120

5. In how many ways can the letters of the word EDUCATION be rearranged so that the relative position of the vowels and consonants remain the same as in the word EDUCATION?
   A) 2530 B) 2658 C) 2546 D) 2880

6. A letter lock consists of three rings each marked with five different letters. The number of distinct unsuccessful attempts to open the lock is at the most?
   A) 215 B) 268 C) 124 D) 216

7. How many lines can you draw using 10 non collinear (not in a single line) points on a plane?
   A) 30 B) 45 C) 25 D) none of these

8. 8. In a team party the manager, the supervisor, and the module lead want to sit together. Also the developer and the consultant need to sit together for some discussion. In how many ways can a total of 20 team members be seated around a round table?
   A] 19! B] 16! C] 16!/(3! 2!) D] 16!5!
   E] 16!2!3!

9. In how many ways can the digits 2,3,5,7 and 9 be placed to form a three-digit number so that the higher order digit is always greater than the lower order digits? (Assume digits are all different).
   A: 8 B: 9 C: 10 D: 15

10. How many numbers of five digits can be formed by using the digits 1, 0, 2, 3, 5, 6 which are between 50000 and 60000 without repeating the digits?

    A) 120 B) 240 C) 256 D) 360

11. In how many ways the letters of the word 'CIRCUMSTANCES' can be arranged such that all vowels came at odd places and N always comes at end?

    A) 151200 ways. B) 504020 ways C) 72000 ways D) none of these

12. If it is possible to make a meaningful word with the first, the seventh, the ninth and the tenth letters of the word RECREATIONAL, using each letter only once, which of the following will be the third letter of the word? If more than one such word can be formed, give ‘X’ as the answer. If no such word can be formed, give ‘Z’ as the answer.
    A) T B) X C) N D) R

13. In a group of 6 boys and 4 girls, four children are to be selected. In how many different ways can they be selected such that at least one boy should be there?
    A) 205 B) 194 C) 209 D) 159

14. If each of the vowels in the word 'MEAT' is kept unchanged and each of the consonants is replaced by the previous letter in the English alphabet, how many four-lettered meaningful words can be formed with the new letters, using each letter only once in each word?
    A) 3 B) 4 C) 1 D) 2

15. In how many different ways the letters of the word 'TRANSFORMER' can be arranged such that 'N' and 'S' always come together?
    A) 112420 B) 85120 C) 40320 D) 1209600

16. A decision committee of 5 members is to be formed out of 4 Actors, 3 Directors and 2 Producers. In how many ways a committee of 2 Actors, 2 Directors and 1 Producer can be formed?
A) 18 B) 24 C) 36 D) 32

17. 16 persons are participated in a party. In how many different ways can they sit on a circular table, if 2 particular persons are to be seated on either side of the host?
A) 16! × 2 B) 14! × 2 C) 18! × 2 D) 14!

18. There are 41 students in a class, number of girls is one more than number of guys. We need to form a team of four students. All four in the team cannot be from same gender. Number of girls and guys in the team should NOT be equal. How many ways can such a team be made?
A) 49450 B) 50540 C) 46587 D) 52487

19. Eight first class and six second class petty officers are on the board of the 56 club. In how many ways can the members elect, from the board, a president, a vice-president, a secretary, and a treasurer if the president and secretary must be first class petty officers and the vice-president and treasurer must be second class petty officers?
A) 1500 B) 1860 C) 1680 D) 1640

20. In how many ways can the digits 2, 3, 5, 7 and 9 be placed to form a three – digit number so that the higher order digit is always greater than the lower order digits? (Assume digits are all different)
A] 8 B] 9 C] 10 D] 15

21. In a plane 8 points are collinear out of 12 points, then the number of triangles we get with those 12 points is
A) 20 B) 160 C) 164 D) 220

22. If A1, A2, A3, A4, ... A10 are speakers for a meeting and A1 always speaks after, A2 then the number of ways they can speak in the meeting is
A) 9! B) 9!/2 C) 10! D) 10!/2

23. Some children go to ice-cream shop. 9 flavours are available there. Each child takes a cone with two different flavours. No two children take same combination and they have taken all such possible combinations. How many children went to ice cream shop?
A) 28 B) 56 C) 44 D) 36

24. Find the sum of the all the numbers formed by the digits 2, 4, 6 and 8 without repetition. Number may be of any of the form like 2, 24, 684, 4862, ?
A) 133345 B) 147320 C) 13320 D) 145874

25. From a deck of 52 cards, a 5 card hand is dealt. How may distinct five card hands are there if the queen of spades and the four of diamonds must be in the hand?
A) 52C5 B) 50C3 C) 52C4 D) 50C4

26. A college has 10 basketball players. A 5-member team and a captain will be selected out of these 10 players. How many different selections can be made?
A) 1260 B) 210 C) 210 x 6! D) 1512

27. To fill 8 vacancies there are 15 candidates of which 5 are from ST. If 3 of the vacancies are reserved for ST candidates while the rest are open to all, find the number of ways in which the selection can be done?
A) 792 B) 74841 C) 14874 D) 10213

28. Goldenrod and No Hope are in a horse race with 6 contestants. How many different arrangements of finishes are there if No Hope always finishes before Goldenrod and if all of the horses finish the race?
A) 720 B) 360 C) 120 D) 640

29. There are 3 bags, in 1st there are 9 Mangoes, in 2nd 8 apples & in 3rd 6 bananas. There are how many ways you can buy one fruit if all the mangoes are identical, all the apples are identical, & also all the Bananas are identical?
A) 23 B) 432 C) 22 D) 431

30. On the occasion of New Year, each student of a class sends greeting cards to the others. If there are 21 students in the class, what is the total number of greeting cards exchanged by the students?
A) 380 B) 420 C) 441 D) 400

31. When John arrives in New York, he has eight stops to see, but he has time only to visit six of them. In how many different ways can he arrange his schedule in New York?
A) 20610 B) 24000 C) 20160 D) 21000

32. There are 7 men and 10 women on a committee selection pool. A committee consisting of President, Vice-President, and Treasurer is to be formed. How many ways can exactly two men be on the committee?
A) 1200 B) 1240 C) 1260 D) 1620

33. A certain marathon had 50 people running for first prize, second, and third prize. How many ways are there to correctly guess the first, second, and third place winners?
A) 2 B) 1 C) 4 D) 3

34. In how many ways the letters of the word OLIVER be arranged so that the vowels in the word always occur in the dictionary order as we move from left to right?
A) 186 B) 144 C) 136 D) 120

35. A research team of 6 people is to be formed from 10 chemists, 5 politicians, 8 economists and 15 biologists. How many teams have at least 5 chemists?
A) 7350 B) 6400 C) 6379 D) 7266

36. In how many ways can 5 different toys be packed in 3 identical boxes such that no box is empty, if any of the boxes may hold all of the toys?
A) 15 B) 10 C) 25 D) 20

37. A box contains 2 blue balls, 3 green balls and 4 yellow balls. In how many ways can 3 balls be drawn from the box, if at least one green ball is to be included in the draw?

A) 48 B) 24 C) 64 D) 32

38. Jay wants to buy a total of 100 plants using exactly a sum of Rs 1000. He can buy Rose plants at Rs 20 per plant or marigold or Sun flower plants at Rs 5 and Re 1 per plant respectively. If he has to buy at least one of each plant and cannot buy any other type of plants, then in how many distinct ways can Jay make his purchase?

A) 3 B) 6 C) 4 D) 2

39. A school has scheduled three volleyball games, two soccer games, and four basketball games. You have a ticket allowing you to attend three of the games. In how many ways can you go to two basketball games and one of the other events?

A) 25 B) 30 C) 50 D) 75

40. There are fourteen juniors and twenty-three seniors in the Service Club. The club is to send four representatives to the State Conference. If the members of the club decide to send two juniors and two seniors, how many different groupings are possible?

A) 23024 B) 24023 C) 23023 D) 25690

PROBABILITY

1. A detergent powder company is having a contest. Each pack of 1kg contains one of the letters B, A, M and O. In every 20 packs, there are four Bs, five As, ten Ms and one O. What is the probability that a pack will have a B?

   A] $\frac{1}{4}$ B] $\frac{1}{2}$ C] $\frac{1}{5}$ D] $\frac{1}{20}$

2. A jar contains 5 white, 8 red, 2 blue and 3 black balls. Find the probability that a ball drawn at random is red or blue.

   A] $\frac{4}{9}$ B] $\frac{5}{9}$ C] $\frac{2}{7}$ D] $\frac{1}{5}$

3. A, B and C are three students who attend the same tutorial classes. If the probability that on a particular day exactly one out of A and B attends the class is$\frac{7}{10}$; exactly one out of B and C attends is$\frac{4}{10}$; exactly one out of C and A attends is$\frac{7}{10}$. If the probability that all the three attend the class is$\frac{9}{100}$, then find the probability that at least one attends the class.

   A] $\frac{46}{100}$ B] $\frac{63}{100}$ C] $\frac{74}{100}$ D] $\frac{99}{100}$

4. A bag is full of 20 bananas and no other fruit. Rajeev draws a fruit from the bag. What is the probability that he will draw a banana?

   A] 1 B] 0 C] $\frac{1}{2}$ D] None of these

5. What is the probability of getting an even sum of score in a throw of 2 dice?

   A] $\frac{1}{3}$ B] $\frac{17}{36}$ C] $\frac{1}{4}$ D] $\frac{1}{2}$

6. The possibility that a student passes a subject A, B or C is 98%. The probability that he or she passes A is 41%, B is 59%. The probability that he or she passes A and B is 15%, A and C is 25% and B and C is 20%. The probability that he or she passes all the three subjects is 14%. What is the probability that he or she passes subject C?

   A] 0.44% B] 50% C] 44% D] 38%

7. What is the probability of getting an even sum of score in a throw of 2 dice?

   A] $\frac{1}{3}$ B] $\frac{17}{36}$ C] $\frac{1}{4}$ D] $\frac{1}{2}$

8. The possibility that a student passes a subject A, B or C is 98%. The probability that he or she passes A is 41%, B is 59%. The probability that he or she passes A and B is 15%, A and C is 25% and B and C is 20%. The probability that he or she passes all the three subjects is 14%. What is the probability that he or she passes subject C?

A] 0.44% B] 50% C] 44% D] 38%

9. 8 friends A, B, C, D, E, F, G, and H are to be seated around a round table. Find the probability that A and B never sit next to each other.

A] 2/7 B] 5/7 C] 3/8 D] 5/8

10. Ravi has a bag full of 10 nestle and 5 Cadbury chocolates. Out of these he draws two chocolates. What is the probability that he would get at least one nestle chocolate.

A] 19/21 B] 3/7 C] 2/21 D] 1/3

11. A box contains 10 balls numbered 1 through 10. Anuj, anisha and amit pick a ball each, one after the other each time replacing the ball. What is the probability that anuj picks a ball numbered less than that picked by anisha, who in turns picks lesser number ball than amit.

A] 3/25 B] 1/6 C] 4/25 D] 81/400

12. 40% of the company staff are females. What is the probability that a set of 7 records of the employees taken at random from the cupboard has 2 records of female staff?

A] $^{7}P_{2}$*(0.40)^5*(0.60)^2 B] $^{7}P_{2}$(0.40)^2*(0.60)^5

C] $^{7}C_{2}$(0.40)^2*(0.60)^5 D] $^{7}C_{2}$(0.40)^5(0.60)^2

13. A group is analyzing quality control problems. Suppose that the probability of a defective shape is 0.03 and the probability of a defective paint job is 0.60. What is the probability of non-defective items?

A] 0.09 B] 0.18 C] 0.32 D] 0.03

E] None of these.

14. In AMY Company, the probability that an employee takes a sick leave as well as a casual leave in a month is 0.15. The probability that an employee takes a sick leave in a month is 0.45. What is the probability that the employee would take a casual leave given that he would take a sick leave?

A] 0.33 B] 0.42 C] 0.66 D] 0.7

15. A panel received 70 white papers for review and approval. White paper can be rejected if the content is found to be copied from any source. The white paper content should be a good quality work, well documented as per standards and should have proofs of the research. From last year's record analysis, the probability that a white paper will be published was 94%. What is the probability that out of 5 white papers taken at random from this year's lot, 4 will get published taking into consideration, last year's performance?

A] 0.3 B] $^5C_4(0.06)^4$. (0.94) C] $^5P_4(0.06)^4$. (0.94)
D] $^5C_4(0.94)]^4$. (0.06) E] $^5P_4(0.94)^4$. (0.06)

16. If a coin with both heads is tossed, then probability of obtaining a tail is:

A] 0 B] ½ C] 1/3 D] 1

17. A multiplex conducted a random survey of the movie goers to determine their preference in movies. Of the 50 people surveyed, 35 preferred comedies. What is the probability that any movie goer will buy a ticket of comedy movies?

A] 7/10 B] 3/10 C] 6/10 D] 4/10

18. There are 2 bags A and B] Bag A contains 6 red flowers and 3 pink flowers whereas Bag B contains 2 red flowers and 7 pink flowers. One flower is chosen from a bag randomly. What is the probability that the flower chosen is pink?

A] 4/9 B] 1/3 C] 5/4 D] 5/9

19. A group is analyzing quality control problems. Suppose that the probability of a defective shape is 0.03 and the probability of a defective paint job is 0.06. What is the probability of a non-defective item?

A] 0.09 B] 0.18 C] 0.32 D] 0.91

20. In a quiz competition, the host asked a question and provided three possible answers. What is the probability that the answer choice which Rohit selects for a question is wrong?

A] $\frac{1}{3}$ B] $\frac{1}{2}$ C] $^3C_1 * \frac{3}{2}$ D] $\frac{2}{3}$

21. A developed car in the workshop comprises of around 70 components. Each component has a probability of having a manufacturing error 0.015. What is the probability that this developed car will get rejected due to manufacturing error in any of the component?

A] $(0.015)^{70}$ B] $(0.985)^{70}$ C] $1 - (0.985)^{70}$ D] $1 - (0.015)^{70}$

22. Ritu visited a mall where tokens are given while submitting belongings at the entrance. Tokens are lettered a, b, c, …….., z. Guard gives the token at random. What is the probability that token given to Ritu is consonant?

A]$\frac{5}{21}$ B]$\frac{21}{26}$ C]$\frac{5}{26}$ D]$\frac{26}{21}$

23. The probability of getting at least one tail in 5 throws of a coin is?

A] 1/32 B] 31/32 C] 1/5 D] None of these

24. A bag contains 5 oranges, 4 bananas and 3 apples. Rohit wants to eat a banana or an apple. He draws a fruit from the bag randomly. What is the probability that he will get a fruit of this choice?

A] 3.5/12 B] 7/12 C] 5/12 D] None of these

25. A single letter is drawn at random from the word] “ASPIRATION", the probability that it is a vowel is?

A] 1/2 B] 1/3 C] 3/5 D] 2/5

26. A lucky draw is organized as part of the first anniversary celebration of new Age Company. There are 25 chits in a bowl one for each employee and the chits are marked from 1-25. Sarika and Rajesh have chits marked with numbers that are multiples of 3 or 7. They want to know if there are chances of them being awarded the trip to Goa which is the first prize of the lucky draw. When one chit is drawn at random, what is the probability that the chit has a number which is a multiple of 3 or 7?

A] 3/25 B] 2/11 C] 11/25 D] 10/25

27. Probability of one of the power plants over heating is 0.15 per day and the probability of failure of the backup cooling system is 0.11. If these events are independent, what is the probability of ‘big trouble’ (i.e., both events taking place)?

A] 0.35 B] 0.0185 C] 0.0165 D] 0.26

28. A person forgets two digits of user ID for a website. He remembers that two digits are odd] what is the probability of him typing the correct last two digits by randomly typing 2 odd digits?

A] (1/25) B] (1/5) C] (1/2) D] (2/5)

29. Gitu and Rashmi were playing ludo. Game and starts when one gets 6 in two consecutive throws of dice. What is the probability that gitu can start the game in first chance?
A] 1/6 B] 1/36 C] 5/6 D] 5/36

30. If A speaks the truth 80% of the times, B speaks the truth 60% of the times. What is the probability that they tell the truth at the same time?
A] 0.8 B] 0.48 C] 0.6 D] 0.14

31. A man speaks the truth 3 out of 4 times. He throws a die and reports it to be a 6. What is the probability of it being a 6?
A] 3/8 B] 5/8 C] ¾ D] None of these

32. ABCD is a square PQRS is a rhombus lying inside the square such that P, Q, R and S are the mid-points of AB, BC, CD and DA respectively. A point is selected at random in the square. Find the probability that lies in the rhombus.
A] 1/3 B] 2/3 C] 1/2 D] ¼

33. In shooting competition, the probability of hitting the target by P is 3/5. By Q is 1/3 and by R is 2/5. If all they fire independently at the same target calculate the probability that only one of them will hit the target.
A] 25/75 B] 32/75 C] 39/75 D] 43/75

34. If a coin with both heads is tossed, then the probability of obtaining a tail is:

A] 0 B] ½ C] 1/3 D] 1

35. One card is drawn from a pack of 52 cards, each of the 52 cards being equally likely to be drawn. Find the probability that the card drawn is '9' of hearts.
A] 1/13 B] 1/26 C] 1/52 D] 3/52

36. An unbiased coin is tossed 5 times. If tail appears on first 4 tosses, then probability of tail appearing on the fifth toss is:
A] ½ B] 1 C] 0 D] 4/5

37. In a single throw of dice, what is the probability to get a number greater than or equal to 4?
A] 1/3 B] 2/3 C] ½ D] None of these

38. A person forgets the last two digits of user ID for a website. He remember that both digits are odd, what is the probability of him typing the correct last digits by randomly typing 2 odd digits?

A] 1/25 B] 1/5 C] 1/2 D] 2/5

39. Gitu and Rashmi were playing ludo. Game starts when one gets 6 in two consecutive throws of dice. What is the probability that gitu can start the game in first chance?

A] 1/6 B] 1/36 C] 5/36 D] 5/6

40. Ritu has 3 shirts in shades of red, 4 in yellow shades and 5 in green shades .Three shirts are picked at random. The probability that all of those are in red shades is:

A] 1/12 B] 1/660 C] 1/66 D] 1/4

PUZZLES

Directions (1-5): Study the following information carefully and answer the questions given beside:

A teacher made an observation on the basis of the ranks of seven students – Piya, Riya, Shreya, Niya, Diya, Miya and Jiya, in the previous exams taken by them.

The observations were:

No two students get same rank.
Jiya always performs better than Piya.
Piya always performs better than Riya.
Each time either Shreya tops the class and Diya gets the last rank, or alternatively Niya tops the class and either Miya or Riya gets the last rank.

1. Jiya is ranked fifth, and Miya is ranked below Niya and Diya then what is the rank of Niya?

   A] 2 B] 3 C. 4 D] 1

2. If Shreya is ranked third, and Miya is ranked lower than Shreya but higher than Jiya then what is the rank of Diya?

   A] 1 B] 2 C. 4 D] 5

3. If Riya is ranked fourth and there are two persons ranked between Jiya and Shreya then what is the rank of Miya?

   A] 2 B] 4 C. 6 D] 7

4. If Niya ranked first and Riya is not holding last rank, then what is the rank of Diya if Jiya stood at 2nd?

   A] 4^{th} B] 3^{rd} C. 6^{th} D] cannot be determined

5. If Piya ranked 4th and Diya stood at last then what is the rank of Shreya if Miya stood at 6th?

   A] 2^{nd} B] 1^{st} C. 3^{rd} D] 5^{th}

6. Compare the knowledge of persons X, Y, Z, A, B and C in relation to each other:

1. X knows more than A] 2. Y knows as much as B]

3. Z knows less than C. 4. A knows more than Y.

The best knowledgeable person amongst all is:

A] X B]Y C] A D] C

7. Five children were administered psychological tests to know their intellectual levels. In the report, psychologists pointed out that the child A is less intelligent than the child B. The child C is less intelligent than the child D. The child B is less intelligent than the child C and child A is more intelligent than the child E. Which child is the most intelligent?

A] A B] B C] D D] E
E] None of these

8. Among five boys, Vineet is taller than Manick, but not as tall as Ravi. Jacob is taller than Dilip but shorter than Manick. Who is the tallest in their group?

A] Ravi B] Manick C] Vineet D] cannot be determined E] None of these

9. If (i) P is taller than Q; (ii) R is shorter than P; (iii) S is taller than T but shorter than Q, then who among them is the tallest?

A] P B] Q C] S D] T
E] can't be determined

10. Five boys participated in a competition. Rohit was ranked lower than Sanjay. Vikas was ranked higher than Dinesh. Kamal's rank was between Rohit and Vikas. Who was ranked highest?

A] Saiyay B] Vikas C] Dinesh D] Kamal
E] None of these

11. In an examination, Raj got more marks than Mukesh but not as many as Priya. Priya got more marks than Gaurav and Kavita. Gaurav got less marks than Mukesh but his marks are not the lowest in the group. Who is second in the descending order of marks?

A] Priya B] Kavita C] cannot be determined D] none of these

12. Ashish is heavier than Govind. Mohit is lighter than Jack. Pawan is heavier than Jack but lighter than Govind. Who among them is the heaviest?

A] Govind B] Jack C] Pawan D] Ashish
E] Mohit

13. Pune is bigger than Jhansi, Sitapur is bigger than Chittor. Raigarh is not as big as Jhansi, but is bigger than Sitapur. Which is the smallest?

A] Pune B] Jhansi C] Sitapur D] Chittor

14. Rohan is taller than Anand but shorter than Seema. Krishna is taller than Pushpa but shorter than Anand. Dhiraj is taller than Krishna but shorter than Seema. Who among them is the tallest?

A] Rohan B] Seema C] Krishna

D] cannot be determined E] None of these

Directions (Questions 15-16): Read the following information carefully and answer the questions given below it:

A] Gopal is shorter than Ashok but taller than Kunal;

B] Navin is shorter than Kunal;

C] Jayesh is taller than Navin;

D] Ashok is taller than Jayesh.

15. Who among them is the tallest?

A] Gopal B] Ashok C] Kunal D] Navin
E] Jayesh

16. Which of the given information is not necessary to answer the above question?

A] A B] B C] C D] D
E] None of these

17. B is twice as old as A but twice younger than F.

C is half the age of A but twice the age of D]

Which two persons form the pair of oldest and youngest?

A] F and A B] F and D C] F and C D] None of these

18. Sudhanshu is as much older than Kokila as he is younger than Praveen. Nitin is as old as Kokila. Which of the following statements is wrong? (Bank P.O. 1995)

A] Kokila is younger than Praveen. B] Nitin is younger than Praveen.

C] Sudhanshu is older than Nitin. D] Praveen is not the oldest.

E] Kokila is younger than Sudhanshu.

19. A is elder to B while C and D are elder to E who lies between A and C. If C be elder to B, which one of the following statements is necessarily true?

A] A is elder to C B] C is elder to D

C] D is elder to C D] E is elder to B

20. Hitesh is richer than Jay a whereas Mohan is richer than Pritam. Lalit is as rich as Jaya Amit is richer than Hitesh. What conclusion can be definitely drawn from the above statements?

A] Jaya is poorer than Pritam. B] Mohan is richer than Amit.

C] Lali t is poorer than Hitesh. D] Pritam is richer than Lalit.

Directions (Questions 21 to 26) : Study the following information and answer the questions given below it:

A blacksmith has five iron articles A, B, C, D and E, each having a different weight.

(i) A weighs twice as much as B]

(ii) B weighs four and a half times as much as C.

(iii) C weighs half as much as D]

(iv) D weighs half as much as E.

(u) E weighs less than A but more than C.

21. Which of the following is the lightest in weight?

A] A B] B C] C D] D

22. E is lighter in weight than which of the other two articles?

A] A, B; B] D, C C] A, C D] D, B

E] B, E

23. E is heavier than which of the following two articles?

A] D, B B] D, C C] A, C D] A, B

E] None of these

24. Which of the following articles is the heaviest in weight?

A] A B] B C] C D] D

E] E

25. Which of the following represents the descending order of weights of the articles?

A] A, B, E, D, C B] B, D, E. A, C

C] C. A, D, B, E D] A, B, D, E, C

26. Which of the above given statements is not necessary to determine the correct order of articles according to their weights?

A] 1 B] 2 C] 3 D] 4

E] 5

Directions (27 to 31) : Read the following information and answer the questions given below it :

(i) Seven students P, Q, R, S, Tf U and V take a series of tests.

(ii) No two students get similar marks.

(iii) V always scores more than P.

(iv) P always scores more than Q.

(v) Each time either R scores the highest and T gets the least, or alternatively

S scores the highest and U or Q scores the least.

27. If S is ranked sixth and Q is ranked fifth, which of the following can be true?

A] V is ranked first or fourth. B] R is ranked second or third.

C] P is ranked second or fifth. D] T is ranked fourth or fifth.

28. If R gets most, V should be ranked not lower than:

A] second B] third C] fourth D] fifth

E] sixth

29. If R is ranked second and Q is ranked fifth, which of the following must be true?

A] S is ranked third. B] T is ranked sixth. C] P is ranked sixth. D] V is ranked fourth. E] U is ranked sixth.

30. If S is ranked second, which of the following can be true?

A] U gets more than V. B] V gets more than S.

C] P gets more than V. D] T gets more than Q.

31. If V is ranked fifth, which of the following must be true?

A] S scores the highest. B] R is ranked second.

C] Q is ranked fourth. D] U scores the least.

Directions (Questions 32 to 36): Study the information given below and answer the questions that follow:

(i) A, B, C. D, E and F are six students in a class.

(ii) B and C are shorter than F but heavier than A]

(iii) D is heavier than B and taller than C.

(iv) E is shorter than D but taller than F.

(v) F is heavier than D]

(vi) A is shorter than E but taller than F.

32. Who among them is the tallest?

A] A B] B C] D D] E

E] None of these

33. Who is third from the top when they are arranged in descending order of height?

A] A B] B C] C D] E

E] None of these

34. Which of the following groups of friends is shorter than A?

A] B and C only B] D, B, C only C] E, B, C only

D] F, B, C, only E] None of these

35. Who among them is the lightest?

A] A B] B C]C D] B or C
E] Data inadequate

36. Which of the following statements is true for F as regards height and weight?

A] He is lighter than E and taller than E.

B] He is heavier than B and taller than E.

C] He is heavier than B and C but shorter than D]

D] He is lighter than E and also shorter than E.

E] He is lighter than B and C but taller than D]

Directions (Questions 37 to 40) : Read the following information carefully and answer the questions given below it:

i) A, B, C, D and E are five friends.

(ii) B is elder to E, but not as tall as C.

(iii) C is younger to A, and is taller to D and E.

(iv) A is taller to D, but younger to E.

(v) D is elder to A but is shortest in the group.

37. Who among the following is the youngest?

A] A B] B C] C D) D

38. Which of the following pairs of students is elder to D?

A] BA B] BC C] BE D] EA E) None of these

39. If A is tallest, who will be 2nd tallest in the group?

A] B B] C C] D D] E E] Can't be determined

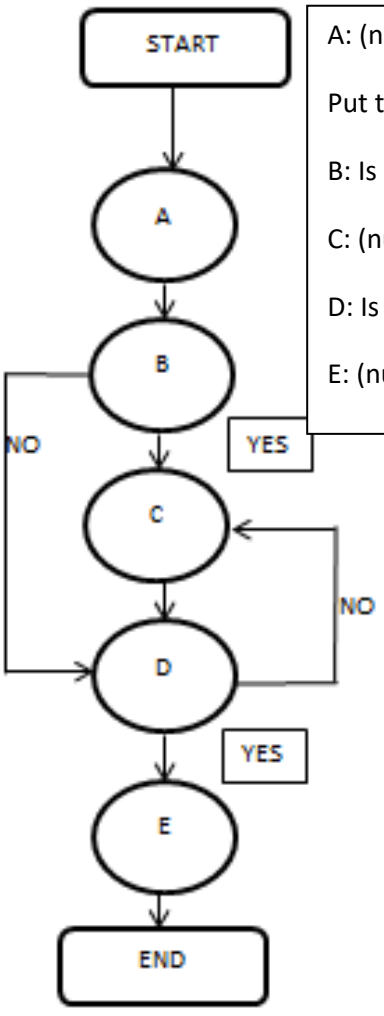
40. If D is not the eldest, then who is the eldest in the group?

A] A B] B C] C D] E E] None of these

FLOW CHART

Directions (1-2): Study the flowchart given below and answer the questions that follow.

Box No.	1	2	3	4	5	6	7	8	9	10
Value	13	20	7	12	10	2	5	1	0	18



A: (number in Box 4) – (number in Box 1).

Put the result in Box 10.

B: Is (number in Box 10) < 0?

C: (number in Box 9) + (number in Box 5). Put the result in Box 2.

D: Is (number in Box 2) > (number in Box 7)?

E: (number in Box 10) * (number in Box 2). Put the result in Box 3.

1. Is the following statement true or false?

Statement: If the condition in Step C updates the value in Box 3 instead of Box 2, then flowchart will enter the infinite loop.

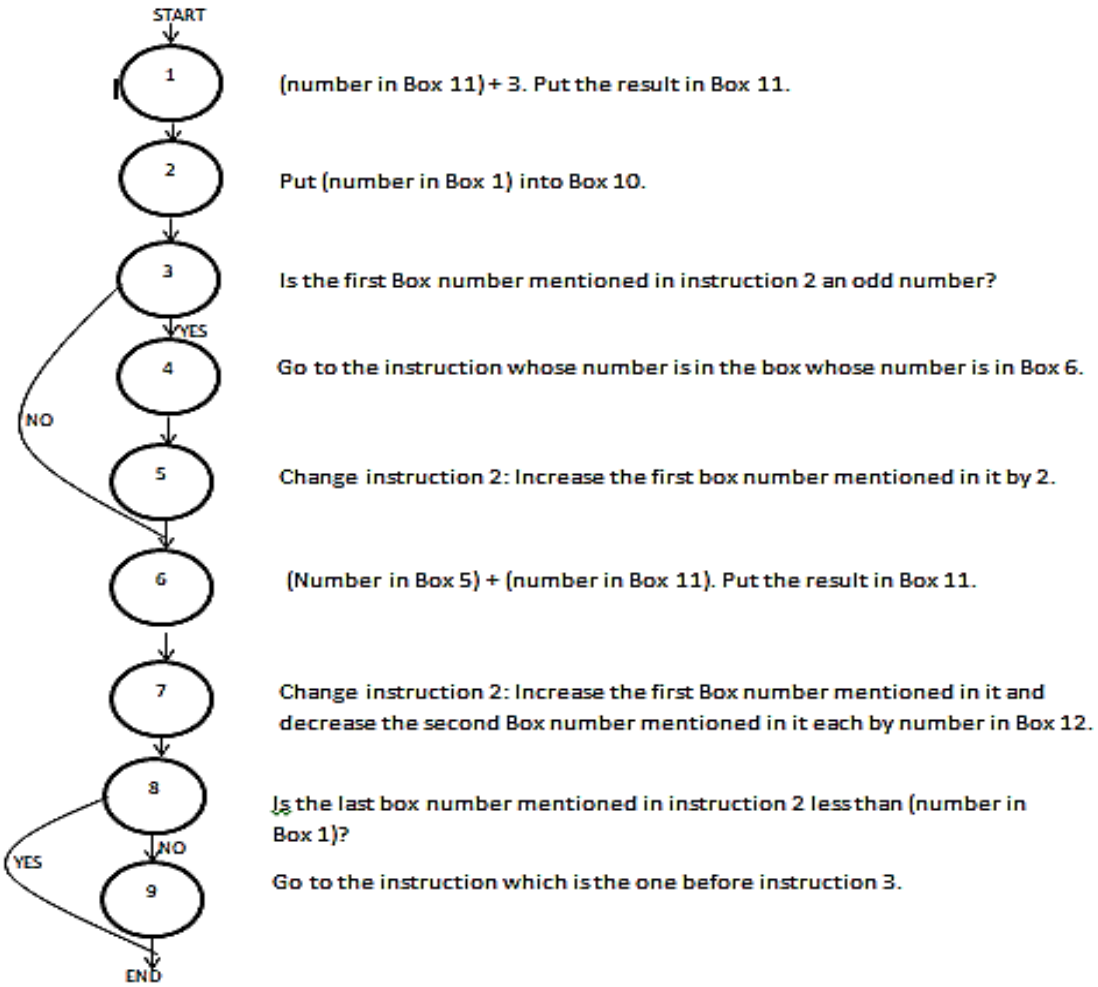
A. True B. False C. Cannot be determined D. Zero

2. What is the number in box 3 after the process?

A. 7 B. 10 C. – 10 D. 360

Directions (3-4): Study the flowchart given below and answer the questions that follow.

Box No.	1	2	3	4	5	6	7	8	9	10	11	12
Value	8	6	5	7	4	2	2	11	8	-2	2	1



3. What number is in Box 8?

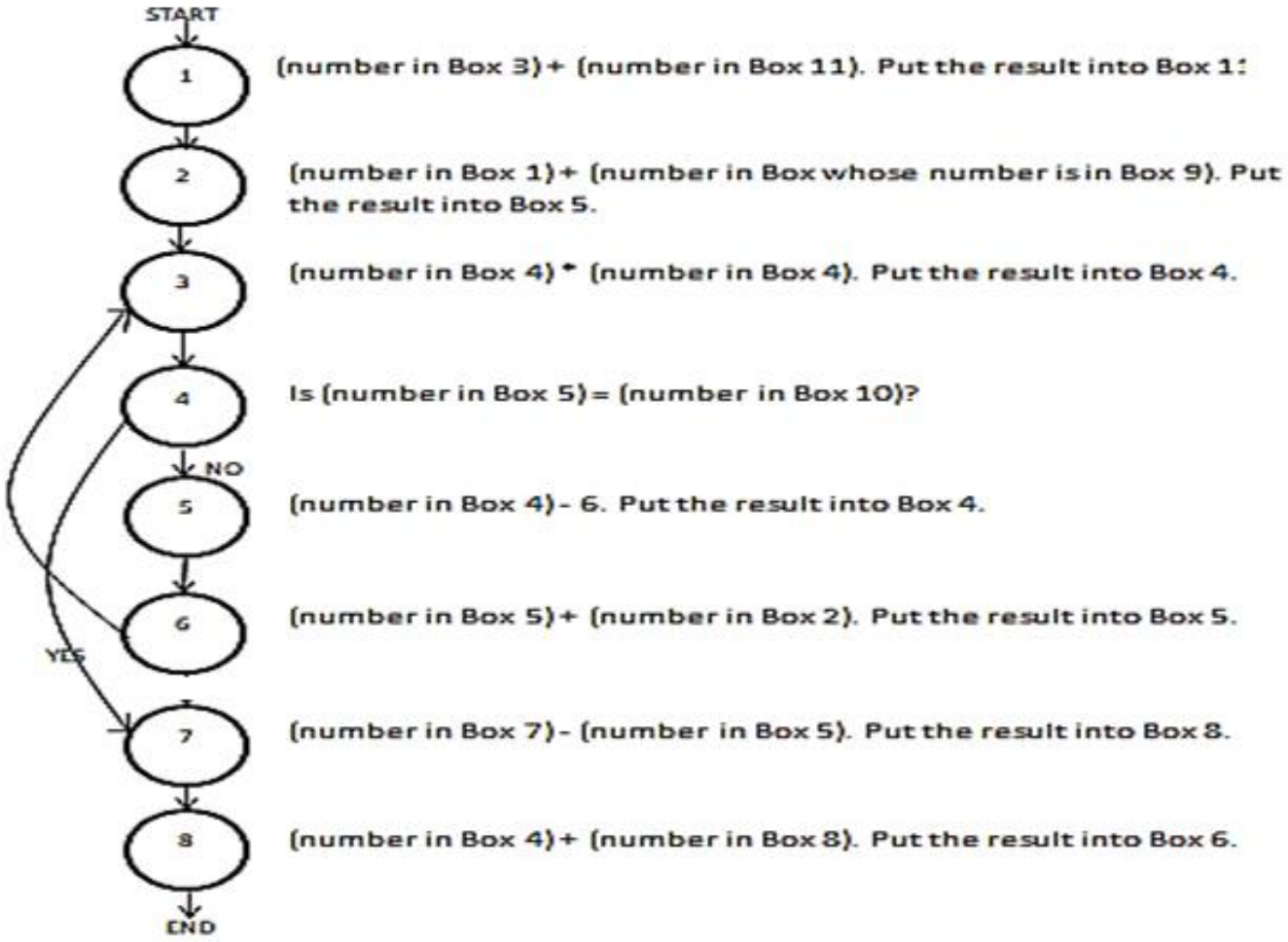
A. 7 B. 9 C. 5 D. 8

4. What is the number in box 11 after the process?

A. 15 B. 17 C. 12 D. 36

Directions (5-6): Study the flowchart given below and answer the questions that follow.

Box No.	1	2	3	4	5	6	7	8	9	10	11	12
Value	1	2	0	3	7	5	24	7	11	6	1	5



5. Determine which number is now in Box 6.

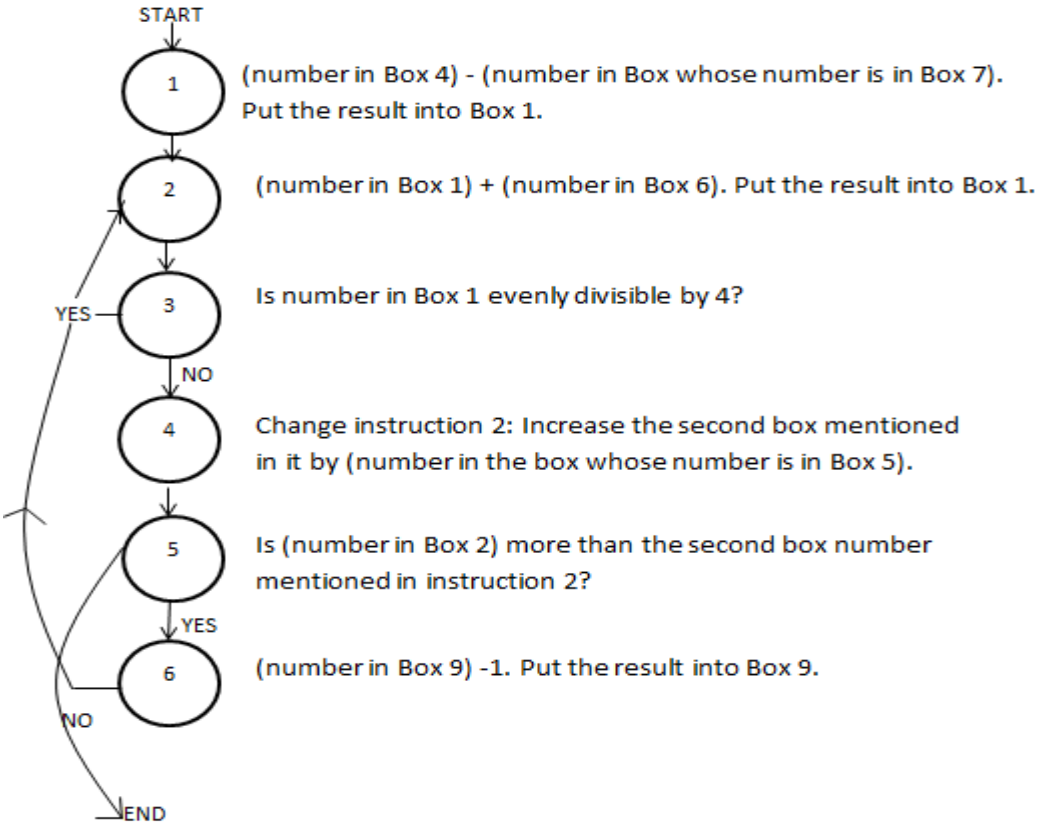
A. 26 B. 24 C. 25 D. 27

6. How many times did the loop run between step 6 and step 3?

A. once B. Twice C. Thrice D. No loop

Directions (7-8): Study the flowchart given below and answer the questions that follow.

Box No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Value	4	13	2	5	6	3	10	6	7	2	5	2	6	7	1



7. Determine which number is now in Box 1.

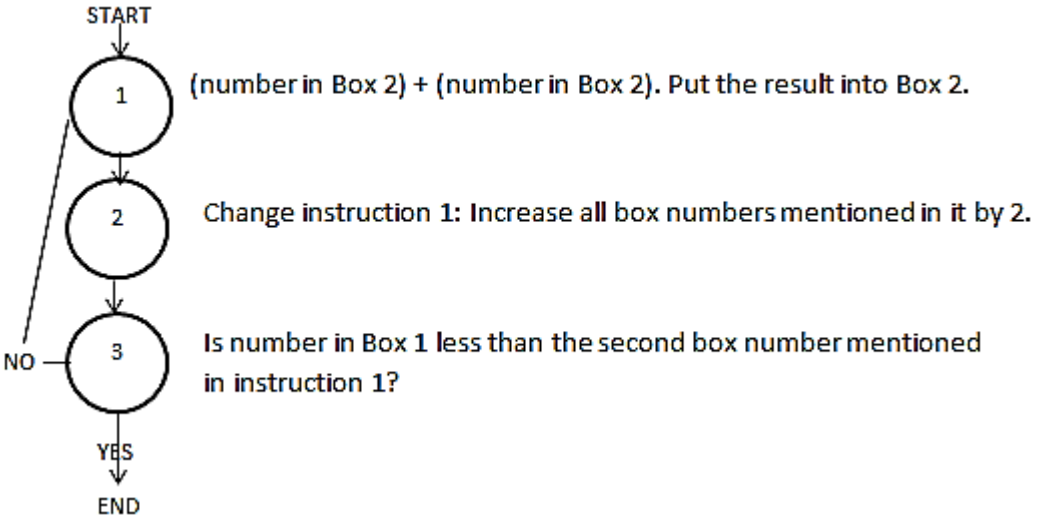
A. 11 B. 15 C. 8 D. 14

8. Which number is in box 9 at the end of process?

A. 6 B. 7 C. 5 D. 4

Directions (9-10): Study the flowchart given below and answer the questions that follow.

Box No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Value	7	2	3	4	5	6	7	8	9	10	11	12	13	14



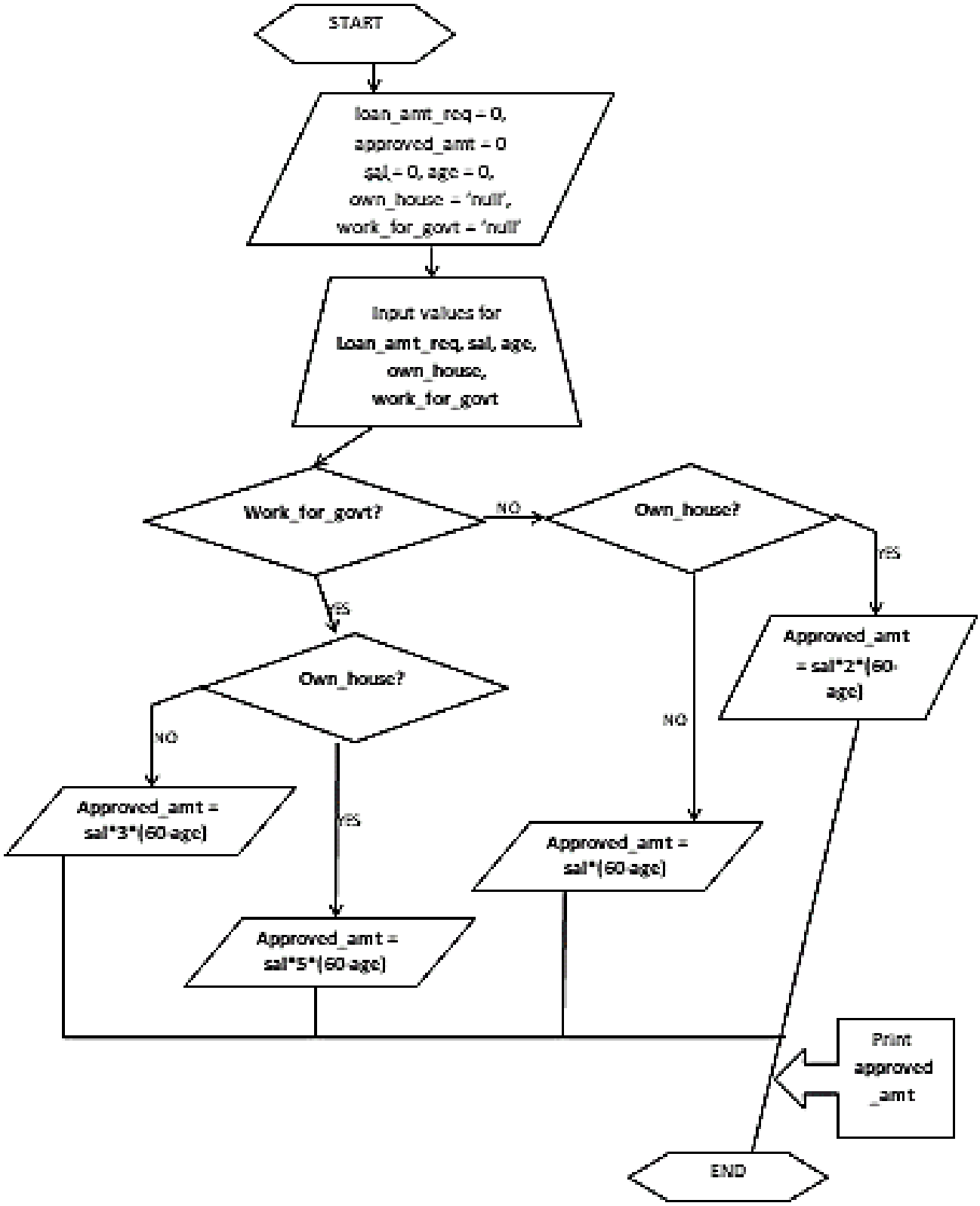
9. The purpose of the following flowchart is to double the number in each of the Boxes 2, 4, 6, 8 and 10. In order to accomplish exactly this – no more no less - what is the number in Box 1?

A. 6 B. 8 C. 10 D. 12

10. What is the number is box 13 at the end of the process?

A. 13 B. 26 C. 20 D. 15

Directions (11-12): Study the flowchart given below and answer the questions that follow.



11. For an individual who works for a government organization and owns a house, it is given that he is 35 years old and earns Rs. 15,000 per month. What would be the approved_amt (in ₹) for him?

A. ₹1875000 B. ₹ 1975000 C. ₹ 1825000 D. ₹ 2075000

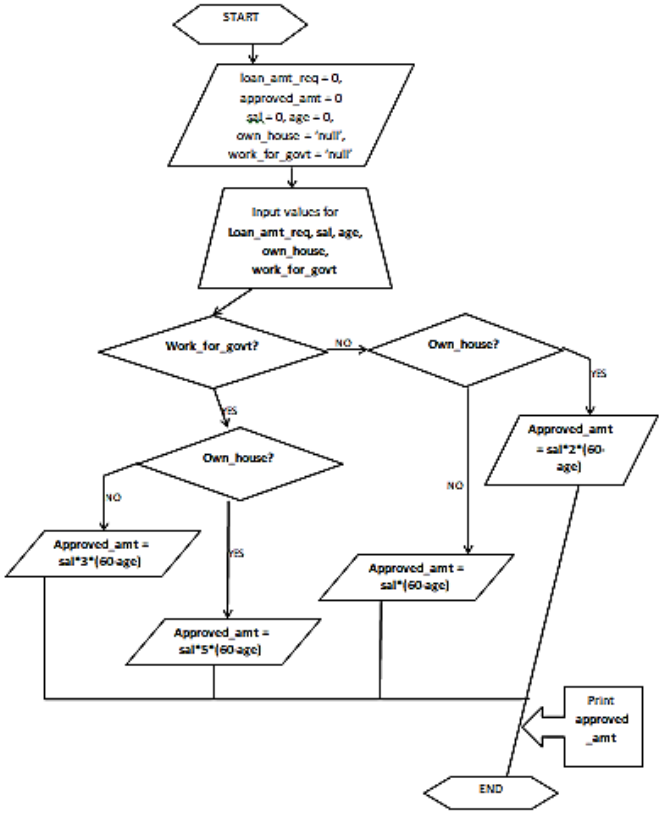
12. A person wishes to avail a loan of ₹ 50,00,000. He works for a government organization but does not own a house. Would he get the loan if he draws a salary of ₹ 60,000 and his age is 28 years. If he does get a loan, what amount would he be entitled? If not, by what amount he would be short of the required amount?

A. Yes, he would get a loan of exactly ₹ 50,00,000

B. Yes, he would get a loan equal to ₹ 57,60,000

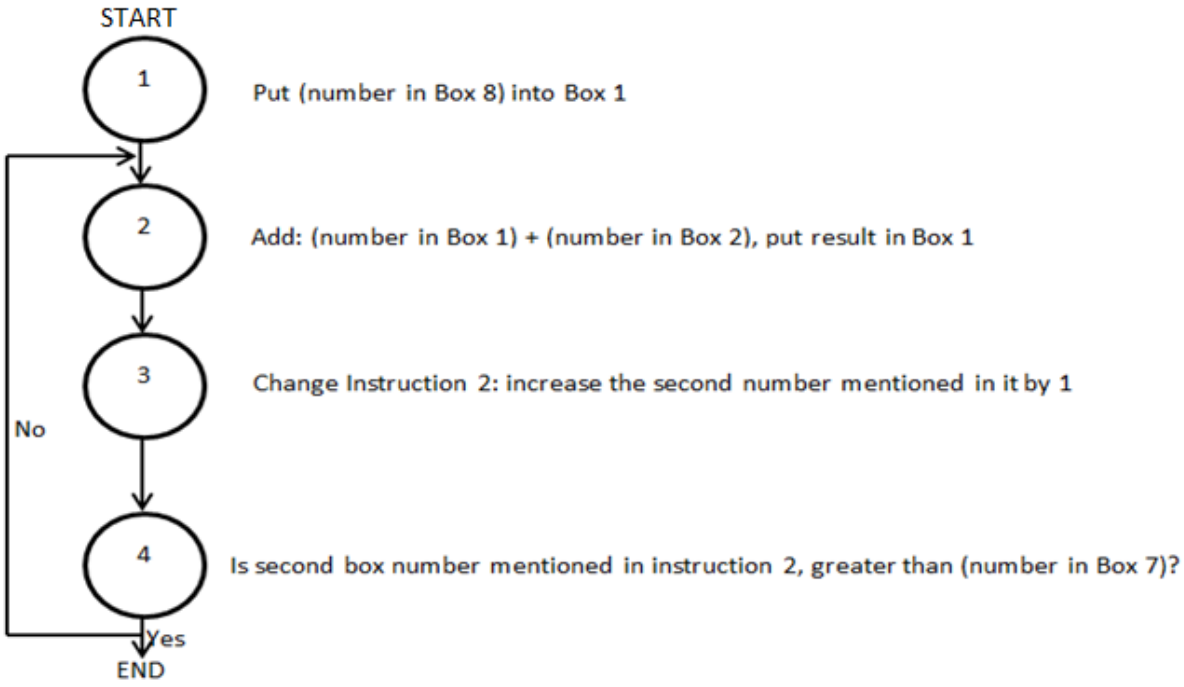
C. No, he would not get the loan. He would be short of ₹ 7,00,000

D. No, he would not get the loan. He would be short of ₹ 7,60,000



Directions (13-14): Study the flowchart given below and answer the questions that follow.

Box Number	1	2	3	4	5	6	7	8
Number	3	7	2	1	5	12	4	0



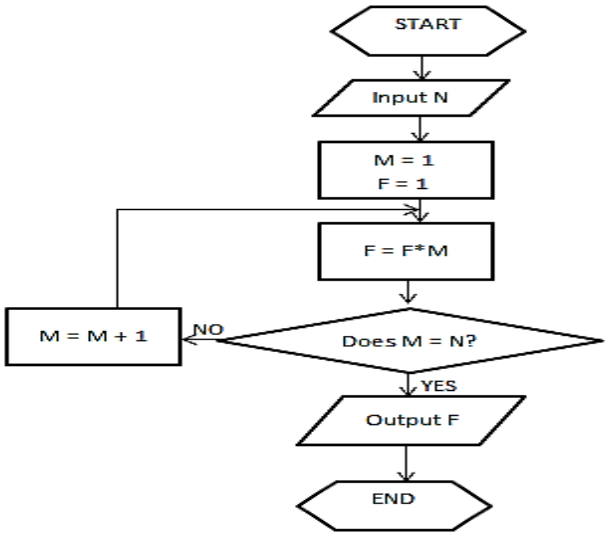
13. What number is not in Box 1?

A. 9 B. 11 C. 5 D. 10

14. How many times did the loop run?

A. Once B. Twice C. Thrice D. It is an infinite loop

Directions (15-16): Study the flowchart given below and answer the questions that follow.



15. Which of the following value will be printed if the value of N = 0?

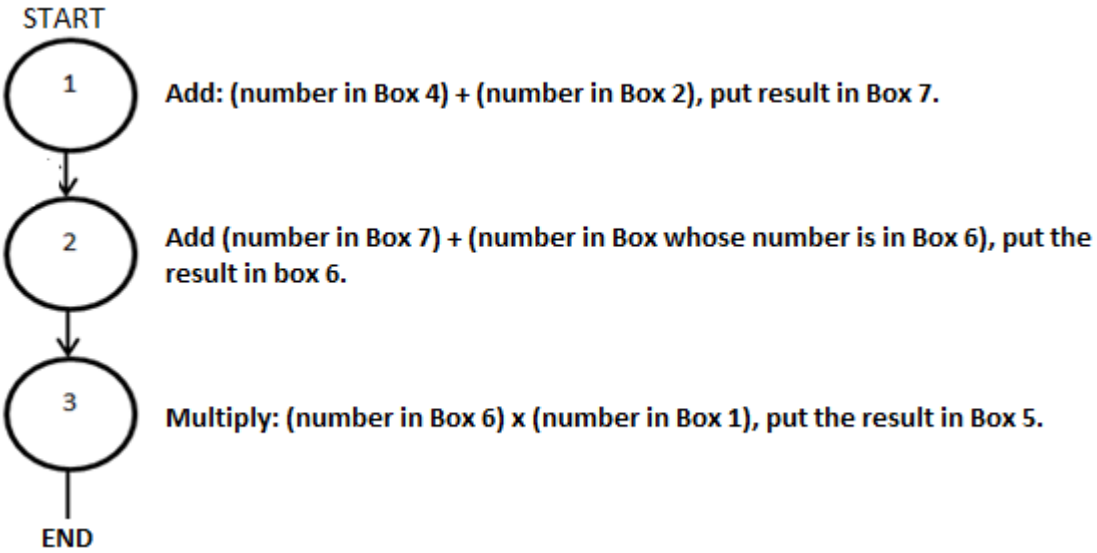
A. Zero B. 720 C. 540 D. None of these

16. Which of the following value will be printed if the value of N = 8?

A. 5 B. 1 C. 8 D. It is an infinite loop

Directions (17-18): Study the flowchart given below and answer the questions that follow.

Box No.	1	2	3	4	5	6	7	8	9	10
Value	6	3	9	2	11	2	91	48	66	1



17. What number is in Box 5?

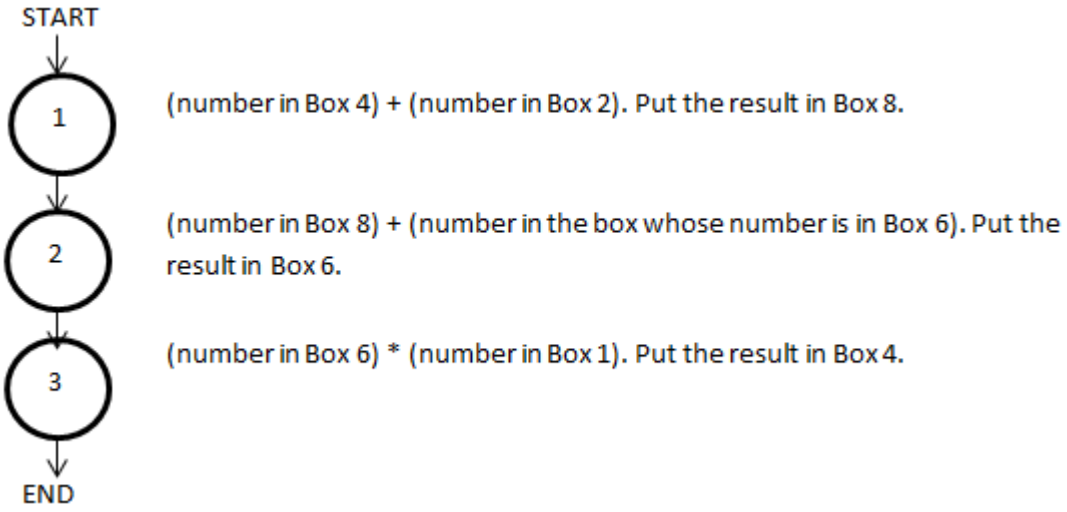
A. 55 B. 48 C. 44 D. 34

18. What is the number in Box 7?

A. 91 B. 11 C. 8 D. 5

Directions (19-20): Study the flowchart given below and answer the questions that follow.

Box No.	1	2	3	4	5	6	7	8	9	10
Value	4	3	9	2	7	2	63	36	55	9



19. Determine which number is now in Box 4.

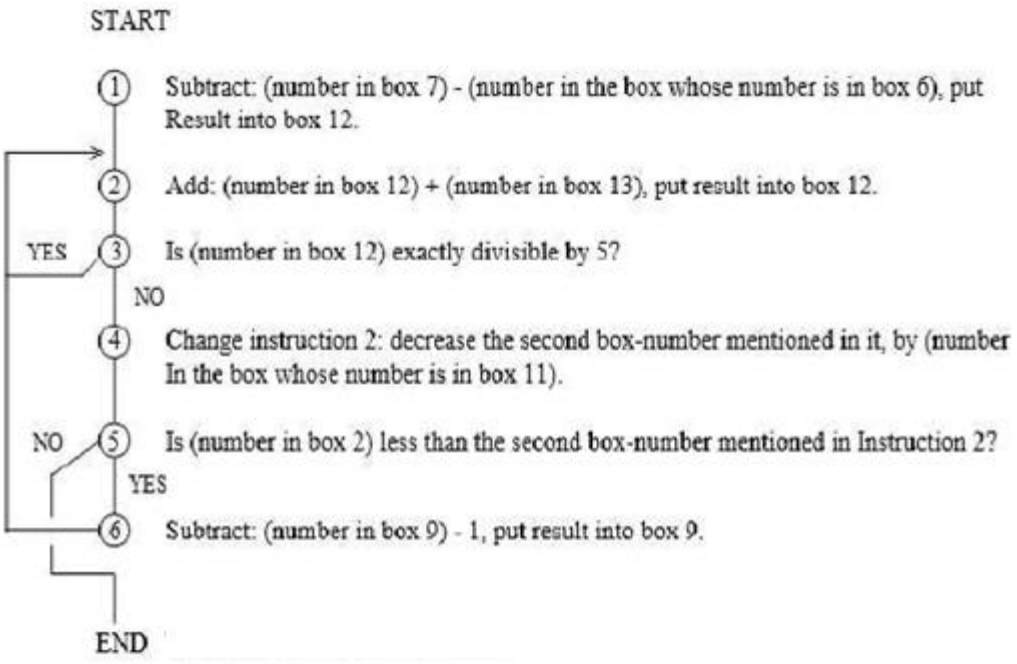
A. 32 B. 23 C. 31 D. None of these

20. Which box has the smallest number at the end of the process?

A. Box 3 B. Box 4 C. Box 6 D. Box 2

Directions (21-22): Study the flowchart given below and answer the questions that follow.

Box Number	1	2	3	4	5	6	7	8	9	10	11	12	13
Value	9	8	5	2	11	3	5	12	7	-2	4	-6	6



21. What number is in Box 12?

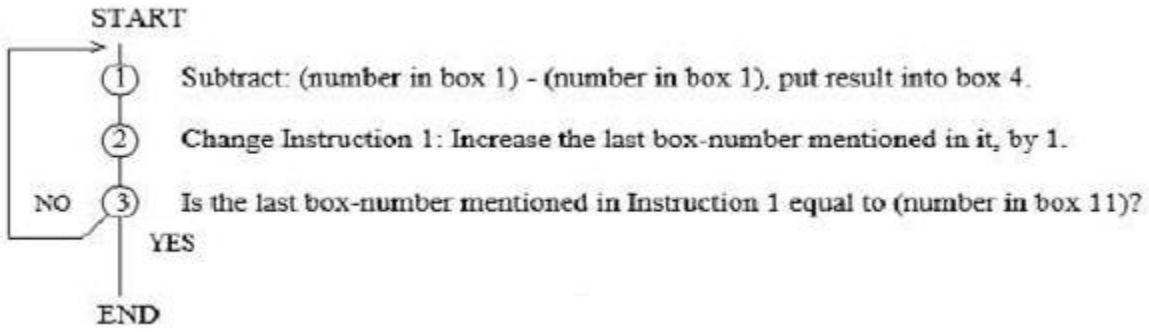
A. 34 B. 12 C. 19 D. 20

22. Which number is in Box 9 at the end of the process?

A. 4 B. 5 C. 6 D. 7

Directions (23-24): Study the flowchart given below and answer the questions that follow.

Box Number	1	2	3	4	5	6	7	8	9	10	11	12
Value	7	9	2	2	8	4	1	-9	3	6		4



23. What is the number in Box 1 at the end of the process?

A. 0 B. 9 C. 7 D. Cannot be determined

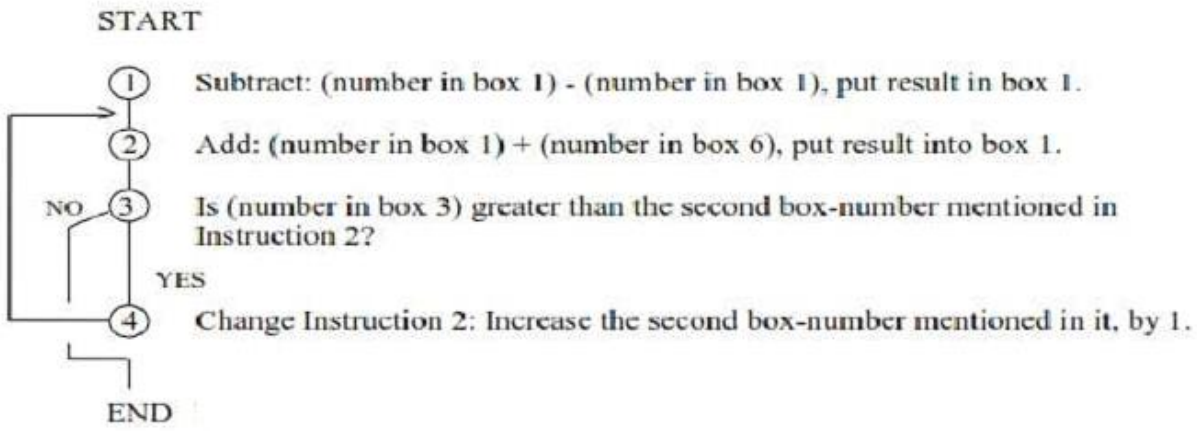
24. The purpose of the flowchart is to put zero in each of the boxes: 4, 5 and 6. In order to accomplish exactly this – no more and no less – what number must be in Box 11?

A. 8 B. 3 C. 7 D. 9

Directions (25-26): Study the flowchart given below and answer the questions that follow.

The purpose of the following flowchart is to add up numbers in boxes – 6, 7, 8 and 9 and put the total in box 1.

Box Number	1	2	3	4	5	6	7	8	9
Value	3	15		2	1	4	3	12	10



25. In order to accomplish the purpose of flowchart, what number must be in Box 3?

A. 3 B. 9 C. 7 D. 8

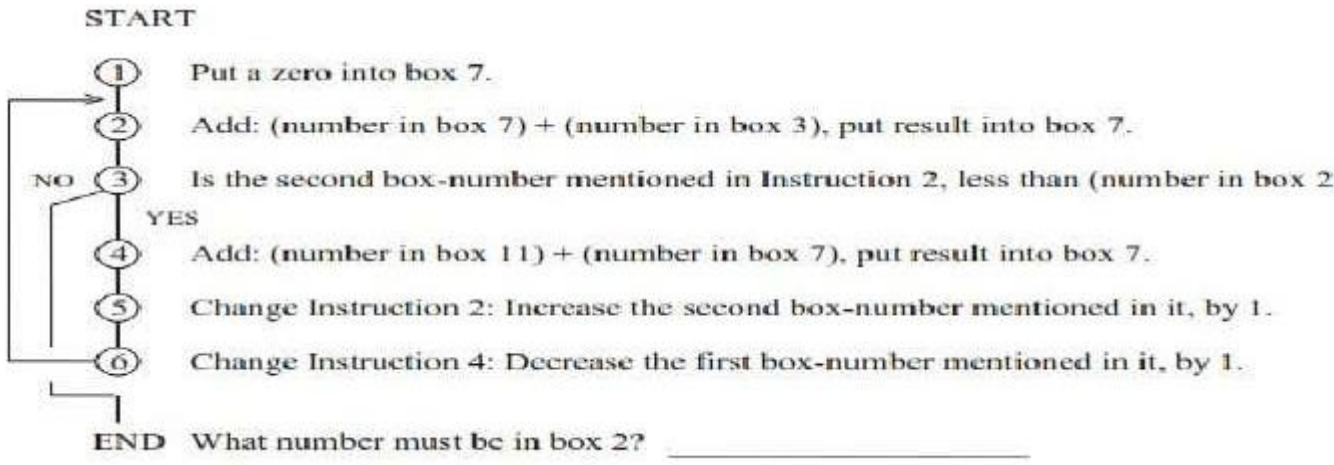
26. Which number is in Box 1 at the end of the process (assuming that the purpose has been fulfilled)?

A. 22 B. 7 C. 10 D. 19

Directions (27-28): Study the flowchart given below and answer the questions that follow.

The purpose of the following flowchart is to add up the numbers in boxes 3, 4, 5, 6, 9, 10 and 11 and to put the total in Box 7.

Box Number	1	2	3	4	5	6	7	8	9	10	11	12	13
Value	1		3	4	5	6		8	9	10	11	12	13



27. In order to accomplish the purpose – no more no less - of the flowchart, what is the smallest number which may be in Box 2?

A. 6 B. 7 C.11 D. None of these

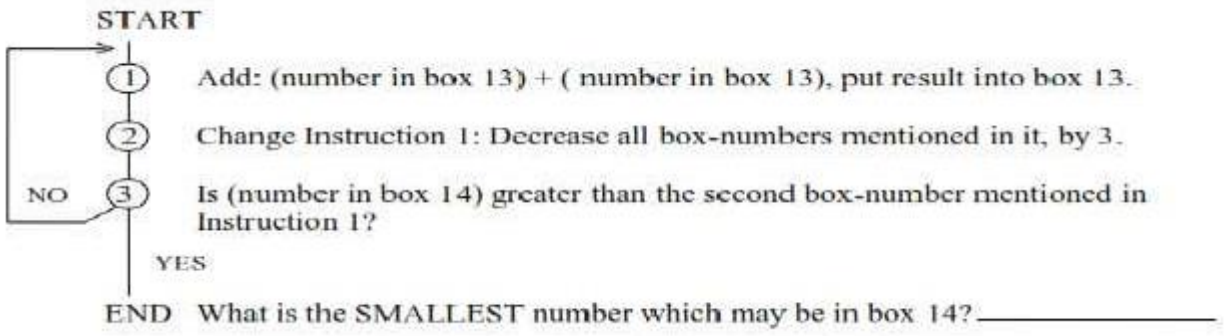
28. What is the number in Box 7 at the end of the process (assuming that the purpose has been fulfilled)?

A. 48 B. 45 C. 56 D. None of these

Directions (29-30): Study the flowchart given below and answer the questions that follow.

The purpose of the following flowchart is to double the number in each of the boxes: 13, 10, 7 and 4.

Box Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Value															



29. In order to accomplish the purpose – no more no less - of the flowchart, what is the smallest number which may be in Box 14?

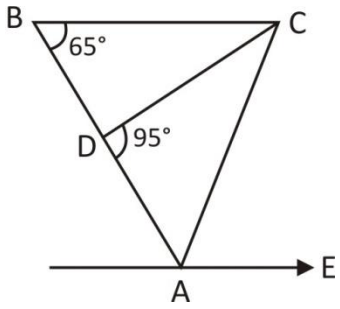
A. 8 B. 5 C.4 D. 1

30. How many Boxes are having their numbers unchanged at the end of the process?

A. 15 B. 12 C. 10 D. 11

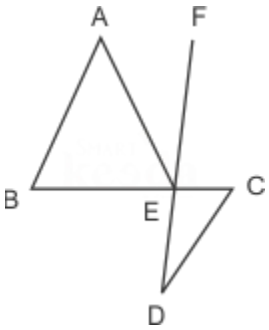
GEOMETRY-I

1. In the figure given below, ABC is a triangle. BC is parallel to AE. If BC = AC, then what is the value of ∠CAE?



A] 20° B] 30° C] 40° D] 50°

2. In the figure given below, AB is parallel to CD] ∠ABC = 65°, ∠CDE = 15° and AB = AE. What is the value of ∠AEF?



A] 30° B] 35° C] 40° D] 45°

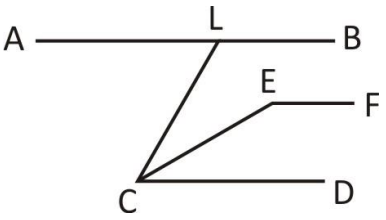
3. A wheel makes 12 revolutions per min. The angle in radian described by a spoke of the wheel in 1 s is:

A] 5π/2 B] 2π/5 C] 3π/5
D] 4π/5

4. In a Δ ABC, $\frac{1}{2}$ ∠A + $\frac{1}{3}$ ∠C + $\frac{1}{2}$ ∠B = 80°, then what is the value of ∠C?

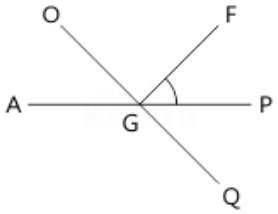
A] 35° B] 40° C] 60° D] 70°

5. In the given figure AB || CD, ∠ALC = 60° and EC is the bisector of ∠LCD. If EF || AB then the value of ∠CEF is



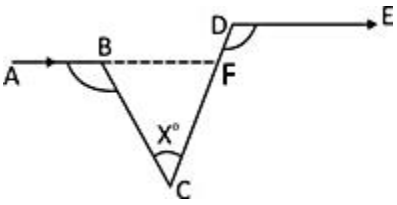
A] 120° B] 140° C] 150° D] None of these

6. In the given figure lines AP and OQ intersect at G. If ∠AGO + ∠PGF = 70° and ∠PGQ = 40°. Find the angle value of ∠PGF.



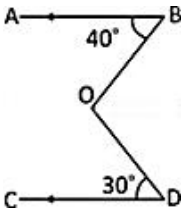
A] 31° B] 35° C] 30° D] 20°

7. In the adjoining figure, ∠ABC = 100°, ∠EDC = 120° and AB || DE. Then, ∠BCD is equal to:



A] 80° B] 60° C] 40° D] 20°

8. In the given figure, AB || CD, ∠ABO = 40° and ∠CDO = 30°. If ∠DOB = x°, then the value of x is:



A] 35° B] 110° C] 70° D] 140°

9. The three sides of a triangle are 15, 25 and x units. Which one of the following is correct?

A] $10 < x < 40$ B] $10 \leq x \leq 40$ C] $10 \leq x < 40$ D] $10 < x \leq 40$

10. The sides of a right angled triangle are equal to three consecutive numbers expressed in centimetres. What can be the area of such a triangle?

A] 6 cm^2 B] 8 cm^2 C] 10 cm^2 D] 12 cm^2

11. If AD is the internal angular bisector of angle A of ΔABC with AB = 3 cm and AC = 1 cm, then what is BD : BC equal to?

A] 1 : 3 B] 1 : 4 C] 2 : 3 D] 3 : 4

12. The in-radius of an equilateral triangle is of length 3 cm. Then the length of each of its medians is

A] 12 cm B] 9 / 2 cm C] 4 cm D] 9 cm

13. If in a triangle, the circumcentre, incentre, centroid and orthocentre coincide, then the triangle is

A] Acute angled B] Isosceles C] Right angled D] Equilateral

14. If ABC is an equilateral triangle and D is a point on BC such that AD ⊥ BC, then

A] AB : BD = 1 : 1 B] AB : BD = 1 : 2

C] AB : BD = 2 : 1 D] AB : BD = 3 : 2

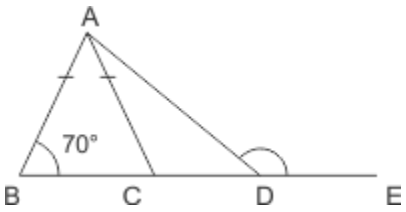
15. Longest side of a triangle is 20 cm and another side is 10 cm. If area of the triangle is 80 cm^2, then what is the length (in cm) of its third side?

A] 260 B] 250 C] 256 D] 240

16. In a ∆ ABC, the sides AB and AC have been produced to D and E. Bisectors of ∠ CBD and ∠ BCE meet at O. If ∠ A = 64°, then ∠ BOC is :

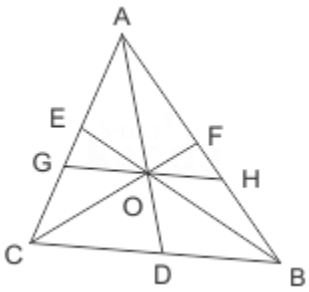
A] 52° B] 58° C] 26° D] 112°

17. In ΔABC, AB = AC, ∠B = 70°, ∠BAD = 80°, ∠ADE = ?



A] 150° B] 135° C] 140° D] 120°

18. In the figure shown below AD, BE and CF are all medians of triangle ABC, and GH is parallel to BC. If BH = 10 cm, what is the length (in cm) of AB?



A] 10 B] 20 C] 25 D] 30

19. If the hypotenuse of a right triangle is 41 cm and the sum of the other two sides is 49 cm, find the difference between the other sides.

A] 30 cm B] 31 cm C] 32 cm D] 29 cm

20. A point D is taken from the side BC of a right-angled triangle ABC, where AB is hypotenuse. Then

A] $AB^2 + CD^2 = BC^2 + AD^2$ B] $CD^2 + BD^2 = 2AD^2$

C] $CD^2 + BD^2 = 2AD^2$ D] $AB^2 = AD^2 + BD^2$

21. In a right-angled triangle, the product of two sides is equal to half of the square of the third side i.e., hypotenuse. One of the acute angle must be

A] 60° B] 30° C] 45° D] 15°

22. ABC is an isosceles triangle such that AB = AC and AD is the median to the base BC with ∠ABC = 35°. Then ∠BAD is

A] 35° B] 55° C] 70° D] 110°

23. Which of the set of three sides can't form a triangle?

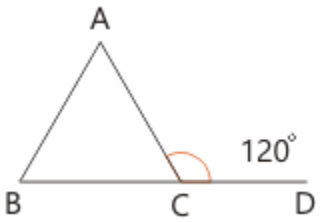
A] 5 cm, 6 cm, 7 cm B] 5 cm, 8 cm, 15 cm

C] 8 cm, 15 cm, 18 cm D] 6 cm, 7 cm, 11 cm

24. The sides of triangle are 3 cm, 4 cm and 5 cm. The area (in cm2) of the triangle formed by joining the mid-points of the sides of the triangle is:

A] 6 B] 2 C] 3 / 2 D] 3 / 4

25. In the figure given, ∠BAC : ∠ABC = 2 : 3 . Find the measure of ∠ABC.



A] 72° B] 120° C] 36° D] 108°

26. The sides of a triangle are in the ratio 3 : 4 : 6 . The triangle is :

A] acute-angled B] right-angled

C] obtuse-angled D] either acute-angled or right-angled

27. If the circumcentre of a triangle lies outside it, then the triangle is

A] Equilateral B] Acute angled C] Right angled D] Obtuse angled

28. ABC is a triangle. The bisectors of the internal angle ∠B and external angle ∠C intersect at D. if ∠BDC = 50°, then ∠A is

A] 100° B] 90° C] 120° D] 60°

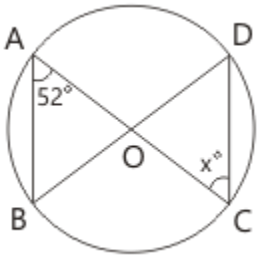
29. Two circles touch each other externally at P. AB is a direct common tangent to the two circles, A and B are points of contact and ∠PAB = 35° . Then ∠ABP is

A] 35° B] 55° C] 75° D] 65°

30. In a circle with centre O, AB and CD are two diameters perpendicular to each other. The length of chord AC is :

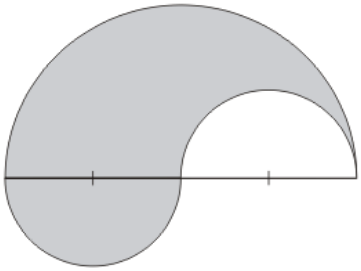
A] 2 AB B] $\sqrt{2}$AB C] $\frac{1}{2}$AB D] $\frac{1}{\sqrt{2}}$AB

31. O is the centre of the circle. if ∠BAC = 52°, then ∠OCD is equal to



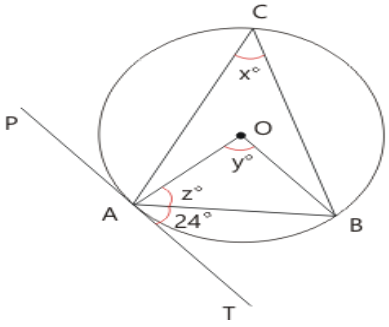
A] 52° B] 104° C] 128° D] 76°

32. What is the area (in cm2) of shaded portion bounded by three semicircle as shown in the figure? (It is given that the radius of two smaller semicircle is 1 cm)



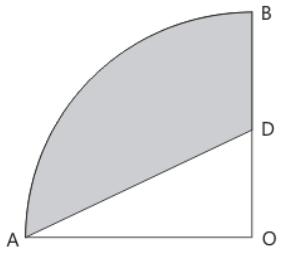
A] 4π B] 8π – 1 /2 C] 4π – ½ D] None of these

33. In the given figure 'O' is the centre of the circle and PAT is the tangent at point A. Find the measures of x°, y°, and z° respectively.



A] 66°, 66°, 66° B] 66°, 24°, 72° C] 24°, 24°, 96° D] 24°, 48°, 66°

34. AOB is quadrant of a circle with centre O and radius 4.2 cm. If OD = 2 cm, find the area of the shaded region.



A] 8.25 cm^2 . B] 7.50 cm^2 C] 9.66 cm^2 D] 6.125 cm^2

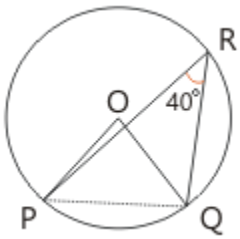
35. The length of the common chord of two intersecting circles is 24 cm. If the diameters of the circles are 30 cm and 26 cm, then the distance between the centres of the circles (in cm) is

A] 13 B] 14 C] 15 D] 16

36. A rectangle of area 48 cm^2 is inscribed inside a circle of radius 5 cm. What will be the perimeter (in cm) of the rectangle?

A] 20 B] 24 C] 25 D] 28

37. In the given figure, O is the centre of the circle. If ∠PRQ = 40°, then what is ∠OPQ?

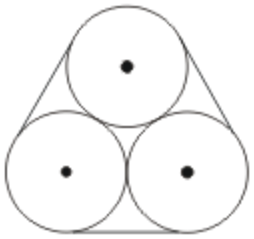


A] 30° B] 40° C] 150° D] 50°

38. The distance between two parallel chords of length 6 cm each in a circle of diameter 10 cm is

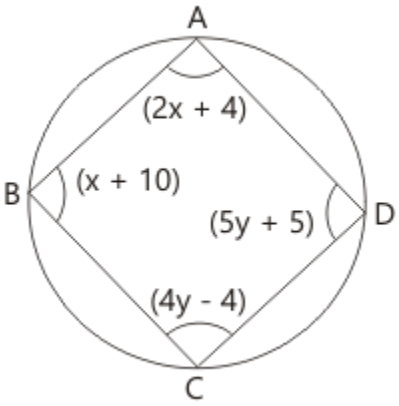
A] 8 cm B] 7 cm C] 6 cm D] 5.5 cm

39. Three circles of diameter 10 cm each, are bound together by a rubber band, as shown in the figure. The length of the rubber band, in cm, if it is stretched as shown, is



A] 30 B] 30 + 10π C] 10π D] 60 + 20π

40. The values in x and y in the given figure are measure of angles. The value of x + y is equal to



A] 90° B] 85° C] 75° D] 65°

GEOMETRY-II

1. The length of the diagonal BD of the parallelogram ABCD is 18 cm. If P and Q are the centroid of the Δ ABC and Δ ADC respectively then the length of the line segment PQ is

   A] 4 cm B] 6 cm C] 9 cm D] 12 cm

2. The side AB of a parallelogram ABCD is produced to E in such way that BE = AB] DE intersects BC at Q. The point Q divides BC in the ratio

   A] 1 : 2 B] 1 : 1 C] 2 : 3 D] 2 : 1

3. In a parallelogram PQRS, angle P is four times of angle Q, then the measure of angle R is_____.

   A] 144° B] 36° C] 72° D] 130°

4. ABCD is a rhombus. A straight line through C cuts AD produced at P and AB produced at Q. If DP = $\frac{1}{2}$ AB, then the ratio of the length of BQ and AB is

   A] 2 : 1 B] 1 : 2 C] 1 : 1 D] 3 : 1

5. In a quadrilateral *ABCD*, with unequal sides if the diagonals *AC* and *BD* intersect at right angles, then
   A] $AB^2 + BC^2 = CD^2 + DA^2$ B] $AB^2 + CD^2 = BC^2 + DA^2$
   C] $AB^2 + AD^2 = BC^2 + CD2$ D] $AB^2 + BC^2 = 2(CD^2 + DA^2)$

6. The ratio of the angles ∠A and ∠B of a non-square rhombus ABCD is 4 : 5, then the value of ∠C is :
   A] 50° B] 45° C] 80° D] 95°

7. ABCD is a rhombus whose side AB = 4 cm and ∠ABC = 120°, then the length of diagonal BD is equal to:
   A] 1 cm B] 2 cm C] 3 cm D] 4 cm

8. ABCD is a rhombus. AB is produced to F and BA is produced to E such that AB = AE = BF. Then:
   A] ED > CF B] ED ^ CF C] $ED^2 + CF^2 = EF^2$ D] ED || CF

9. ABCD is a trapezium whose side AD is parallel to BC. Diagonals AC and BD intersect at O. If AO = 3, CO = x - 3, BO = 3x -19 and DO = x - 5, the value(s) of x will be:

A] 7, 6 B] 12, 6 C] 7, 10 D] 8, 9

10. In a quadrilateral ABCD, the bisectors of ∠A and ∠B meet at O. If ∠C = 70° and ∠D = 130°, then measure of ∠AOB is

A] 40° B] 60° C] 80° D] 100°

11. ABCD is a trapezium where AD || BC. The diagonal AC and BD intersect each other at the point O. If AO = 3, CO = x – 3, BO = 3x – 19 and DO = x – 5, the value of x is

A] – 8, 9 B] 8, – 9 C] – 8, – 9 D] 8, 9

12. If PQRS is a rhombus and ∠SPQ = 50°, then ∠RSQ is

A] 55° B] 65° C] 75° D] 45°

13. ABCD is a cyclic trapezium whose sides AD and BC are parallel to each other. If ∠ABC = 75° then the measure of ∠BCD is:

A] 75° B] 95° C] 45° D] 105°

14. If ABCD be a rhombus, AC is its smallest diagonal and ∠ABC = 60°, find length of a side of the rhombus when AC = 6 cm.

A] 6 cm. B] 3 cm. C] $6\sqrt{2}$ cm. D] $3\sqrt{3}$ cm.

15. AB is a diameter of a circle having centre at O. PQ is a chord which does not intersect AB. Join AP and BQ. If ∠BAP = ∠ABQ, then ABQP is a:

A] cyclic square B] cyclic trapezium

C] cyclic rhombus D] cyclic rectangle

16. ABCD is a cyclic trapezium in which AD || BC. If ∠ABC = 70°, then ∠BCD is

A] 110° B] 80° C] 70° D] 90

17. ABCD is a cyclic trapezium with AD || BC. If ĐA = 105°, then other three angles are

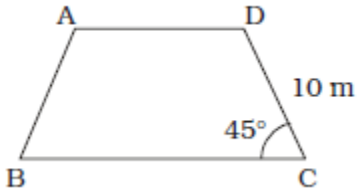
A] ∠B = 75°, ∠C = 75°, ∠D = 105° B] ∠B = 105°, ∠C = 75°, ∠D = 75°

C] ∠B = 75°, ∠C = 105°, ∠D = 75° D] ∠B = 105°, ∠C = 105°, ∠D = 75°

18. If the parallel sides of a trapezium are 8 cm. and 4 cm. M and N are the mid-points of the diagonals of the trapezium, then length of MN is _____.

A] 12 cm. B] 6 cm. C] 1 cm. D] 2 cm.

19. ABCD is a trapezium in which AD || BC and AB = DC = 10 m. then the distance of AD from BC is:



A] 10 $\sqrt{2}$ m B] 4$\sqrt{2}$ m C] 5$\sqrt{2}$ m D] 6$\sqrt{2}$ m

20. At least two pairs of consecutive angles are congruent in a _____.

A] Parallelogram B] Isosceles trapezium
C] Rhombus D] Kite

21. If PQRS be a rectangle such PQ = $\sqrt{3}$ QR. Then, what is ∠PRS equal to?

A] 60° B] 45° C] 30° D] 15°

22. In a trapezium, the two non-parallel sides are equal in length, each being of 5 cm. The parallel sides are at a distance of 3 cm apart. If the smaller side of the parallel sides is of length 2 cm, then the sum of the diagonals of the trapezium is

A] 10$\sqrt{5}$ cm B] 6$\sqrt{5}$ cm C] 3$\sqrt{5}$ cm D] 5$\sqrt{5}$ cm

23. The area of a rectangle lies between 40 cm^2 and 45 cm^2. If one of the sides is 5 cm, then its diagonal lies between

A] 8 cm and 10 cm B] 9 cm and 11 cm C] 10 cm and 12 cm D] 11 cm and 13 cm

24. The area of a rhombus with side of 13 cm and one diagonal 10 cm will be

A] 140 square cm B] 130 square cm C] 120 square cm D] 110 square cm

25. ABCD is a parallelogram. E is a point on BC such that BE : EC = m : n. If AE and DB intersect in F, then what is the ratio of the area of ΔFEB to the area of ΔAFD?

A] m:n B] m^2:n^2 C] n^2:m^2 D] m^2:$(m+n)^2$

26. A quadrilateral ABCD is inscribed in a circle. If AB is parallel to CD and AC = BD, then the quadrilateral must be a

A] parallelogram B] rhombus C] trapezium D] None of these

27. ABCD is a cyclic trapezium such that AD || BC, if ∠ABC = 70°, then the value of ∠BCD is:

A] 60° B] 70° C] 40° D] 80°

28. The ratio of the angles of a quadrilateral is 5 : 4 : 3 : 8. The smallest angle of a triangle is one-fourth the largest angle of the quadrilateral and the largest angle of the triangle 38° more than the second largest angle of the triangle. What is the second largest angle of the triangle?

A] 35° B] 53° C] 43° D] 34°

29. If an exterior angle of a cyclic quadrilateral be 50°, then the interior opposite angles is:

A] 130° B] 40° C] 50° D] 90°

30. If the ratio of an external angle and an internal angle of a regular polygon is 1 : 17, then the number of sides of the regular polygon is

A] 20 B] 18 C] 36 D] 12

31. A quadrilateral ABCD circumscribes a circle and AB = 6 cm, CD = 5 cm and AD = 7 cm. The length of side BC is

A] 4 cm B] 5 cm C] 3 cm D] 6 cm

32. ABCD is a cyclic quadrilateral. The side AB is extended to E in such a way that BE = BC. If ∠ADC = 70°, ∠BAD = 95°, then ∠DCE is equal to

A] 140° B] 120° C] 165° D] 110°

33. The difference between the exterior and interior angles at a vertex of a regular polygon is 150°. The number of sides of the polygon is

A] 10 B] 15 C] 24 D] 30

34. Ratio of the number of sides of two regular polygons is 5 : 6 and the ratio of their each interior angle is 24 : 25. The number of sides of these two polygons are:

A] 20, 24 B] 15, 18 C] 10, 12 D] 5, 6

35. ABCD is a cyclic quadrilateral and O is the centre of the circle. If ∠COD = 140° and ∠BAC = 40°, then the value of ∠BCD is equal to

A] 70° B] 90° C] 60° D] 80°

36. ABCD is a cyclic trapezium with AB || DC and AB = diameter of the circle. If ∠CAB = 30°, then ∠ADC is

A] 60° B] 120° C] 150° D] 30°

37. ABCD is a cyclic quadrilateral. AB and DC are produced to meet at P. If ∠ADC = 70° and ∠DAB = 60°, then the ∠PBC + ∠PCB is

A] 130° B] 150° C] 155° D] 180°

38. A cyclic quadrilateral ABCD is such that AB = BC, AD = DC, AC ⊥ BD, ∠CAD = Θ. Then the angle ∠ABC =

A] Θ B] Θ/2 C] 2Θ D] 3Θ

39. The diagonals AC and BD of a cyclic quadrilateral ABCD intersect each other at the point P. Then, it is always true that

A] BP . AB = CD . CP B] AP . CP = BP . DP

C] AP . BP = CP . DP D] AP . CD = AB . CP

40. A quadrilateral ABCD circumscribes a circle and AB = 6 cm, CD = 5 cm and AD = 7 cm. The length of side BC is _____.

A] 4 cm B] 5 cm C] 3 cm D] 6 cm

MENSURATION

1. Two circles touch internally. The sum of their areas is 116 pi cm2 and distance between their centres is 6 cm. Then, the radii of the circles are

   A] 4 cm and 9 cm B] 5 cm and 10 cm

   C] 4 cm and 8 cm D] 4 cm and 10 cm

2. A lawn is in the shape of a rectangle of length 60 m and width 40 m. There is a footpath of uniform width 1m bordering the lawn. The area of the path is

   A] 194 m2 B] 196 m2 C] 198 m2 D] 200 m2

3. The area of a rectangular plot is 180 m2. If its length is 18 m, its perimeter is

   A] 28 m B] 56 m C] 360 m D] None of these

4. The base of triangular field is three times its altitude. If the cost of cultivating the field at 50 per hectare be Rs 675, then its base and height are

   A] 900 m and 300 m B] 600 m and 300 m

   C] 500 m and 200 m D] None of these

5. With in a rectangular garden 10 m wide and 20 m long, we wish to pave a walk around the borders of uniform width to leave an area of 96m2 for flowers. The width of the walk is

   A] 1 m B] 2 m C] 2.5 m D] 2.56 m

6. A toy is in the form of a cone mounted on a hemisphere such that the diameter of the base of the cone is equal to that of the hemisphere. If the diameter of the base of the cone is 6 cm and its height is 4 cm, what is the surface area in cm2 of the toy? (Take pi = 3.14)

   A] 93.62 B] 103.62 C] 113.62 D] 115.50

7. The dimensions of a field are 12 m × 10 m. A pit 5 m long, 4 m wide and 2 m deep is dug in one corner of the field and the Earth removed has been evenly spread over the remaining area of the field. The level of the field is raised by

   A] 30 cm B] 35 cm C] 38 cm D] 40 cm

8. A rectangular tank is 80 × 40 cm3. Water flows into it through a pipe of cross-section area 40 cm2 at the speed of 10 km/h. The rise in the level of water in the tank in ½ h is

A] 3/2 cm B] 4/3 cm C] 5/8 cm D] 6 cm

9. A measuring jar of internal diameter 10 cm is partially filled with water. Four equal spherical balls of diameter 2 cm each are dropped in it and they sink down in the water completely. The change in the level of water in the jar is

A] 16/65 cm B] 15/16 cm C] 16/75 cm D] None of these

10. The height of a cone is 30 cm. A small cone is cut off at the top by a plane parallel to the base. If its volume be 1/27 of the volume of the given cone, then the height above the base where the section is made, is

A] 12 cm B] 15 cm C] 20 cm D] 22 cm

11. From a wooden cylindrical block, whose diameter is equal to its height, a sphere of maximum possible volume is carved out. What is the ratio of the volume of the utilised wood to that of the wasted wood?

A] 2 : 1 B] 1 : 2 C] 2 : 3 D] 3 : 2

12. A circus tent is made of canvas and is in the form of a right circular cylinder and a right circular cone above it, the diameter and height of the cylindrical part of the tent are 126 m and 5 m, respectively. The total height of the tent is 21 m. Then, the cost of the canvas used for tent at the rate of ` 12 per m2

A] Rs 14850 B] Rs 168200 C] Rs 178200 D] Rs 112000

13. A solid sphere of radius 6 cm is melted into a hollow cylinder of uniform thickness. If the external radius of the base of the cylinder is 5 cm and its height is 32 cm. The uniform thickness of the cylinder is

A] 1.5 cm B] 3 cm C] 1.2 cm D] 1 cm

14. Given a solid cylinder of radius 10 cm and length 1000 cm a cylindrical hole is made into it to obtain a cylindrical shell of uniform thickness and having volume equal to one-fourth of the original volume of the original cylinder. The thickness of the cylindrical shell is

A] 5 (sq rt 5 − 2) cm B] 7 (sq rt2 − 3) cm

C] 10 cm D] 5 sq rt 2 cm

15. A tent is of the shape of right circular cylinder up to a height of 3 m and then becomes a right circular cone with a maximum height of 13.5 m above the ground. The cost of painting the inner side of the tent at the rate of Rs 2 per m2, if the radius of the base is 14 m is

A] Rs2048 B] Rs 2068 C] Rs 2008 D] Rs 2088

16. A conical flask of base radius r and height h is full of milk. The milk is now poured into a cylindrical flask of radius 2r. What is the height to which the milk will rise in the flask?

A] h/3 B] h/6 C] h/9 D] h/12

17. The radius and height of a right circular cone are in the ratio 3 : 4 and its volume is 96 pi cm3. What is the lateral surface area?

A] 24 pi cm2 B] 36 pi cm2 C] 48 pi cm2 D] 60 pi cm2

18. The radii of the circular ends of a bucket of height 40 cm are of lengths 35 cm and 14 cm. What is the volume of the bucket?

A] 60060 cm3 B] 70040 cm3 C] 80080 cm3 D] 80160 cm3

19. The radii of two cylinders are in the ratio 2 : 3 and their curved surface areas are in the ratio 5 : 3. What is the ratio of their volumes?

A] 20 : 27 B] 10 : 9 C] 9 : 10 D] 27 : 20

20. A cylindrical vessel of height 10 cm has base radius 60 cm. If d is the diameter of a spherical vessel of equal volume, then what is the value of d ?

A] 30 cm B] 60 cm C] 90 cm D] 120 cm

21. A cube of 9 cm edge is immersed completely in a rectangular vessel containing water. If the dimensions of base are 15 cm and 12 cm. Then, the rise in water level in the vessel is

A] 4.05 cm B] 4 cm C] 3.5 cm D] 3 cm

22. A cone is inscribed in a hemisphere such that their bases are common. If C is the volume of the cone and H that of the hemisphere, then what is the value of C :H ?

A] 1 : 2 B] 2 : 3 C] 3 : 4 D] 4 : 5

23. If the diameter of a wire is decreased by 10%, by how much per cent (approximately) will the length be increased to keep the volume constant?

A] 5% B] 17% C] 20% D] 23%

24. The diameter of a solid metallic right circular cylinder is equal to its height. After cutting out the largest possible solid sphere S from this cylinder, the remaining material is recast to form a solid sphere S1. What is the ratio of the radius of sphere S to that of sphere S1?

A] $1 : 2^{1/3}$ B] $2^{1/3} : 1$ C] $2^{1/3} : 3^{1/3}$ D] $3^{1/2} : 2^{1/2}$

25. A square has its side equal to the radius of a sphere. The square revolves round a side to generate a surface of total area S. If A is the surface area of the sphere, then which one of the following is correct?

A] A = 3S B] A = 2S C] A = S D] A < S

26. A swimming pool is 24 m long and 15 m broad. When x number of men dive into the pool, the height of the water rises by 1 cm. If the average amount of water displaced by one man is 0.1 m3, then what is the value of x?

A] 36 B] 72 C] 108 D] 360

27. Water is distributed to a town of 50000 inhabitants from a rectangular reservoir consisting of 3 equal compartments. Each compartment has length and breadth 200 m, 100 m, respectively and 12 m depth of water in the beginning. The allowance is 20 L per head per day. For how many days will the supply of water hold out?

A] 240 days B] 720 days C] 800 days D] 900 days

28. A right circular cylinder and a right circular cone have equal bases and equal volumes. But the lateral surface area of the right circular cone is 15/8 times the lateral surface area of the right circular cylinder. What is the ratio of radius to height of the cylinder?

A] 3 : 4 B] 9 : 4 C] 15 : 8 D] 8 : 15

29. A field is 125 m long and 15 m wide. A tank 10 m × 7.5 m × 6 m was dug in it and the Earth, thus, dug out was spread equally on the remaining field. The level of the field thus raised is equal to which one of the following?

A] 15 cm B] 20 cm C] 25 cm D] 30 cm

30. A right circular cone is cut by a plane parallel to its base in such a way that the slant heights of the original and the smaller cone thus obtained are in the ratio 2 : 1. If V1 and V2 are respectively the volumes of the original cone and of the new cone, then what is $V_1 : V_2$?

A] 2 : 1 B] 3 : 1 C] 4 : 1 D] 8 : 1

31. A sphere is inscribed in a cubical box such that the sphere is tangent to all six faces of the box. What is the ratio of the volume of the cubical box to the volume of sphere?

A] 6pi B] 36pi C] 4pi/3 D] 6/pi

32. From a solid cylinder of height 4 cm and radius 3 cm, a conical cavity of height 4 cm and of base radius 3 cm is hollowed out. What is the total surface area of the remaining solid?

A] 15pi cm2 B] 22pi cm2 C] 33pi cm2 D] 48pi cm2

33. The curved surface of a cylinder is 1000 cm2. A wire of diameter 5 mm is wound around it, so as to cover it completely. What is the length of the wire used?

A] 22 m B] 20 m C] 18 m D] None of these

34. In order to fix an electric pole along a roadside, a pit with dimensions 50 cm × 50 cm is dug with the help of a spade. The pit is prepared by removing Earth by 250 strokes of spade. If one stroke of spade removes 500 cm3 of Earth, then what is the depth of the pit?

A] 2 m B] 1 m C] 0.75 m D] 0.5 m

35. The volume of a cone is equal to that of a sphere. If the diameter of base of cone is equal to the diameter of the sphere, what is the ratio of height of cone to the diameter of the sphere?

A] 2 : 1 B] 1 : 2 C] 3 : 1 D] 4 : 1

36. The length, breadth and height of a rectangular parallelopiped are in ratio 6 : 3 : 1. If the surface area of a cube is equal to the surface area of this parallelopiped, then what is the ratio of the volume of the cube to the volume of the parallelopiped?

A] 1 : 1 B] 5 : 4 C] 7 : 5 D] 3 : 2

37). A hollow hemisphere is made of a sheet of a metal 1 cm thick. If the outer radius is 5 cm. What is the weight of the hemisphere (1 cm3 of the metal weight 9 g)?

A] 54pi g B] 366pi g C] 122pi g D] 108pi g

38. Half of a large cylindrical tank open at the top is filled with water and identical heavy spherical balls are to be dropped into the tank without spilling water out. If the radius and the height of the tank are equal and each is four times the radius of a ball, what is the maximum number of balls that can be dropped?

A] 12 B] 24 C] 36 D] 48

39. A cylinder is circumscribed about a hemi sphere and a cone is inscribed in the cylinder to have its vertex at the centre of one end, and the other end as its base. The volume of the cylinder, hemisphere and the cone are respectively in the ratio

A] 2 : 3 : 2 B] 3 : 2 : 1 C] 3 : 1 : 2 D] 1 : 2 : 3

40. A conical cavity is drilled in a circular cylinder of height 15 cm and base radius 8 cm. The height and the base radius of the cone are also same. Then the whole surface area of the remaining solid is

A] 440 pi cm2 B] 240 pi cm2 C] 640 pi cm2 D] 960 pi cm2

EQUATION

1. If a = -2 and b = -2, what is the value of A^3 - 1) / B - 1)
   A] 3 B] -9 C] -3 D] 9

2. If -2(x + 9) = 20, then - 4x =
   A] -76 B] -19 C] 0 D] 76

3. X is a variable such that if 20% of it is added to its fifth the result is equal to 12 subtracted from seven tenths of x. Find x.
   A] 40 B] 1/5 C] 7/10 D] 20

4. The area A of a trapezoid is given by the formula A = 0.5B + B)h, where b and B are the sizes of the bases and h the size of the height of the trapezoid. Express B in terms of A, b and h.
   A] 0.5Ah – b B] 2A/h – b C] (2A – b)/h D] 2A/h + b

5. Tom, Linda and Alex have $120 dollars. Alex has the third of what Tom has and Linda has twice as much as Alex. How much money, in dollars, does Linda have?
   A] 10 B] 20 C] 40 D] 60

6. Which of the following is equivalent to $6x^2$ - 11x - 2?
   A] (6x - 1)(x + 2) B] (3x - 1)(2x + 2) C] (3x + 1)(2x - 2) D] (6x + 1)(x - 2)

7. Which of the following is a factor of x^2 - 7x - 8?
   A] x + 1 B] x + 8 C] x + 7 D] x - 1

8. $(2xy^2 - 3x^2y) - (2x^2y^2 - 4x^2y)$ =
   A] $2x^2y^2$ B] $-2x^2y^2 - 7x^2y - 2x^2y^2$
   C] $-2x^2y^2 + x^2y - 2x^2y^2$ D] $-2x^2y^2 + x^2y + 2xy^2$

9. During the same journey, Stuart drove x miles for 2 hours, and 200 miles for 3 hours. Find x if the average speed for the entire journey is 70 miles per hour.
   A] 166 B] 167 C] 150 D] 140

10. Given the equations of the lines
    (I) 2y + 3x = 3
    (II) -3y - 2x = 5
    (III) -6y + 4x = 9,
    (IV) 2y + 6x = 9

which two lines are perpendicular?

A] (I) and (II) B] (II) and (III) C] (III) and (IV) D] (I) and (III)

11. If $f(x) = (x + 1)^2$, then $f(t + 2)$ =

A] $t^2 + 2t + 4$ B] $t^2 + 4$ C] $t^2 + 6t + 9$ D] $t^2 + 9$

12. For $x > 0$ and $y > 0$,
$(\sqrt{x} + \sqrt{y})(\sqrt{x} - \sqrt{y}) - (\sqrt{x} - \sqrt{y})^2$ =

A] $-2\sqrt{x}\sqrt{y} - 2y$ B] $x - y$ C] 0 D] $2\sqrt{x}\sqrt{y} - 2y$

13. What is the slope of the line whose equation is given by

$x/2 - y/4 = 7$

A] 2 B] ½ C] -1/4 D] -1/2

14. For $x > 3$,
$(x / (x - 3) + 1 / 2)(2/(x - 1))$ =

A] $(x + 1) / ((x - 3)(x - 1))$ B] $3 / (x - 3)$

C] $(x + 3) / (2(x - 1))$ D] $2x / ((x - 3)(x - 1))$

15. In a standard rectangular system of axes, point A has the coordinates (2 , 1). What must be the coordinates of point B if M (3 , 2) is the midpoint of the segment AB?

A] (1 , 1) B] (4 , 3) C] (3 , 4) D] (3 , 2)

16. If $a + b = p$, $ab = q$, then $A^4 + b^4$) is equal to:

A] $p^4 - 4p^2q + q^2$ B] $p^4 - 4p^2q^2 + 2q^2$ C] $p^4 - 2p^2q^2 + q^2$ D] $p^4 - 4p^2q + 2q^2$

17. If $(x + \frac{1}{x})^3 = 27$, then what is the value of $(x^2 + \frac{1}{x^2})$? Given the x is real.

A] 9 B] 25 C] 7 D] 11

18. If $x - \frac{2}{x} = 4$, then what will be the value of $x^2 + \frac{4}{x^2}$?

A] 18 B] 8 C] 12 D] 20

19. If $\sqrt{x} + \frac{1}{\sqrt{x}} = \sqrt{6}$, then the value of $x^6 + \frac{1}{x^6}$ will be:

A] 2712 B] 2502 C] 2270 D] 2702

20. If $x^2 + 1 - 2x = 0$, $x > 0$, then $x^2(x^2 - 2) =$_____.

A] 0 B] -1 C] 1 D] $\sqrt{2}$

21. If $x^2 - 3\sqrt{2}x + 1 = 0$, then what is the value of $x^3 + (\frac{1}{x^3})$?

A] $15\sqrt{6}$ B] $30\sqrt{6}$ C] $45\sqrt{2}$ D] $30\sqrt{2}$

22. If $x - y = 4$ and $xy = 3$, then what is the value of $x^3 - y^3$?

A] 88 B] 100 C] 64 D] 28

23. If $x - \frac{1}{x} = 2\sqrt{2}$, then what will be the value of $x^3 - \frac{1}{x^3}$?

A] $12\sqrt{2}$ B] $10\sqrt{2}$ C] $20\sqrt{2}$ D] $22\sqrt{2}$

24. If $x + 2y = 19$ and $x^3 + 8y^3 = 361$, then xy is equal to:

A] 58 B] 56 C] 55 D] 57

25. If $(x^2 + \frac{1}{49x^2}) = 15\frac{5}{7}$, then what is the value of $(x + \frac{1}{7x})$?

A] 4 B] ± 7 C] ± 4 D] 7

26. If $x + y = 27$ and $x^2 + y^2 = 425$, then the value of $(x - y)^2$ will be:

A] 121 B] 225 C] 169 D] 144

27. If $3x + y = 12$ and $xy = 9$, then the value of $(3x - y)$ is:

A] 6 B] 5 C] 3 D] 4

28. If $a^2 + b^2 + c^2 = 576$ and Ab + bc + cA] = 50, then what is the value of A + b + C], if A+b+C] < 0?

A] -24 B] ± 24 C] ± 26 D] -26

29. If $x + \frac{1}{3x} = 5$, then the value of $27x^3 + \frac{1}{x^3}$ will be:
A] 3024 B] 3420 C] 3042 D] 3240

30. If 3x + 5y = 14 and xy = 6, then what is the value of $9x^2 + 25y^2$?
A] 182 B] 16 C] 14 D] 20

31. If a – b = 7 and $a^2 + b^2 = 169$ where a,b >0 , then the value of 3 a+b is:
A] 41 B] 46 C] 38 D] 44

32. If a + 5b = 25 and ab = 20, then one of the values of A-5 B] is:
A] 16 B] 15 C] 13 D] 14

33. If $\sqrt{x} + \frac{1}{x} = 2\sqrt{3}$, then what will be the value of $x^4 + \frac{1}{x^4}$?
A] 10406 B] 10402 C] 9602 D] 9606

34. If (7x – 10y) = 8 and xy = 5, then what is the value of $49x^2 + 100y^2$?
A] 632 B] 623 C] 746 D] 764

35. If $x^2 + (4 - \sqrt{3})x - 1 = 0$, then what is the value of $x^2 + \frac{1}{x^2}$?
A] $21 - 8\sqrt{3}$ B] $17 - 8\sqrt{3}$ C] $9 - 8\sqrt{3}$ D] $21 - 12\sqrt{3}$

36. If $x^2 + \frac{1}{x^2} = 83$, x > 0, then the value of $x^3 + \frac{1}{x^3}$ is:
A] 675 B] 756 C] 746 D] 576

37. If $x + \frac{1}{x} = \sqrt{13}$, then one of the values of $x^3 - \frac{1}{x^3}$ is:
A] 36 B] 32 C] $4\sqrt{13}$ D] $4\sqrt{11}$

38. The coefficient of $x^3 y$ in $(x - 2y) \times (5x + y)^3$ is:

A] -150 B] 75 C] -175 D] 250

39. If $9x^2 - 6x + 1 = 0$, then the value of $27x^3 + (27x^3)^{-1}$ will be:

A] 1 B] 4 C] 2 D] 8

40. What is the coefficient of y^2 in the expansion of $(\sqrt{2}y^2 - 5\sqrt{3})^3$?

A] $30\sqrt{3}$ B] $-225\sqrt{2}$ C] $-30\sqrt{3}$ D] $225\sqrt{2}$

DATA SUFFICIENCY

1. The question consists of a problem question followed by two statements I and II. Find out if the information given in the statement(s) is sufficient in finding the solution to the problem.

Problem Question:

Is Radha Manju's sister?

Statements:

(I) Rahul has two daughters of which Manju is one.

(II) Radha's mother is married to Rahul.

Options:

A] Statement I alone is sufficient

B] Statement II alone is sufficient

C] both statements put together are sufficient

D] Both the statements even put together are not sufficient

E] either of the statement is sufficient.

2. The question consists of a problem question followed by two statements I and II. Find out if the information given in the statement(s) is sufficient in finding the solution to the problem.

Problem Question:

What is the cost price of a piece of cloth?

Statements:

(I) Selling price is given.

(II) Loss percent is given

Options:

A] Statement I alone is sufficient

B] Statement II alone is sufficient

C] Both statements put together are sufficient

D] Both the statements even put together are not sufficient

E] Either of the statement is sufficient.

3. **Problem Question:**

What is Mohan's rank in the class?

Statements:

(I) There are thirty students in the class.

(II) There are six girls who have scored less than Mohan

Options:

A] Statement 1 alone is sufficient in answering the question

B] Statement 2 alone is sufficient in answering question

C] Both statements put together are sufficient in answering question
D] Both statements even put together are not sufficient in answering the question
E] Either of the statement is sufficient in answering the question

4. **Problem Question:**
How many people cast their votes in the MCD elections in metropolitan city-Delhi?
Statements:
(I) The population of India is 2 billion and population of each metropolitan is 15% of the total.
(II) 33% of the total population of Delhi cast their votes in the MCD elections.
Options:
A] Statement 1 alone is sufficient in answering the question
B] Statement 2 alone is sufficient in answering question
C] Both statements put together are sufficient in answering question
D] Both statements even put together are not sufficient in answering the question
E] Either of the statement is sufficient in answering the question

5. **Direction-** The question consists of a problem question followed by two statements I and II. Find out if the information given in the statements is sufficient in finding the solution to the problem.
Problem Question: What is the amount of cement exported from China?
Statements:
I) China's export to America is 65,000 tones and this is 8% of the total cement exports.
II) China's total export tonnage of cement is 15% of the total of 1 million tonnes.
Options:
A] Statement I alone is sufficient in answering the problem question
B] Statement II alone is sufficient in answering the problem question
C] Both statements put together are sufficient in answering the problem question
D] Both statements even put together are not sufficient in answering the problem question
E] Either of the statement is sufficient in answering the problem question

6. **Direction-** The question consists of a problem question followed by two statements I and II. Find out if the information given in the statements is sufficient in finding the solution to the problem.
Problem Question: A piece of wire 9 meters long is cut into three smaller pieces. How long is the longest of the three pieces?
Statements:

I) Two pieces are of the same length
II) One piece is 4.7 meters long
Options:
A] Statement I alone is sufficient in answering the problem question
B] Statement II alone is sufficient in answering the problem question
C] Both statements put together are sufficient in answering the problem question
D] Both statements even put together are not sufficient in answering the problem question
E] Either of the statement is sufficient in answering the problem question

7. **Direction-** The question consists of a problem question followed by two statements I and II. Find out if the information given in the statements is sufficient in finding the solution to the problem.
Problem Question: Was Manisha's book published?
Statements:
I) If Manisha's Book was published she would receive at least $1000 as royalty during 1978
II) Manisha's income for 1978 was over $1000
Options:
A] Statement I alone is sufficient in answering the problem question
B] Statement II alone is sufficient in answering the problem question
C] Both statements put together are sufficient in answering the problem question
D] Both statements even put together are not sufficient in answering the problem question
E] Either of the statement is sufficient in answering the problem question

8. **Direction-** The question consists of a problem question followed by two statements I and II. Find out if the information given in the statements is sufficient in finding the solution to the problem.
Problem Question: If the product of two numbers are given, find the numbers.
Statements:
I) Difference of the numbers is given
II) Sum of the numbers is given
Options:
A] Statement I alone is sufficient in answering the problem question
B] Statement II alone is sufficient in answering the problem question
C] Both statements put together are sufficient in answering the problem question
D] Both statements even put together are not sufficient in answering the problem question

E] Either of the statement is sufficient in answering the problem question

9. Direction- The question consists of a problem question followed by two statements I and II. Find out if the information given in the statements is sufficient in finding the solution to the problem.
Problem Question: How is Mr. Sharma related to Santosh?
Statements:
I) Santosh's mother has two daughters
II) Santosh's sister is the wife of Mr. Sharma's son
Options:
A] Statement I alone is sufficient in answering the problem question
B] Statement II alone is sufficient in answering the problem question
C] Both statements put together are sufficient in answering the problem question
D] Both statements even put together are not sufficient in answering the problem question
E] Either of the statement is sufficient in answering the problem question

10. The question consists of a problem question followed by two statements I and II. Find out if the information given in the statement(s) is sufficient in finding the solution to the problem.
Problem Question:
Each floor of a three storey building is occupied and a total of 15 people live in the building. How many people live on the second floor?
Statements:
I) the number of people living on the ground floor is an odd number.
II) The number of people living on the first floor is twice the number living on the second floor.
Options:
A] Any one statement alone is sufficient in answering the problem question, but the other statement alone cannot answer the problem question.
B] Either of the statements taken individually is sufficient in answering the problem question.
C] Both the statements put together are sufficient in answering the problem question.
D] Both the statements even put together are not sufficient in answering the problem question.

11. The question consists of a problem question followed by two statements I and II. Find out if the information given in the statements is sufficient solution to the problem.

Problem Question:

X, Y, Z are three distinct integers. Is Y the greatest of three?

Statements:

I. X is less than at least one of the two integers Y and Z.

2. Z is less than at least one of the two integers X and Y.

Options:

A] Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient to answer the question asked.

B] Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient to answer the question asked.

C] BOTH statements (1) and (2) TOGETHER are sufficient to answer the question asked, but NEITHER statement ALONE is sufficient to answer the question asked.

D] EACH statement ALONE is sufficient to answer the question asked.

E] Statements (1) and (2) TOGETHER are NOT sufficient to answer the question asked, and additional data specific to the problem are needed.

12. The question consists of a problem question followed by two statements I and II. Find out if the information given in the statement(s) is sufficient in finding the solution to the problem.

Problem question: What is the monthly salary of Raghu?

Statements:

I) The salaries of Raghu and his brother are in the ratio 5:6 respectively

II) The salary of Raghu's brother is Rs 32,000 per month

Options:

A. Statement I alone is sufficient in answering the problem question

B. Statement II alone is sufficient in answering the problem question

C. Both statements put together are sufficient in answering the problem question

D. Both the statements even put together are not sufficient in answering the problem question

E. Either of the statement is sufficient in answering the problem question

13. The question consists of a problem question followed by two statements I and II. Find out if the information given in the statement(s) is sufficient in finding the solution to the problem.

Problem question: What is the value of A + B + C?
Statements:
I) A + B is twice the value of C and C is a positive square root of 49.
II) A, B and C are equal and their sum is a multiple of 5:
Options:
A. Statement I alone is sufficient in answering the problem question
B. Statement II alone is sufficient in answering the problem question
C. Either of the statements taken individually is sufficient in answering the problem question
D. Both statements put together are sufficient in answering the problem question
E. Both the statements even put together are not sufficient in answering the problem question

14. The question consists of a problem question followed by two statements I and II. Find out if the information given in the statement(s) is sufficient in finding the solution to the problem.
Problem question: The value of p^2-2qr can be found if:
Statements:
I) The value of p+q is given
II) The value of q+r is given
Options:
A. Statement I alone is sufficient in answering the problem question
B. Statement II alone is sufficient in answering the problem question
C. Both statements put together are sufficient in answering the problem question
D. Both the statements even put together are not sufficient in answering the problem question
E. Either of the statement is sufficient in answering the problem question

15. The question consists of a problem question followed by two statements I and II. Find out if the information given in the statement(s) is sufficient in finding the solution to the problem.
Problem question: Who is the son of R?
Statements:
I) P is R´s sister
II) Q is the son of P
Options:
A. Statement I alone is sufficient in answering the problem question
B. Statement II alone is sufficient in answering the problem question
C. Both statements put together are sufficient in answering the problem question

D. Both the statements even put together are not sufficient in answering the problem question
E. Either of the statement is sufficient in answering the problem question

16. The question consists of a problem question followed by two statements I and II. Find out if the information given in the statement(s) is sufficient in finding the solution to the problem.
Problem question: how is sita related to rita?
Statements:
I) gita is the sister of rita.
II) gita is sita´s daughter
Options:
A. Statement I alone is sufficient in answering the problem question
B. Statement II alone is sufficient in answering the problem question
C. Both statements put together are sufficient in answering the problem question
D. Both the statements even put together are not sufficient in answering the problem question
E. Either of the statement is sufficient in answering the problem question

17. The question consists of a problem question followed by two statements I and II. Find out if the information given in the statement(s) is sufficient in finding the solution to the problem.
Problem question: Who is the nephew of X?
Statements:
I) Y is the sister of X
II) Z is the son of Y
Options:
A. Statement I alone is sufficient in answering the problem question
B. Statement II alone is sufficient in answering the problem question
C. Both statements put together are sufficient in answering the problem question
D. Both the statements even put together are not sufficient in answering the problem question
E. Either of the statement is sufficient in answering the problem question

18. The question consists of a problem question followed by two statements I and II. Find out if the information given in the statement(s) is sufficient in finding the solution to the problem.
Problem Question: There are four friends Akash, Manoj, Nitesh and Piyush.

They are standing in increasing order of their heights facing towards North. At what position is Manoj standing?

Statements:

I. Akash is taller than Piyushand Piyush is taller than Manoj. Manoj is not the shortest.

II. Nitesh is smaller than Manoj and Piyush. Nitesh is the shortest and Piyush is the tallest

Options:

A. I alone is sufficient while II alone is not sufficient

B. II alone is sufficient while I alone is not sufficient

C. Either I or II is sufficient

D. Neither I nor II is sufficient

E. Both I and II together are sufficient

19. The question consists of a problem question followed by two statements I and II. Find out if the information given in the statement(s) is sufficient in finding the solution to the problem.

Problem question: How much time would a machine take to put caps on 300 bottles?

Statements:

I. It takes 8 hours to put caps on 300 bottles manually.

II. It takes 2 minutes lesser to put cap on a bottle using machine than putting it manually.

Options:

A) Statement I alone is sufficient in answering the problem.

B) Statement II alone is sufficient in answering the problem.

C) Both statements put together are sufficient in answering the problem.

D) Both the statements even put together are not sufficient in answering the problem.

E) Either of the statement is sufficient in answering the problem.

20. **Problem question:** Is “m” divisible by 6?

Statements:

I) “m” is divisible by 3

II) “m” is divisible by 4

Options:

A. Statement I alone is sufficient

B. Statement II alone is sufficient
C. Both statements put together are sufficient
D. Both the statements even put together are not sufficient
E. Either of the two statements individually is sufficient

21. **Problem question:** What is the area of the given rectangular field?
Statements:
I) The perimeter of the field is given
II) The diagonal of the field is given
Options:
A. Statement I alone is sufficient in answering the problem question
B. Statement II alone is sufficient in answering the problem question
C. Both statements put together are sufficient in answering the problem question
D. Both the statements even put together are not sufficient in answering the problem question
E. Either of the statements is sufficient in answering the problem question.

22. **Problem question:** PQRS are four friends. Who is the youngest among them?
Statements:
I) The total age of P and Q is more than that of R.
II) The total age of P and S together is less than that of R.
Options:
A. Statement I alone is sufficient
B. Statement II alone is sufficient
C. Both statements put together are sufficient
D. Both the statements even put together are not sufficient

23. **Problem question:** If the sum of the squares of two number is given. Find two numbers.
Statements:
I) Average of the numbers is given.
II) Sum of the numbers is given.
Options:
A. Statement I alone is sufficient
B. Statement II alone is sufficient
C. Both statements put together are sufficient
D. Both the statements even put together are not sufficient
E. Either of the statements is sufficient

24. **Problem question:** How many daughters does A have?

Statements:
I) A's wife has four sons: P, Q, R and S.
II) S has one sister.
Options:
A. Statement I alone is sufficient
B. Statement II alone is sufficient
C. Both statements put together are sufficient
D. Both the statements even put together are not sufficient

25. **Problem question:** How old is Rahul?
Statements:
I) Rakesh, Ranjan and Rahul are all of the same age.
II) The sum of age of Rakesh, Rahul and Mohan is 38 years.
Options:
A. Statement I alone is sufficient
B. Statement II alone is sufficient
C. Both statements put together are sufficient
D. Both the statements even put together are not sufficient

26. **Problem question:** Among the four friends P, Q, R and S, who is the shortest?
Statements:
I) R is taller than Q smaller than P.
II) Q is taller than S.
Options:
A. Statement I alone is sufficient
B. Statement II alone is sufficient
C. Both statements put together are sufficient
D. Both the statements even put together are not sufficient

27. **Problem question:** When is Rahul's birthday?
Statements: I) His birthday is before 25th and after 22nd November.
II) His birthday is after 23rd and before 26th November.
Options:
A] Statement I alone is sufficient
B] Statement II alone is sufficient
C] Both statements put together are sufficient
D] Both the statements even put together are not sufficient.

28. **Problem question:** Is B the brother of A?
Statements:
(i) A is the brother of C.
(ii) C is the sister of B.
Options:
A] Statement i alone is sufficient
B] Statement ii is sufficient
C] Both the statements put together are sufficient
D] Both the Statements even put together are not sufficient
E] Either of the statement is sufficient to answer

29. The question consists of a problem question followed by two statements I and II. Find out if the information given in the statement(s) is sufficient in finding the solution to the problem.
Problem question: Find P, Q, and R.
Statements:
I) P, Q, and R, are three consecutive integers.
II) The average of P, Q and R is 34.
Options:
A] Statement I alone is sufficient
B] Statement II alone is sufficient
C] Both statements put together are sufficient
D] Both statements even put together is not sufficient

30. The question consists of a problem question followed by two statements I and II. Find out if the information given in the statement(s) is sufficient in finding the solution to the problem.
Problem question: What is the monthly salary of my father?
Statements:
I) My father's and mother's salaries are in the ratio 5:2 respectively.
II) My mother's salary is 40% of that of my father's salary.
Options:
A] Statement I alone is sufficient
B] Statement II alone is sufficient
C] Both statements put together are sufficient
D] Both statements even put together is not sufficient

31. **Problem question:** What is the 5th number?
Statements:

I) 1st and 2nd numbers are 1 and 2 respectively.
II) 3rd and 4th numbers are 3 and 4 respectively.

Options:

A. Statement I alone is sufficient
B. Statement II alone is sufficient
C. Both statements put together are sufficient
D. Both the statements even put together are not sufficient
E. Either of the two statement individually is sufficient

32. **Problem question:** What is the value of u, if u and v are two distinct numbers and their product is 42?

Statements:

(I) u is less than v
(II) u is an even number

Options:

A. Statement I alone is sufficient in answering the problem question
B. Statement II alone is sufficient in answering the problem question
C. Both statements put together are sufficient in answering the problem question
D. Both the statements even put together are not sufficient in answering the problem question
E. Either of the two statements individually is sufficient in answering the problem question.

33. **Problem question:** On which day was the car purchased by Shruti in 2009?

Statements:

(I) Certainly before 19th October, 2009 but definitely not before 16th October, 2009
(II) Certainly after 17th October, 2009 but not later than 20th October, 2009

Options:

A. Statement I alone is sufficient in answering the problem question
B. Statement II alone is sufficient in answering the problem question
C. Both statements put together are sufficient in answering the problem question
D. Both the statements even put together are not sufficient in answering the problem question
E. Either of the two statements individually is sufficient in answering the problem question

34. **Problem question:** I have four friends. What is my age?

Statements:

I) Average of our ages is 85 years.

II) All of us are of the same age.

Options:

A. Statement I alone is sufficient

B. Statement II alone is sufficient

C. Both statements put together are sufficient

D. Both the statements even put together are not sufficient

E. Either of the statements is sufficient

35. **Problem Questions:** A recipe for mixed nuts includes only whole peanuts and cashews and calls for a strict peanut: cashew ratio of 7:3. How many peanuts are in a bag?

Statements:

I. The packaging facility guarantees that each bag will contain no fewer than 95 and no more than 105 nuts.

II. There are 30 cashews in the bag.

Options:

A. Statement I alone is sufficient to answer the problem question.

B. Statement II alone is sufficient to answer the problem question.

C. Both statements put together are sufficient to answer the problem question.

D. Both the statements even put together are not sufficient to answer the problem question.

E. Either of the statements is sufficient to answer the problem question.

36. **Problem question:** Is 200 the average (arithmetic mean) score in the CAT exams?

Statements:

I) Half of the people who give the CAT exam, score above 200 and half of the people score below 200.

II) The highest CAT score is 400 and the lowest score is 100

Options:

A. Statement I alone is sufficient

B. Statement II alone is sufficient

C. Both statements put together are sufficient

D. Both the statements even put together are not sufficient

E. Either of the two statements individually is sufficient

Directions (37-38): The question consists of a problem question followed by two statements I and II. Find out if the information given in the statement(s) is sufficient in finding the solution to the problem.

37. **Problem question:**
Is $p < q$?
Statements:
I. $p/5 < q/5$
II. $-p + y > -q + y$
Options:
A. Statement I alone is sufficient in answering the Problem Question
B. Statement II alone is sufficient in answering the Problem Question
C. Either of the statements taken individually are sufficient in answering the problem question
D. Both the statements put together are sufficient in answering the problem question
E. Both the statements even put together are not sufficient in answering the problem question

38. **Problem Question:**
Harish takes a flight from Mumbai at 7:00 a.m. IST on 14th February 2009, to Calvinia in South Africa. What is the local time at Calvinia?
Statements:
I) The total journey time from Mumbai to Calvinia is 9 hours.
II) The distance between Mumbai and Calvinia is 7000 km.

Options:
A] Any one statement alone is sufficient in answering the problem question, but the other statement alone cannot answer the problem question
B] Either of the statements taken individually are sufficient in answering the problem question
C] Both statements put together are sufficient in answering the problem question
D] Both the statements even put together are not sufficient in answering the problem question

Direction (39-40): The question consists of a problem question followed by two statements I and II. Find out if the information given in the statement(s) is sufficient in finding the solution to the problem.

39. **Problem question:** What is the area of the top of the table?

Statements:

I) the top of the table is rectangular in shape

II) The length of the top of the table is 35 cm

Options:

A. Statement I alone is sufficient in answering the problem question

B. Statement II alone is sufficient in answering the problem question

C. Both statements put together are sufficient in answering the problem question

D. Both the statements even put together are not sufficient in answering the problem question

E. Either of the statement is sufficient in answering the problem question

40. **Problem question:** How is John related to Mary?

Statements:

(I) Paula, the wife of John's only brother Tom, does not have any siblings

(II) Mary is the daughter of Paula's brother-in-law

Options:

A. Statement I alone is sufficient in answering the problem question

B. Statement II alone is sufficient in answering the problem question

C. Both statements put together are sufficient in answering the problem question

D. Both the statements even put together are not sufficient in answering the problem question

E. Either of the statement is sufficient in answering the problem question

SYLLOGISM

Direction (1-7): In each question below are Statements followed by conclusion. You have to take the given Statements to be true even if they seem to be at variance with commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the given Statements disregarding commonly known facts.

1. **Statements:** Some red are blue. All white are blue.
   All yellow are red. Some white are orange.
   Conclusions: I. Some white are yellow. II. Some orange are definitely red.
   III. At least some blue are orange.
   A] If both conclusions I and III follow B] If only conclusion III follows
   C] If both conclusions I and II follow D] If all conclusions follows

2. **Statements:** No tea is milk. Not a single drop of milk is coffee.
   Every coffee is water.
   Conclusions: I. Some water which are coffee are tea as well.
   II. No tea is coffee.
   III. Some water are not milk.
   A] Only conclusion III follows. B] Either conclusion I or II follows.
   C] Only conclusion II and III follows. D] All follow

3. **Statements:** Some bag is Hot. No Hot is cake.
   All cakes are Milk.
   Conclusions: I. Some bag is not cakes. II. Some Hots can be Milk.
   III. Some Milk is not Hot.
   A] If only conclusion II follows B] If both conclusions II and III follow
   C] If both conclusions I and III follow D] If all conclusions follows

4. **Statements:** Some physics is English. No English is maths.
   All maths are economics.
   Conclusions: I. Some physics is not maths. II. Some English can be economics.
   III. Some economics is not English.

A] If only conclusion II follows follow
B] If both conclusions II and III

C] If both conclusions I and III follow
D] If all conclusions follows

5. **Statements:** Some mobile is Laptop. No Laptop is phone.
All phones are LCD.
Conclusions: I. Some mobile is not phone. II. Some Laptop can be LCD.
III. Some LCD is not Laptop.

A] If only conclusion II follows follow
B] If both conclusions II and III

C] If both conclusions I and III follow
D] If all conclusions follows

6. **Statements:** Some cycles are car. All scooters are car.
All bikes are cycle. Some scooters are jeep.
Conclusions: I. some scooters are bike. II. Some jeeps are definitely cycle.
III. At least some cars are jeep.

A] If both conclusions I and III follow
B] If only conclusion III follows

C] If both conclusions I and II follow follow
D] If both conclusions II and III

7. **Statements:** No purple is drink. Not a single drop of drink is yellow.
Every yellow is white.
Conclusions: I. Some white which are yellow are purple as well.
II. No purple is yellow.
III. Some white are not drink.

A] Only conclusion III follows.
B] Either conclusion I or II follows.

C] Only conclusion II and III follows.
D] All follow

Directions (8-11): In each of the questions below, Some Statements are given followed by some conclusions. You have to consider the Statements to be true even if they seem to be at variance with commonly known facts. You have to decide which of the following conclusions logically follows from the given statements. Give Answer.

Statements: All rivers are water. Some water is pond
No pond is tree. All trees are jungle.
Conclusion: I. Some rivers are pond. II. Some water is not tree.
III. All rivers being jungle is a possibility.
A] Only I. B] Only III. C] II and III. D] I and II.

8. **Statements:** Some triangles are square. All squares are cube.
No cube is circle. Some circles are rectangle.
Conclusion: I. All triangles being circle is a possibility.
II. No square is circle.
III. Some triangle is cube.
A] Only II. B] Only III. C] I and III. D] II and III.

10. **Statements:** No black is orange. All yellow is orange.
Some yellow is green. All green is pink.
Conclusion: I. Some orange are pink.
II. All orange being yellow is a possibility.
III. Some green is not black.
A] Only I. B] Only III. C] I and III. D] All follow.

11. **Statements:** Some cats are white. Some white are dog.
All dogs are blue. No dog is monkey.
All monkeys are tall.
Conclusion: I. Some tall is not dog. II. Some cat is dog.
III. All blue being monkeys is a possibility.
A] Only I. B] I and III. C] II and III. D] Only II.

12. **Statements**: All A are B Some B are C
Conclusions: I. Some C are A] II. All A being C is a possibility.
A] Only conclusion I follows B] Only conclusion II follows
C] Either conclusion I or II follows D] neither conclusion I nor II follows

Direction (13-22): In each question below are Statements followed by conclusion. You have to take the given Statements to be true even if they seem to be at variance with commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the given Statements disregarding commonly known facts.

13. **Statements:** No Red is Yellow. All Yellow are Blue.
All Pink are White. Some Blue are Pink.
Conclusions: I. No Pink is Red.
II. Some Yellow are not White.
III. Some Pink which are Blue are also Yellow is possibility
IV. No White is Blue is a possibility.
A] Only I follow B] Only II and IV follow C] Only III follow D] Only III and IV follow

14. **Statements:** All Samsung are Apple. No Samsung is Redmi.
No Apple is Lenovo. All Lenovo are Oppo.
Conclusions: I. Some Samsung are Oppo is a possibility.
II. All Redmi are Lenovo is a possibility.
III. No Apple is Oppo.
IV. Some Lenovo are Redmi is a possibility.
A] All follow B] Only II, III and IV follow
C] Only I, III and IV follow D] Only I, II and IV follow

15. **Statements:** All Ants are Fly. All Fly are Bird.
Some Fly are Insect. No Insect is Mosquito.
Conclusions: I. Some Insects are Ant is a possibility.
II. Some Bird are Mosquito is a possibility.
III. Some Insects are not Fly is a possibility.
IV. All Mosquito are Ant is possibility.
A] All follow B] Only I, II and III follow
C] Only II, III and IV follow D] Only I, III and IV follow

16. **Statements:** All Even are Odd All Composite are Prime.
No Odd is Prime. Some Odd are Whole.
Conclusions: I. All even are not Composite.
II. No Prime is Even.
III. Some Whole are Composite.
IV. All Odd are not Prime.
A] Only I, II and III follow B] Only I, II and IV follow
C] All follow D] Only I and IV follow

17. **Statements:** All Green are Red All Green are Blue.
No Green is White. Some White are Black.
Conclusions: I. All Red are White is a possibility.
II. Some Green are not Black.
III. All Blue are White.
IV. Some Black are Red is a possibility.
A] Only I and II follow B] Only I and III follow
C] Only II and IV follow D] Only IV follow

18. **Statements:** All Honda are Hero. Some Suzuki are Honda
All Suzuki are Maruti. No Hero is BMW.
Conclusions:
I. Some Honda which are both Suzuki and Maruti are also BMW is a possibility.
II. Some Maruti which are not Hero are also BMW is a possibility.
III. Some Honda are not Suzuki is a possibility.
IV. No Honda is BMW is a possibility.
A] Only I and II follow B] Only II and IV follow
C] Only II, III and IV follow D] None of these

19. **Statements:** All Trees are Branch. All Leaf are Stem.
No Stem is Root. No Tree is Leaf.
Conclusions: I. Some Stems are not Branch. II. No Root is Tree
III. No Leaf is Branch. IV. All stems are not Root
A] Only I follow B] Only II follow C] Only III follow D] Only IV follow

20. **Statements:** Some Ctrl are Alt. All Alt are Shift.
All Ctrl are Toggle. No Shift is Capslock.
All Capslocks are Tab All Shifts are Toggle.
Conclusions: I. All Capslocks are Ctrl is a possibility.
II. No Tab is Toggle
III. All Alt are not Ctrl is a possibility.
IV. Some Toggles are not Capslock.
A] All follow B] None follow C] Only I and III follow D] None of these

21. **Statements:** Some City are Continent. No City is Village.
All Village are Clean. No Continent is Country.
Some State are Country.
Conclusions: I. All Clean are State is a possibility.
II. Some City are not Country.

III. All Continent are not State.
IV. No Village is Country is a possibility.

A] All follow
B] Only I and II follow
C] Only I, II and IV follow
D] Only I, II and III follow

22. **Statements:** All Doves are Pigeon. All Birds are Peacock.
Some Birds are Parrot. No Peacock is Lizard
No Pigeon is Parrot.
Conclusions: I. No Bird is Lizard
II. Some Pigeon are both Peacock and Parrot is a possibility.
III. Some Parrots which are Bird are also Peacock is a possibility.
IV. All Doves are not Parrot.

A] Only I and II follow
B] Only I and IV follow
C] Only I and III follow
D] Only I, III and IV follow

Directions (23-27): In each of the questions below are given some conclusions followed and some Statements are given. You have to take the given conclusions to be true even if they seem to be at variance from commonly known facts and then decide from which of the Statements given definitely true.

23. **Conclusions:** Some digits are not papers. All words are books.
Statements:
I. All digits are books. Some books are papers. No paper is a word.
II. All books are papers. Some papers are words. No word is a digit.
III. All words are digits. All digits are books. No word is a paper.
IV. Some digits are words. All words are books. Some books are papers.
V. None of these

A] Statement I follow
B] Statement II follows
C] Statement III follows
D] Statement IV follows

24. **Conclusions:** No coat is a shirt. Some calls are texts.
Statements: I. All calls are texts. All shirts are texts. No text is a coat.
II. All shirts are coats. Some coats are calls. No call is a text.
III. No coat is a call. Some calls are shirts. All shirts are texts.
IV. All shirts are calls. All calls are coats. No coat is a text.
V. None of these

A] Statement I follow
B] Statement II follows
C] Statement III follows
D] Statement IV follows

25.

26. **Conclusions:** All doors can never be chairs. No shoe is a chair.
Statements: I. All doors are shoes. Some shoes are chairs. All chairs are pencils.
II. No chair is a shoe. All shoes are doors. Some doors are pencils.
III. All doors are chairs. No chair is shoe. All shoes are pencils.
IV. All shoes are chairs. All chairs are doors. No door is a pencil.
V. None of these

A] Statement I follow B] Statement II follows
C] Statement III follows D] Statement IV follows

27. **Conclusions:** No bike is a car. Some cars are not trains.
Statements: I. All cars are bikes. No bike is a train. All trains are trucks.
II. No car is a truck. All trucks are bikes. Some bikes are trains.
III. All trucks are cars. No car is a bike. No truck is a train.
IV. All bikes are trains. Some trains are cars. No car is a truck.
V. None of these

A] Statement I follow B] Statement II follows
C] Statement III follows D] Statement IV follows

28. **Statements:** Some doors are window. No window is a house
Conclusions: I. All house being door is a possibility.
II. At least some house is a window.

A] Only conclusion I follows B] Only conclusion II follows
C] Either conclusion I or II follows D] Neither conclusion I nor II follows

Directions (28-32): Study the given information carefully and Answer the given questions.

29. **Statements:** All books are Notes. All Notes are schools.
Some schools are colleges. All colleges are institutes.
Conclusions: I. All institutes are bags.
II. At least some schools are institutes.
III. All Notes are not books.
IV. All books being schools is a possibility.

A] Only I and III follow B] Only III and IV follow
C] Only II and IV follow D] Only II follows

30. **Statements:** All elephants are rat. No rat is a dog All dogs are lions
Conclusions: I. No lion is elephant. II. All rats being lions is a possibility.
III. All elephants being lions is a possibility
A] Only conclusion I and III follows B] Only conclusion II follows
C] Only conclusion II and III follows D] Neither conclusion I nor II follows
E] All follow

31. **Statement:** All Cat are Dog. Some Mat are Dog.
All Rat are Cat.
Conclusions: I. At least some Dog are Rat. II. All Rat being Mat is a possibility.
III. At least some Cat are Mat.
A] Only All follow B] Only I and II follow
C] Only II and III follow D] Only I and III follow

32. **Statement:** All Parrot are Peacock. No Tiger is Peacock.
All Penguin are Parrot
Conclusions: I. No Peacock is a Tiger. II. All Penguin are Peacock.
III. All Peacock are not definitely Tiger.
A] I follow B] II follow C] all follow D] I and III follow

33. **Statement:** All Always are perfect. Some perfect are smart.
No smart is a Possible.
Conclusions: I. All Always being smart is a possibility.
II. No Possible is a perfect.
III. All Possible being Always is a possibility.
A] Only I follow B] Only II and III follow C] Only I and III follow D] Only III follow

Directions (33-40): In the questions below are given some conclusions followed by five set of statements. You have to choose the correct set of Statements that logically satisfies given conclusions. Assume the given Statements to be true even if they seem to be at variance from commonly known facts.

34. **Conclusion:** Some door being windows is a possibility.
Some carpets are not keys.
All windows being carpets is a possibility.

Statements:

I. All windows are carpets; No carpet is door; all door is keys.

II. No key is a carpet; all door is keys; all windows are carpets.

III. All carpets are keys; all keys are door; No window is door.

IV. No door is a key; some windows are keys; all doors are carpet.

V. Some windows are keys. some keys is door. All door is carpets.

A] Only statement II. B] Only statement III. C] Only statement V. D] Only statement IV.

35. **Conclusions:** Some note is coin is a possibility. Some plastic is not coin.

Statements:

I. All note is plastic Some plastic is metal. All metal is currency. No metal is coin.

II. All note is plastic Some metal is note. All metal is currency. No plastic is coin.

III. Some note is metal. All plastic is metal. No metal is currency. Some coin is currency.

VI. All plastic is note. All note is metal. Some coin is currency. No coin is metal.

V. None is correct

A] Only statement V. B] Only statement III. C] Only statement I. D] Only statement IV.

36. **Conclusion** – Some Cow are Dog. Some Horse are not Cow.

Statement

I .No Tiger is Duck. All Duck is cow. Some dog is tiger. Some duck are horse.

II .No duck is tiger. All dog is cow. Some dog is tiger. Some duck are horse.

III .All cow is dog. Some dog is duck. Some tiger are horse. Some duck is tiger.

IV. All cow is dog. Some dog is tiger. No cow is duck. Some duck are horse.

V. Some dog is cow. No dog is duck. Some duck is tiger. Some duck are horse.

A] Only Statement I B] Only Statement IIC] Only Statement III D] Only Statement IV

37. **Conclusion:** Some trees are not city. Some forests are branch.

Statements:

I. All trees are forest. No forest is city. Some city is branch.

II. All forests are trees. All trees are branch. No branch is city.

III. Some trees are forest. All forests are branch. Some branch is city.

VI. Some forests are branch. Some branch is trees. Some city is branch.

V. None of these.

A] Only statement II. B] Only statement III. C] Only statement I. D] Only statement IV.

38. **Conclusions:** Some apples are banana At least some orange are grapes.
All orange being apple is a possibility.
Statements:
I. Some grapes are orange. Some orange are banana Some bananas are apple. All orange are guava.
II. Some grapes are banana. Some bananas are orange. Some orange are apple. No grape is guava.
III. All grapes are orange. Some orange are guava All apples are guava No banana is guava
IV. All grapes are orange. All orange are banana. No banana is apple. Some guavas are banana
V. Some grapes are orange. Some orange are banana. No guava is apple. All bananas are guavas.
A] Only statement II. B] Only statement III. C] Only statement I. D] Only statement IV.

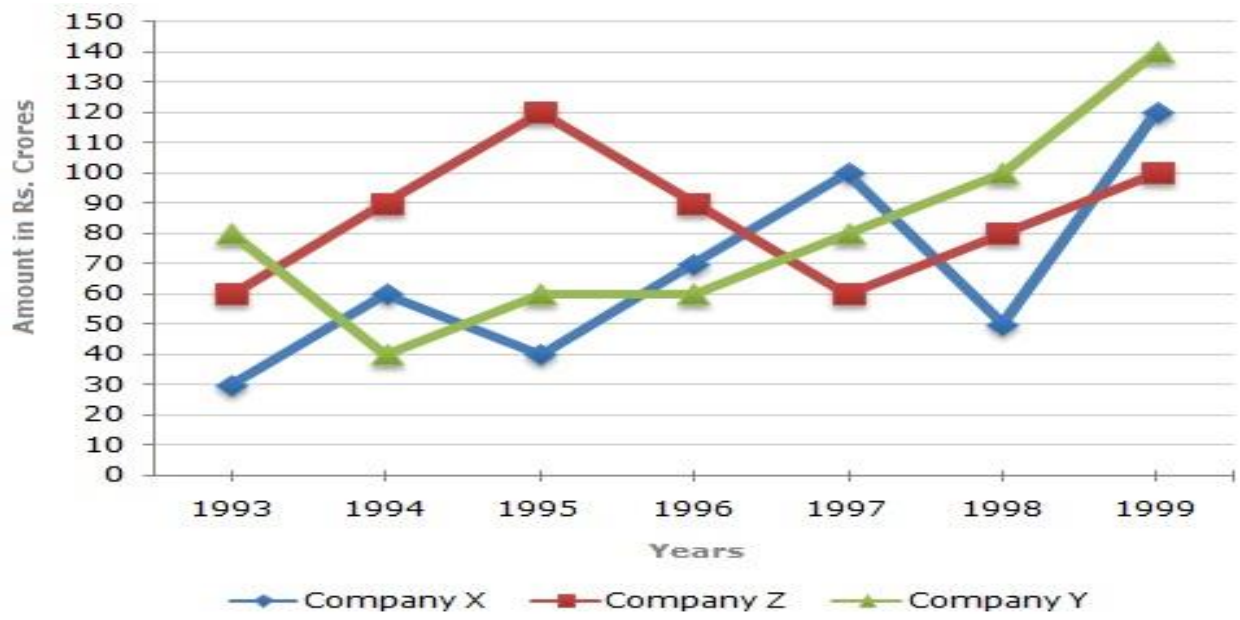
39. **Conclusion**– No plants can be flowers. Some rose are Jasmine.
Statement
I. Some plants is rose. No rose is trees. Some trees is Jasmine. Some plants are flowers.
II. Some plants is rose. Some roses are Jasmine. All Jasmine are trees. Some flowers are rose.
III. All trees is Jasmine. No Jasmine is flower. Some plants are flowers. Some plants is rose.
IV. All flowers is Jasmine. Some plants are Jasmine. All plants is trees. No rose is trees.
V. No flower is plants. Some plants are trees. Some trees is Jasmine. Some rose are jasmine.
A] Only statement IV. B] Only statement III. C] Only statement I D] Only statement V.

40. **Conclusion:** Some bangles are watches. All watches are rings.
Statements:
I. All bangles are watches. All watches are necklace. All necklace are rings.
II. All bangles are watches. Some rings are bangles. Some watches are necklace.
III. All watches are necklace. All necklace are rings. Some bangles are rings.
VI. Some bangles are watches. No ring is necklace. All watches are necklace.
V. None of these
A] Only statement II. B] Only statement III. C] Only statement I. D] Only statement IV.

LINE GRAPH

Direction (1 – 5): Study the following line graph and answer the questions

Exports from Three Companies over the Years (in Rs. Crore)



1. For which of the following pairs of years the total exports from the three Companies together are equal?

A] 1995 and 1998 B] 1996 and 1998 C] 1997 and 1998 D] 1995 and 1996

2. Average annual exports during the given period for Company Y is approximately what percent of the average annual exports for Company Z?

A] 87.12% B] 89.64% C] 91.21% D] 93.33%

3. In which year was the difference between the exports from Companies X and Y the minimum?

A] 1994 B] 1995 C] 1996 D] 1999

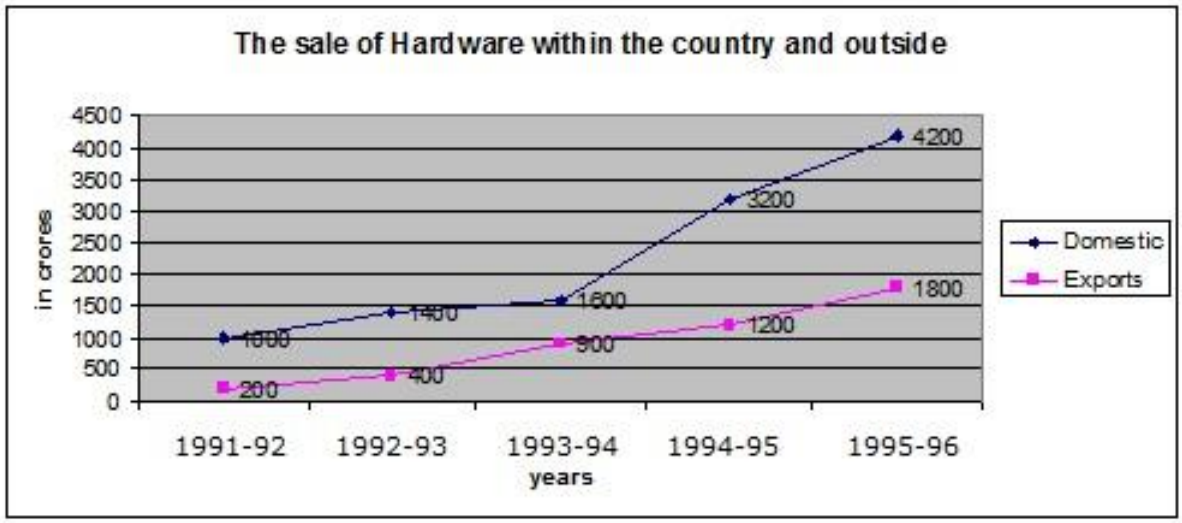
4. What was the difference between the average exports of the three Companies in 1993 and the average exports in 1998?

A] Rs.15.33 crores B] Rs.18.67 crores C] Rs.20 crores D] Rs.22.17 crores

5. In how many of the given years, were the exports from Company Z more than the average annual exports over the given years?

A] 2 B] 3 C] 4 D] 5

Direction (6 – 10): The following line chart shows the sale of hardware by the Indian computer Industry between the years 1991-96, within the country and outside in crores of rupees. Study the data given in the chart and answer the questions that follow:



6. What was the difference on sale of hardware between domestic and exports in 1993- 94?

A] Rs.1000 Crores B] Rs.500 Crores C] Rs.1200 Crores D] Rs.700 Crores

7. In which of the following years was the percentage increase in sale of hardware in domestic sector maximum over the preceding years?

A] 1992-93 B] 1993-94 C] 1994-95 D] 1995-96

8. What was the difference between the total hardware sale in exports sector in 1992-93 and 1993-94 together and that of domestic sector in 1993-94?

A] Rs.300 crores B] Rs.200 crores C] Rs.400 crores D] Rs.150 crores

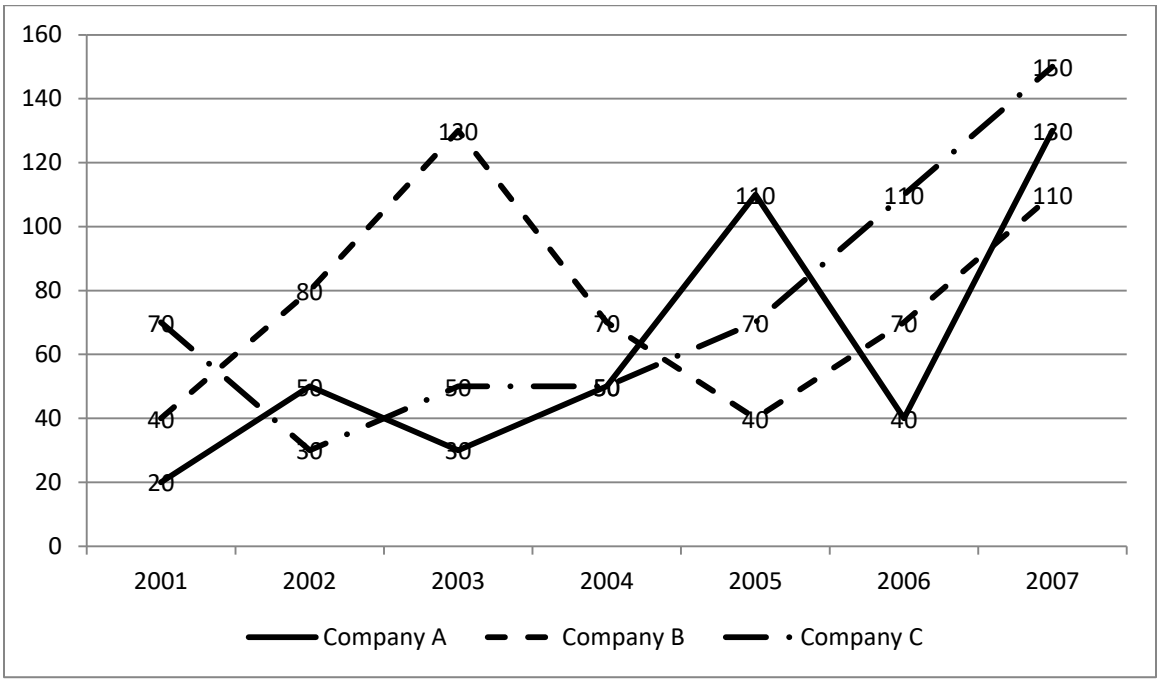
9. Approximately what was the percentage increase in sale in domestic sector from 1994-95 to 1995-96?

A] 35 B] 25 C] 40 D] 20

10. What was the difference in the average sale between the domestic and export sectors?

A] Rs.900 crores B] Rs.1380 crores C] 1560 crores D]Rs.600 crores

Direction (11 – 13): The line graph below shows the export of three different companies from the year 2001 to 2007. Study the graph carefully and answer the questions accordingly.



11. Among the following pairs of years, find out which year the total exports of all the three companies was equal?

A] 2005 and 2006 B] 2006 and 2007

C] 2001 and 2002 D] 2004 and 2007

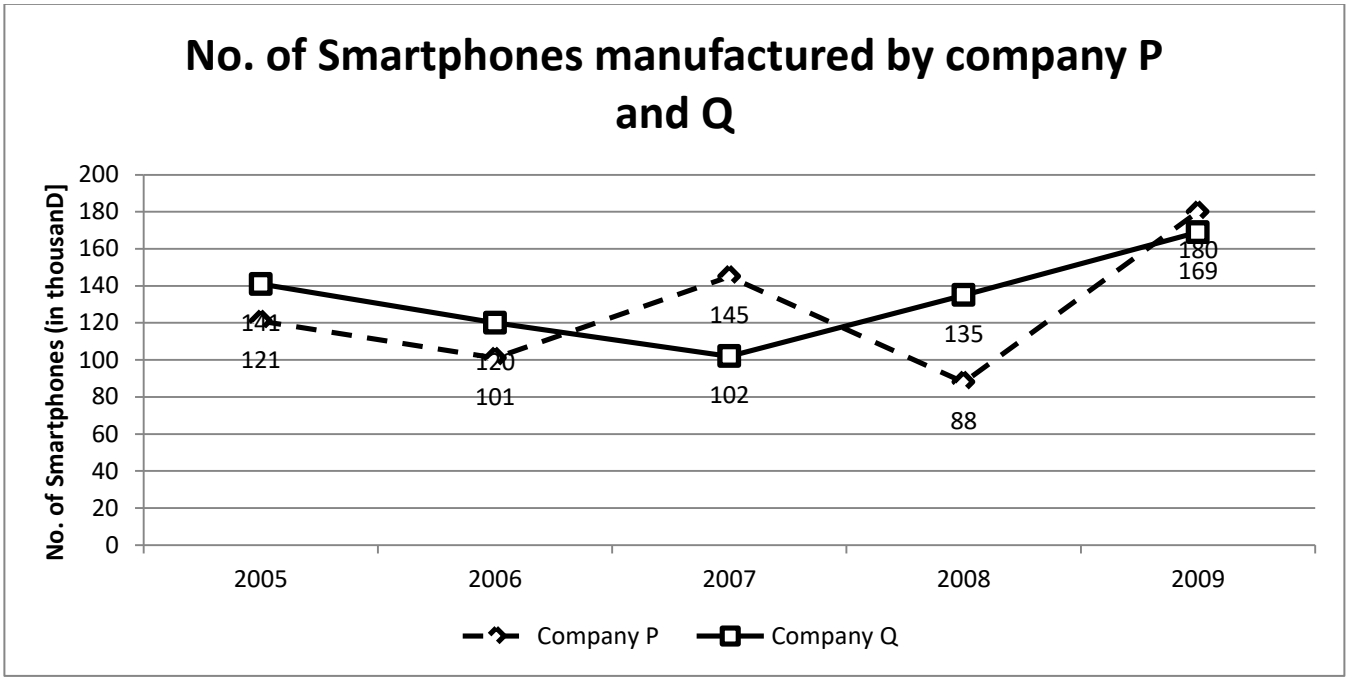
12. Among the following years given below, in which year the difference between the export from company A and company B was the minimum?

A] 2003 B] 2005 C] 2006 D] 2007

13. Find the difference between 2007 and 2006's average export of the three companies.

A] $\frac{9}{2}$ B] $\frac{8}{3}$ C] $\frac{10}{3}$ D] $\frac{11}{2}$

Direction (14 – 17): The line chart below shows the number of smartphones manufactured by company P and Q from the year 2005 to 2009. Study the graph carefully and answer the question accordingly.



14. Identify the difference between the smartphones produced by company Q in 2008 and 2009?

A] 31000 B] 32500 C] 34000 D] 36500

15. Find the difference between the smartphones produced by two companies from 2005 to 2009.

A] 32500 B] 34000 C] 31500 D] 39500

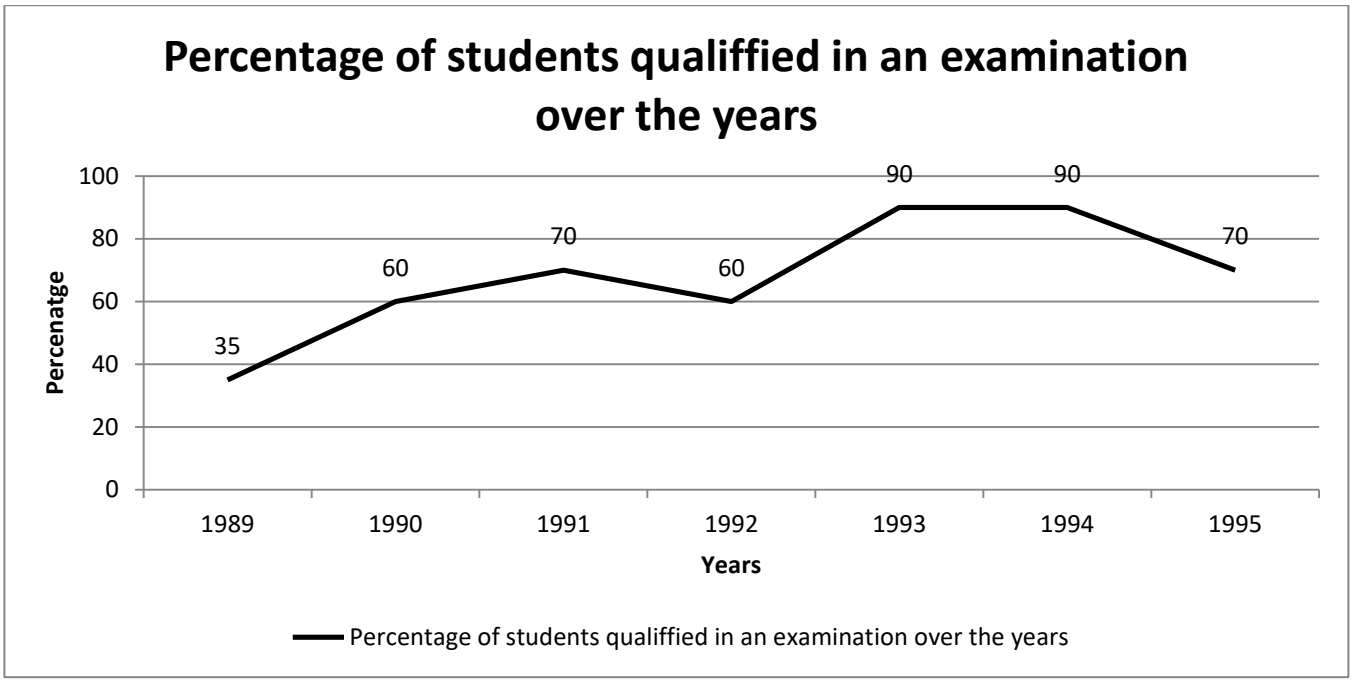
16. Find the approximate number of smartphones produced by company P?

A] 105900 B] 105833 C 106989 D] 100000

17. The making of smartphones by company Q in 2008 was about what percent in comparison to the making of smartphones by company P?

A] 152% B] 155% C] 153% D] 161%

Direction (18 – 20): The below line graph provides the percentage of the students who qualified an examination out of the total number of candidates who appeared for the examination over a period of seven years from 1994 to 2000. Study the graph carefully and answer the questions accordingly.



18. In which year the difference between the number of students qualified was maximum?

A] 1992-1993 B] 1994-1995 C] 1989-1990 D] 1991-1992

19. If the total students qualified in 1989 was 5600, then find out how many students applied for the exam in 1989?

A] 15020 B] 16000 C] 17100 D] Data Inadequate

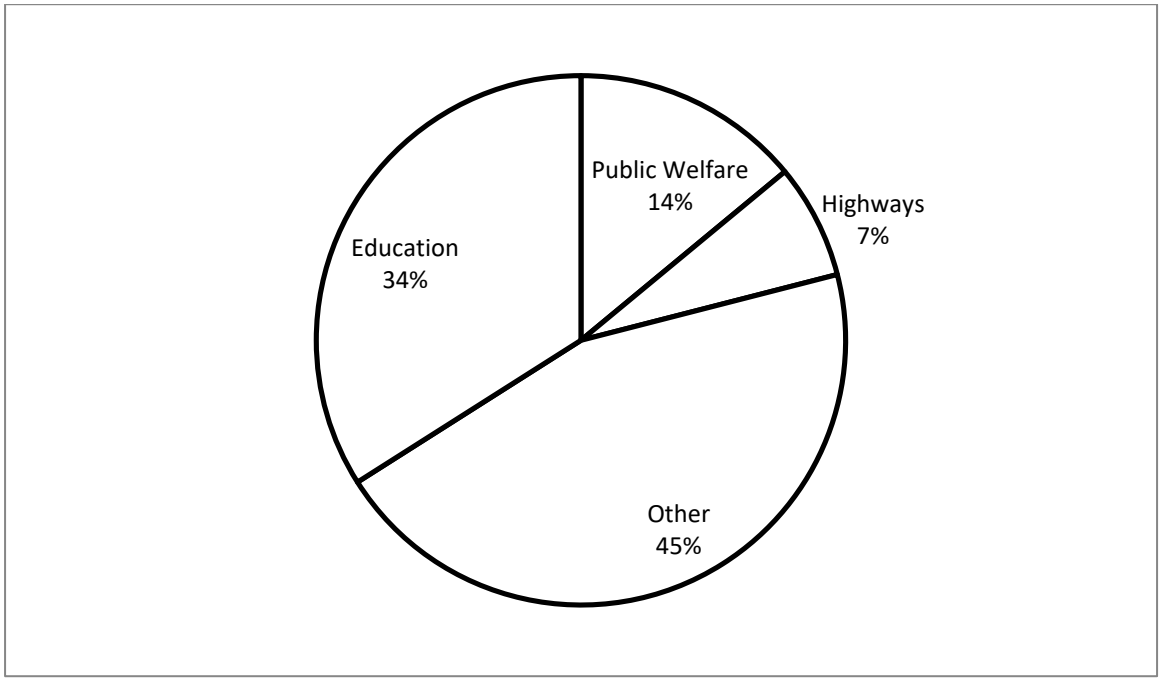
20. If the total students appeared in 1992 and 1993 were 42000, then find the total number of candidates qualified in these two years.

A] 19000 B] 21000 C] 32154 D] Data Inadequate

PIE CHART

Directions (21 – 25): Based on the circle graph given below, answer the following questions.

Expenditure for State and Local Governments



21. What type of information is being presented on this graph?

A] Expenditure for education B] Expenditure for public welfare

C] Expenditure for state and local governments D] Expenditure for highways

22. If the total spending is $50,000, how much money was spent on highways?

A] $3,500 B] $22,500 C] $ 15,000 D] $ 20,000

23. Approximately how many times the amount spending on highways is spent on education?

A] 10 B] 3 C] 5 D] 15

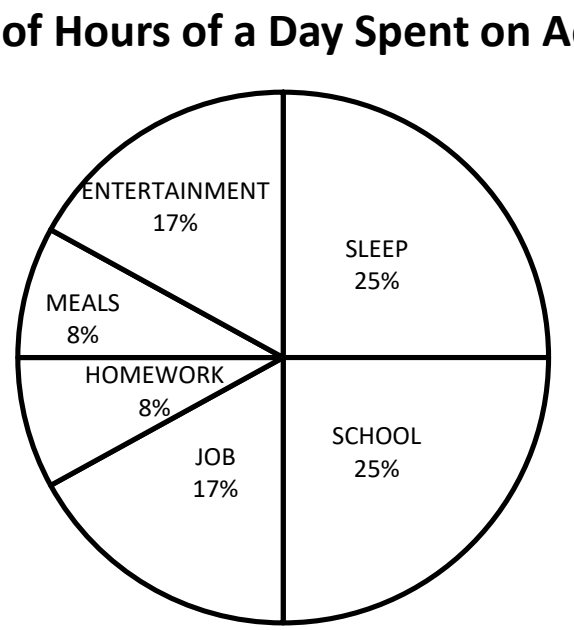
24. Approximately what fraction of the total expenditures are spent on highways and public welfare combined?

A] 2/5 B] 1/5 C] 1/2 D] 2/3

25. How much money was spent as other expenses?

A] 22,500 B] 15,000 C] 30,000 D] 20,000

Directions (26 – 30): Study the graph given below and answer the following questions



26. Which two activities took up half of the time of the day?

A] Entertainment and school B] Meals and school.

C] Sleep and school D] Homework and sleep

27. These two activities took up the least amount of time?

A] Sleep and school B] Meals and homework

C] Sleep and job D] School and Entertainment

28. Which of these took up one fourth of the day?

A] Entertainment B] Sleep C] Homework D] Meals

29. What percent of the day does homework take up?

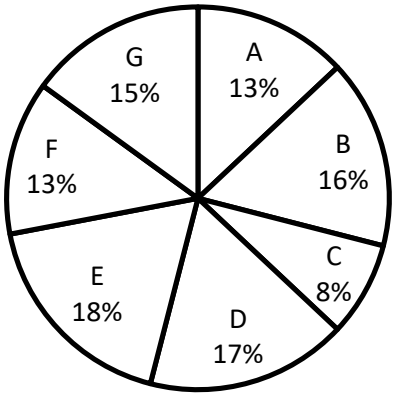
A] 2 B] 15 C] 8 D] 25

30. Which of these takes up the same amount of time as meals and entertainment together?

A] Job B] School C] Homework D] Entertainment

Directions (31 –35): Study the graph given below and answer the following questions

Distribution of Poluation in villages in 1995



Villages	% population below poverty line
A	45
B	52
C	38
D	58
E	46
F	49
G	51

31. In 1996, the population of villages A as well as B is increased by 10% from the year 1995. If the population of village A in 1995 was 5000 and the percentage of population below poverty line in 1996 remains same as in 1995, find approximately the population of village B below poverty line in 1996.

A] 4000 B] 4500 C] 2500 D] 3500

32. If in 1997 the population of village D is increased by 10% and the population of village G is reduced by 5% from 1995 and the population of village G in 1995 was 9000, what is the total population of villages D and G in 1997?

A] 19770 B] 19200 C] 18770 D] 19870

33. If in 1995 the total population of the seven villages together was 55,000 approximately, what will be population of village F in that year below poverty line?

A] 3000 B] 2500 C] 4000 D] 3500

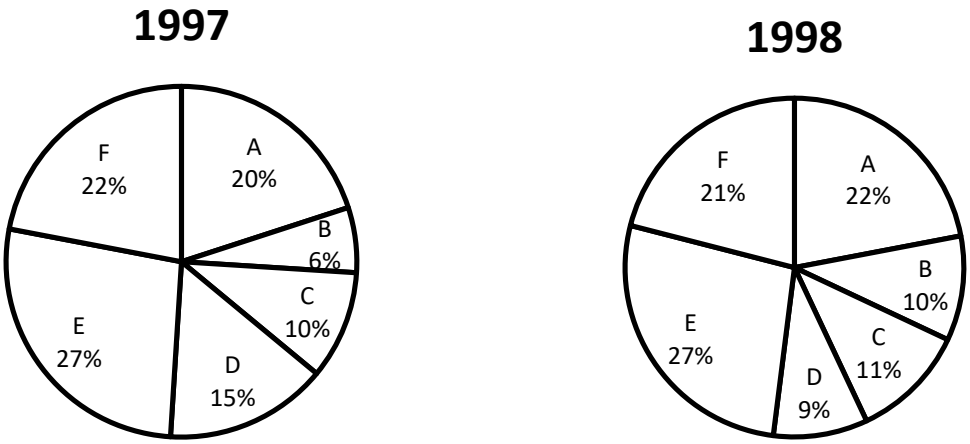
34. If the population of village C below poverty line in 1995 was 1520, what was the population of village F in 1995?

A] 4000 B] 6000 C] 6500 D] 4800

35. The population of village C is 2000 in 1995. What will be the ratio of population of village C below poverty line to that of the Village E below poverty line in that year?

A] 207:76 B] 76:207 C] 152:207 D] Data inadequate

Directions (36 – 40): Study the graph given below and answer the following questions



36. The number of A type employees in 1998 was approximately what percentage of A type employees in 1997?

A] 115 B] 140 C] 125 D] 130

37. If there were 5,000 D type employees in 1998, what would have been its approximate percentage in the company?

A] 10 B] 12 C] 14 D] 16

38. In the case of which of the following type of employees was there maximum change in the number from 1997 to 1998?

A] B B] D C] C D] A

39. Approximately, what was the difference in the number of B type employees between 1997 and 1998?

A] 2285 B] 2325 C] 2085 D] 2620

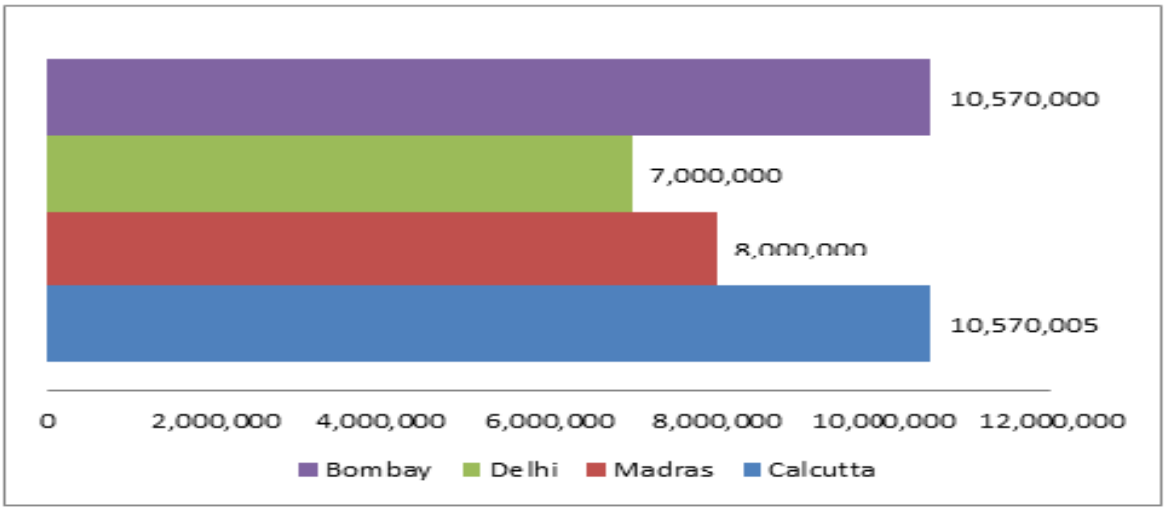
40. The total number of which of the following pairs of types of employees in 1997 was approximately equal to A type employees in 1998?

A] B and C B] A and C C] D and E D] C and D

BAR GRAPH

Directions (1 – 2): These Questions are based on the following table.

POPULATION OF FOUR METRO CITIES AT THE BEGINNING OF THE YEAR 1990



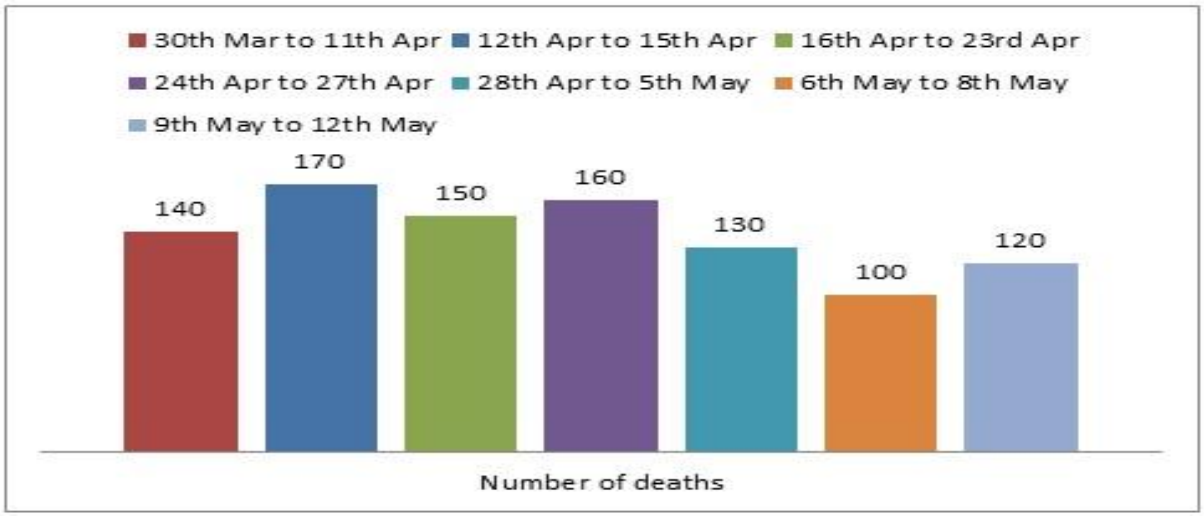
1. If Bombay were to become the most populous city at the end of the year, what is the least number of people who must shift to Bombay during the year, given that, every year 1% of its population shifts to other cities (Assume that the population of other metro does not change)?

   A] 6 B] 1,04,64,301 C] 1,05,706 D] 1,05,705

2. If the most populous city has 40% female population, and the least has 35% female population, then the difference between male populations of these two cities is closest to

   A] 60 lakh B] 57 lakh C] 17.9 lakh D] 56 lakh

Directions (3 – 4): These questions are based on the graph given below, which shows the number of deaths due to fire accidents in the summer of 1992.



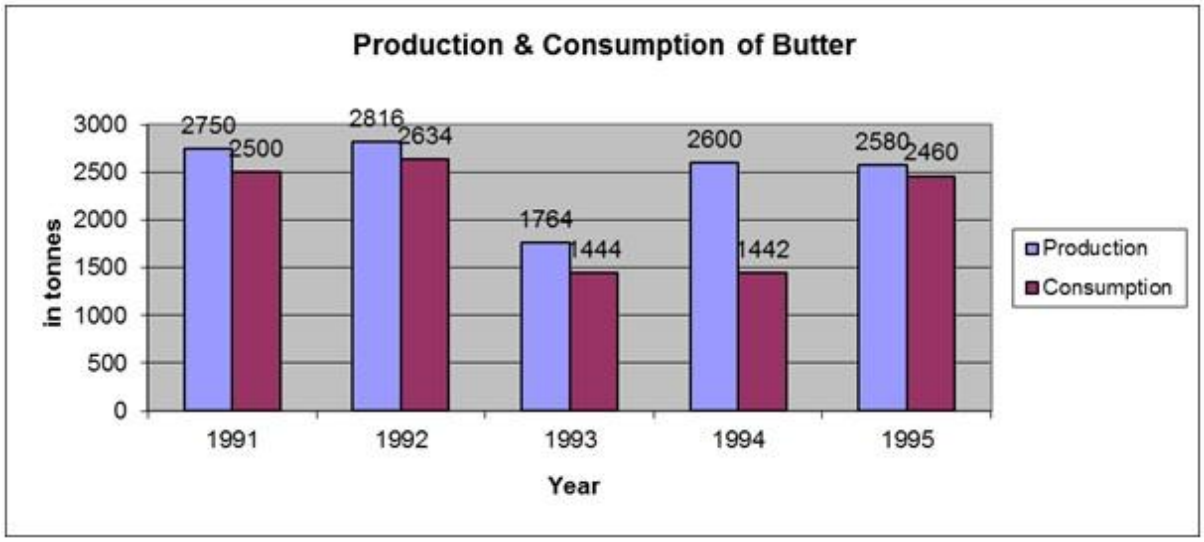
3. The average number of deaths per day during the given period is

A] 22.04 B] 22.5 C] 23.09 D] 21.08

4. Out of the total deaths from 30th March to 8th May, if 22% occurred in place X and 10% of them are because of cigarettes, then the number of fire accidents for the given period in place X because of cigarettes is approximately.

A] 19 B] 20 C] 22 D] 23

Directions (5 – 7): These questions are based on the following bar diagram.



5. The average production for the last three years when compared with the average production for the first three years has dropped by

A] 5% B] 3% C] 9% D] 7%

6. If Left over = Production – Consumption, then the year in which there is the least left over as a percentage of production is

A] 1995 B] 1992 C] 1991 D] 1993

7. Which of the following statements is true?

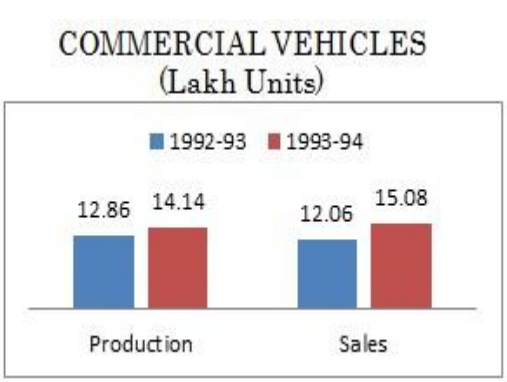
A] There is a steady increase in production from 1991 to 1995.

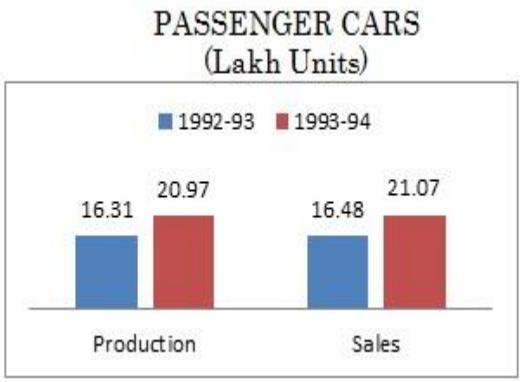
B] The consumption is increasing and decreasing in alternate years.

C] The steepest increase in production immediately follows the steepest fall in consumption.

D] None of the above.

Directions (8 – 10): These questions are based on the following bar diagrams.





Note:

I. The players in the Commercial Vehicle Segment are Ashok-Leyland, Telco, Bajaj Tempo and DCM-Toyota.

II. The players in the Passenger Car Segment are Hind Motors, Maruti and Premier Auto.

8. What was the percentage increase in the sales of commercial vehicles over the one year period mentioned?

A] 25% B] 16% C] 33 1/3% D] 22 6/7%

9. If Bajaj Tempo had a 10% share of the commercial vehicles market and sold its vehicles at 10% less than the list price, what were its sales (in rupees) in 1993-94, if the list price of its vehicles was Rs.10,000?

A] 13572 crore B] 167.25 lakh C] 135.72 crore D] 167.25 crore

10. Which of the following is true of the percentage increase in the sales of passenger cars for the given period?

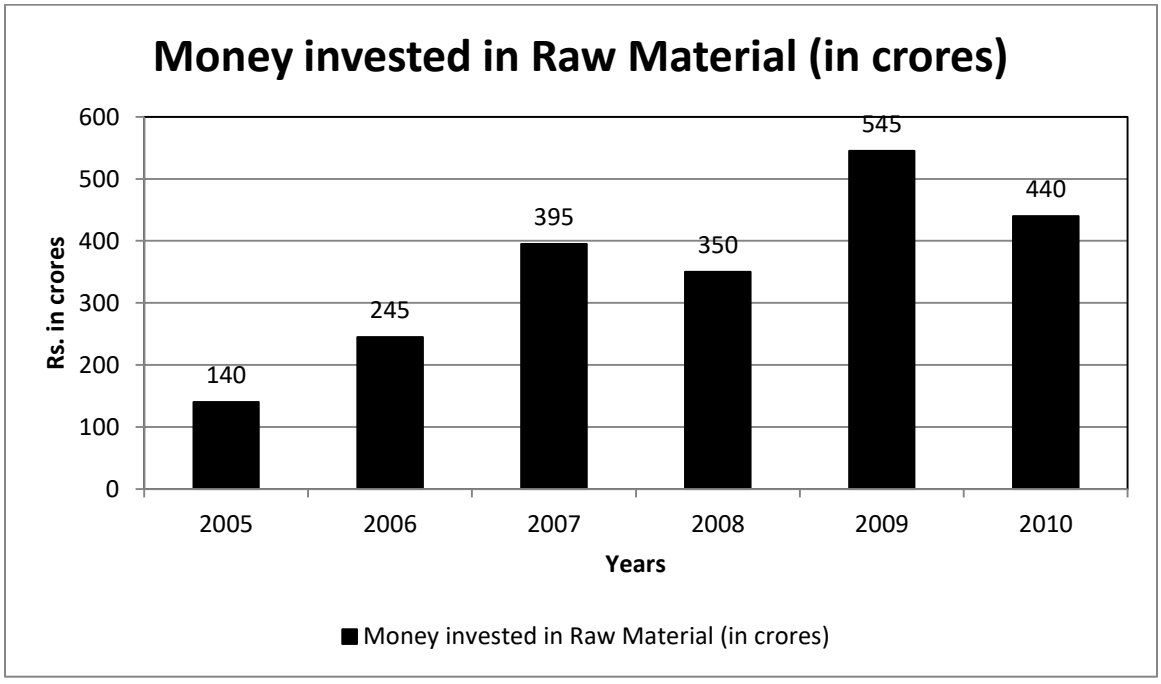
A] It was higher than the percentage increase in the production of cars for the given period.

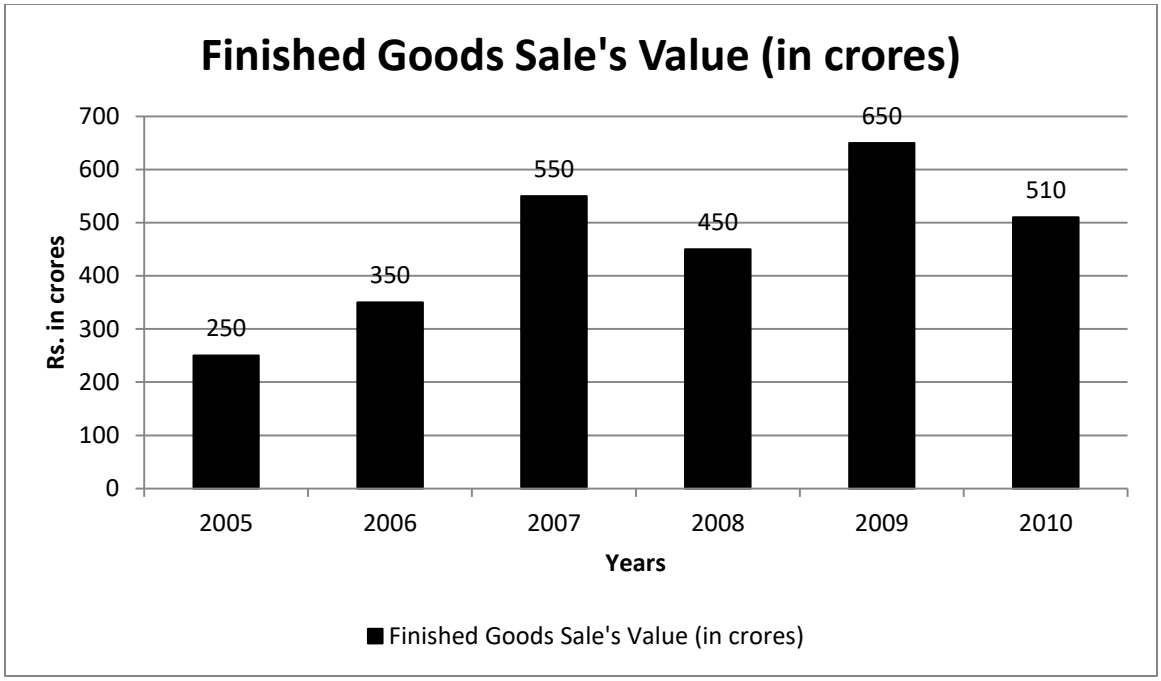
B] It was lower than the percentage increase in the production of cars for the given period.

C] It was equal to the percentage increase in the production of cars for the given period.

D] Insufficient information to decide.

Directions (11 – 12): The two bar graphs below provide the information about the money (in crores) invested in raw material over the years and the finished goods sale's value (in crores) of a company. Study the graph properly and answer the given question.





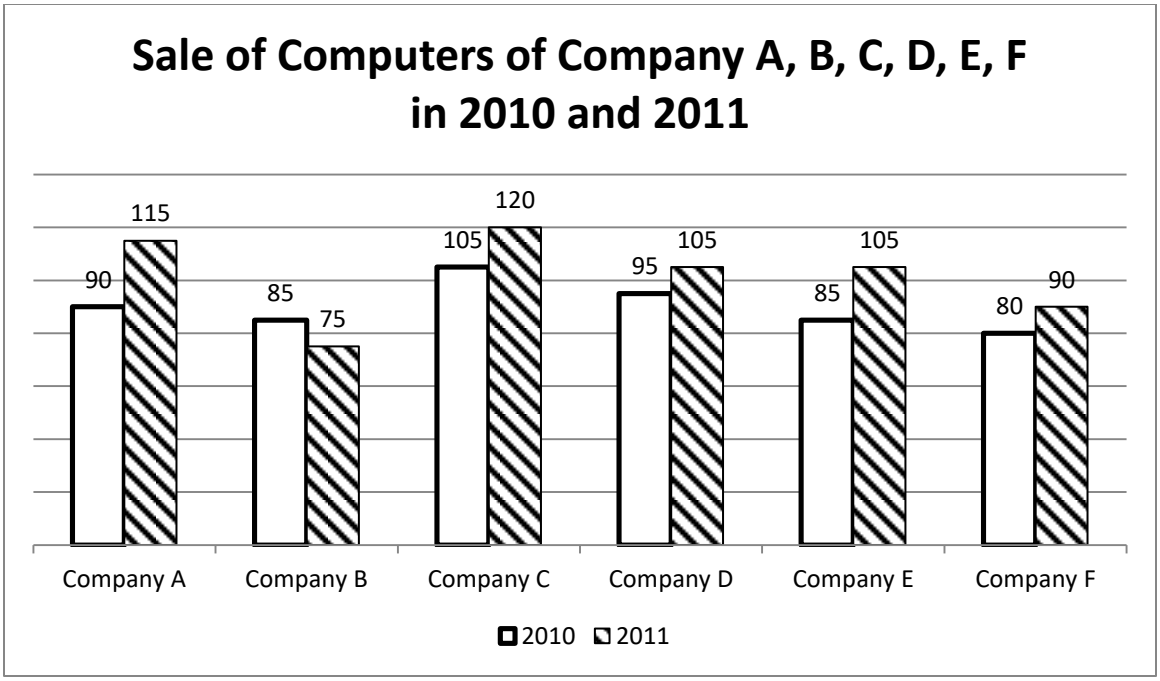
11. Find the difference between the average of finished goods sale's value and the money invested in raw materials during the six years.

A] 107.5 crores B] 110 crores C] 109.6 crores D] 210 crores

12. From 2005 to 2010, in which year the percentage change compared to the previous year was the same for both investment in raw material and the finished goods sold?

A] 2006 B] 2007 C] 2010 D] None of these

Directions (13 – 16): The bar graph provides the information about the sales of computers (in thousand number) from six different company during 2010 and 2011. Study the graph properly and answer the given questions.



13. Find the ratio between total sales of company B and company D for the year 2010 and 2011.

A] 4:5 B] 5:6 C] 7:11 D] 13:19

14. Total sales of company F is what percent of company C's total sales for both 2010 and 2011 together?

A] 72.12% B] 73.6% C] 75.5% D] 81%

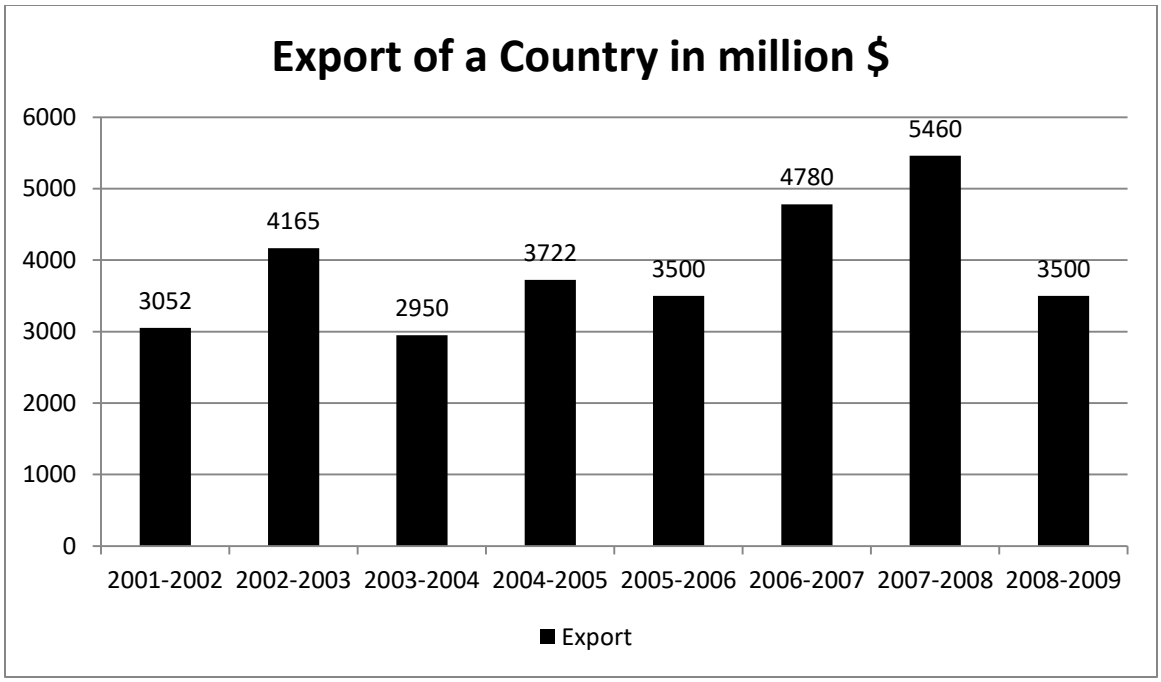
15. What percent of average sale of all 6 companies in 2011 is the average sale in 2010?

A] 81.2% B] 88.5% C] 92.6% D] None of these

16. Find the average sale of company A, C and F for the year 2011.

A] 105.6 B] 107.69 C] 102.3 D] 108.3

Directions (17 – 20): The bar graph below provides the information about the export of a country from the year 2001 to 2009. Study the graph properly and answer all the given questions.



17. Find the ratioof the years, in which the export was above the average to those in which the export was belowthe average.

A] 3:5 B] 5:3 C] 6:7 D] 9:10

18. The export of 2007-08 was how many times the export in 2004-2005.

A] 1.21 B] 1.69 C] 1.46 D] None of these

19. Find the year in which, the percent upsurge of export over the preceding year, was the lowest?

A] 2002-2003 B] 2007-2008 C] 2004-2005 D] 2006-2007

20. Find the percentage increase in the export in 2007-2008 over 2003-2004.

A] 89.6% B] 86.3% C] 85.08% D] Data Inadequate

TABLE CHARTS

Directions (1-5): These questions are to be answered on the basis of the following table giving the bank rates for 100 units of various foreign currencies converted to Indian rupees.

S.No	Currencies	Selling (Rs.)	Buying (Rs.)
1	Pound Sterling	4759	4723
2	US Dollar $	3152	3120
3	Deutsche Mark	1880	1833
4	Swiss Franc	2123	2060
5	French Franc	558	543
6	Swedish Kroner	414	397
7	Japanese Yen	29.70	29.00
8	Australian Dollar	2133	2080
9	U.A.E. Dirham	858	849

1. For how many currencies is the difference between buying and selling rates (per 100 units) more than Rs. 35?

   A] 2 B] 3 C] 4 D] 5

2. For which foreign currency is the difference between the rates for buying and selling approximately equivalent to the buying rate of one unit of that currency?

   A] Deutsche Mark B] Us Dollar C] Swiss Franc D] Swedish Kroner

3. A man wants to convert Rs. 10,000 into foreign currency. He wants to buy the foreign currency which gives him the maximum number of units. Which currency should he buy?

   A] Pound Sterling B] U.A.E. Dirham C] Japanese Yen D] French Franc

4. What is the approximate ratio of the buying rate of Australian Dollar of that to the U.S. Dollar?

   A] 15 B] 1.02 C] 1.09 D] 0.67

5. If the bank buys 100 Pounds Sterling and 200 U.A.E. Dirham, how much money in rupees is given to the seller of the foreign currency?

   A] Rs. 3,382 B] Rs. 6,421 C] Rs. 4,621 D] Rs. 6,382

Directions (6–10): Refer to the table below and answer the questions that follow.

The Internet is spreading its wings at a very fast pace and along with it, the software business resulting from the net is also growing. The table below provides a breakdown of the growth of the internet software market.

ESTIMATED INTERNET SOFTWARE MARKET REVENUE

BREAKDOWN (in $ million)

Type of software	1997	1998	1999	2000
Servers	235.9	635.8	1449.1	2633.9
Browsers	48.7	68.2	95.5	133.7
Authoring	13.5	46.9	134.8	287.5
Retrieval	43.5	82	156.9	245.6

6. Which of the markets is expected to show maximum compounded annual growth rate (CAGR) growth from 1997 to 2000?

A] Server B] Browsers C] Authoring D] Retrieval

7. What is the approximate CAGR rate at which total internet software market is expected to grow between 1197 and 2000?

A] 50% B] 110% C] 160% D] 200%

8. How much business will be contributed by Browsers in percentage terms over the four year period?

A] 4 B] 5.5 C] 4.5 D] 9

9. Which software has minimum growth over the period of four years?

A] Server B] Browser C] Authoring D] Retrieval

10. How much business will be generated by servers and retrieval in percentage terms over the four years period?

A] 86.9% B] 81% C] 76% D] 93.2%

Directions (11–15): Refer to the table below and answer the questions that follow.

Study the following table and answer the questions based on it. Expenditures of a Company (in Pesetas) per Annum Over the given Years.

Year	Item of Expenditure				
	Salary	Fuel and Transport	Bonus	Interest on Loans	Taxes
1998	288	98	3.00	23.4	83
1999	342	112	2.52	32.5	108
2000	324	101	3.84	41.6	74
2001	336	133	3.68	36.4	88
2002	420	142	3.96	49.4	98

11. What is the average amount of interest per year which the company had to pay during this period?

A] 32.43 B] 33.72 C] 34.18 D] 36.66

12. The total amount of bonus paid by the company during the given period is approximately what percent of the total amount of salary paid during this period?

A] 0.1% B] 0.5% C] 1.0% D] 1.25 %

13. Total expenditure on all these items in 1998 was approximately what percent of the total expenditure in 2002?

A] 62% B] 66% C] 69% D] 71%

14. The total expenditure of the company over these items during the year 2000 is?

A] 544.44 B] 501.11 C] 446.46 D] 478.87

15. The ratio between the total expenditure on Taxes for all the years and the total expenditure on Fuel and Transport for all the years respectively is approximately?

A] 4 : 7 B] 10 : 13 C] 15 : 18 D] 5 : 8

Directions (16–20): Refer to the table below and answer the questions that follow.

The following table shows the number of new employees added to different categories of employees in a company and also the number of employees from these categories who left the company every year.

Year	Managers		Technicians		Operators		Accountants		Peons	
	New	Left	New	Left	New	Left	New	Left	New	Left
1995	760	-	1200	-	880	-	1160	-	820	-
1996	280	120	272	120	256	104	200	100	184	96
1997	179	92	240	128	240	120	224	104	152	88
1998	148	88	236	96	208	100	248	96	196	80
1999	160	72	256	100	192	112	272	88	224	120
2000	193	96	288	112	248	144	260	92	200	104

16. What is the difference between the total number of Technicians added to the Company and the total number of Accountants added to the Company during the years 1996 to 2000?

A] 128 B] 112 C] 96 D] 88

17. What was the total number of Peons working in the Company in the year 1999?

A] 1312 B] 1192 C] 1088 D] 968

18. For which of the following categories the percentage increase in the number of employees working in the Company from 1995 to 2000 was the maximum?

A] Managers B] Technicians C] Operators D] Accountants

19. What is the pooled average of the total number of employees of all categories in the year 1997?

A] 1325 B] 1195 C] 1265 D] 1235

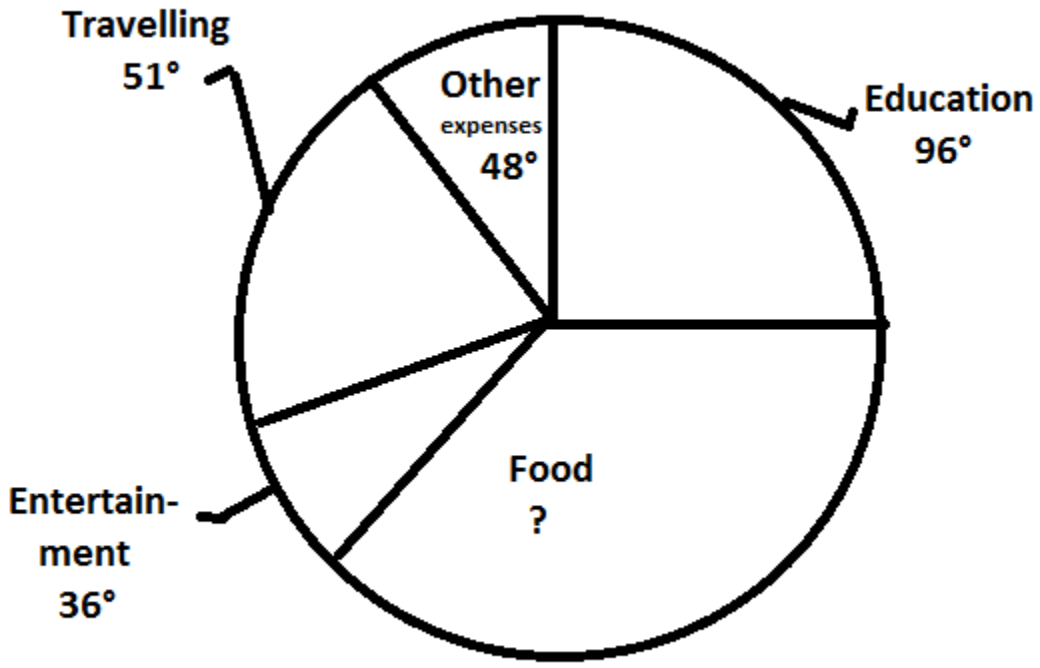
20. During the period between 1995 and 2000, the total number of Operators who left the Company is what percent of total number of Operators who joined the Company?

A] 19% B] 21% C] 27% D] 29%

MIXED - DI

Directions (1-5): Study the following the pie-chart and table carefully to answer the questions given below:

The following pie-chart shows the distribution of the monthly family budget of a person.



The following table shows the further distribution (in percent) of the above-mentioned items among the five family members i.E] P (the person himself), W (his wifE], Rahul (son), Rohit (son), and Preeti (his daughter). His monthly family budget is Rs. 1,20,000

	Education	Food	Entertainment	Travelling	Other expenses
P	10	30	10	40	20

W	15	25	30	10	25
Rahul	40	20	20	25	20
Rohit	25	15	25	10	10
Preeti	10	10	15	15	25

1. What is the average expenses of P?

A] Rs. 5620 B] Other than the given options
C] Rs. 5640 D] Rs. 5460
E] Rs. 5480

2. What is the approximate percentage increase in the amount Which Rahul enjoys for entertainment as compared to Preeti for the same?

A] 33% B] 31%
C] Other than the given options D] 37%
E] 35%

3. The average expenses of Rohit is approximately what percent of the average expenses of W (WifE]?

A] 76.4% B] 81.5%
C] 79.5% D] 83.5%
E] Other than the given options

4. Find the difference (in percentage of the budget) between the average expenses of Education and the average expenses on Entertainment of the couple?

A] 1.3% B] 0.9%
C] 2% D] Other than the given options
E] 2.5%

5. The total amount spent by Rahul on Travelling and Food is approximately what percent of the total amount spent by Preeti on Education and Food?

A] other than the given options B] 168%
C] 171% D] 175%
E] 174%

Directions (6 to 10): Following bar chart represents the number of people in 6 different villages (A, B, C, D, E and F) and the tabular column depicts the ratio of literate to illiterate people and percentage of male living in those villages.

Villages	Literate : Illiterate	% of male
A	2 : 3	52
B	11: 9	65
C	13 : 2	45
D	4 : 1	70
E	1 : 3	39
F	11 : 19	75

6. If 40% of the female from village B is literate, then what is the percentage of male, who is illiterate from village B?

A] 38%
B] 35%
C] 37%
D] cannot be determined
E] none of these

7. What is the percentage of literate people in all the six villages together?

A] 55%
B] 53%
C] 51%
D] cannot be determined
E] none of these

8. **What is the ratio between numbers of illiterate people from villages B, C & D to number of female from villages A, E & F?**

A] 320:527 B] 527:330
C] 330:527 D] 527:320
E] None of these

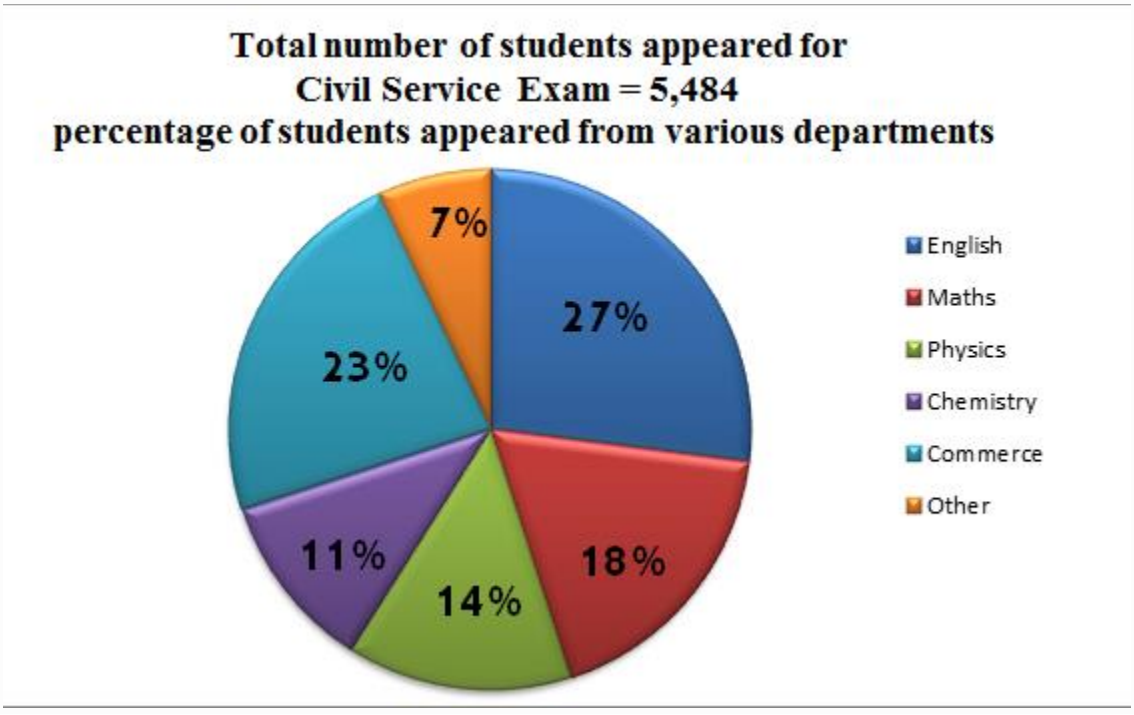
9. **If 3% of female from village D & 5% of female from village E are literate then what is the total number of literate male from D & F together?**

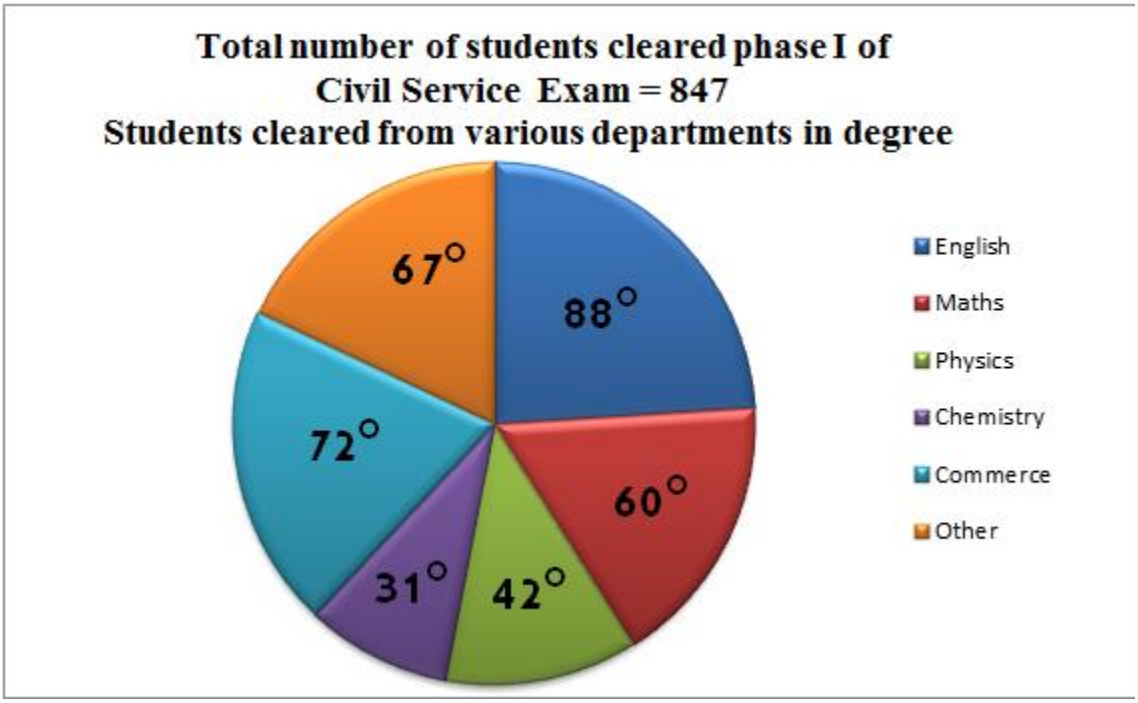
A] 1823 B] 1723
C] 1623 D] cannot be determined
E] none of these

10. **The number of female from villages A & C is how much percentage more or less than number of female from villages D & F?**

A] 24.76% B] 24.72%
C] 25.76% D] 25.72%
E] None of these

<u>Directions (11-15) :</u> Following Pie charts represent the number of students, who have appeared and cleared phase I of Civil Service Exam from various departments of an Arts and Science College.





11. **Approximately what is the difference between the number of students cleared phase I from Math's department and number of students appeared from English department?**
A] 1350 B] 1240 C] 1340 D] 1250 E] None of these

12. **The total number of students clearing phase I from commerce and other department is what percentage of the number of students clearing phase I from physics department?**
A] 340 % B] 310 % C] 320 % D] 330 % E] None of these

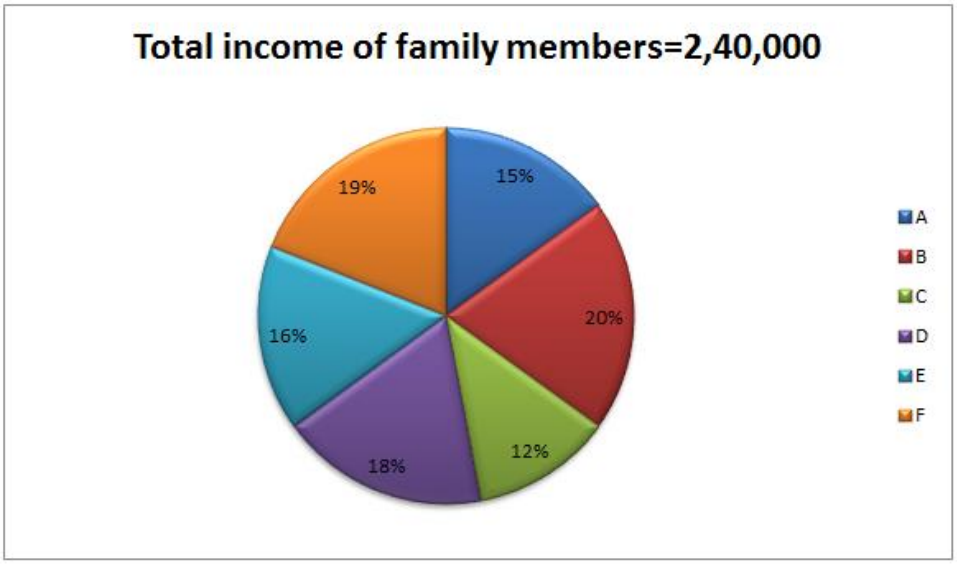
13. **What has the ratio between numbers of students appeared from Math's and physics departments to the number of students appeared from chemistry and commerce departments?**
A] 16:15 B] 15:17 C] 16:17 D] 15:16 E] None of these

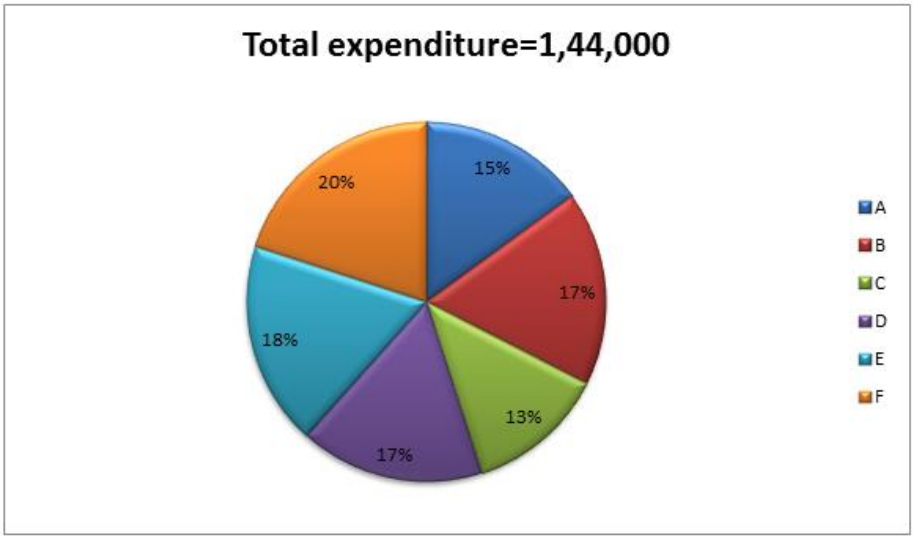
14. **From which department is the difference between the number of students cleared and the number of students appeared is the second minimum?**
A] Chemistry B] Physics C] Commerce D] Math's E] None of these

15. What is the percentage of students, who did not clear the phase I of the exam?

A] 84.45% B] 84.55% C] 83.55% D] 83.45% E] None of these

<u>Directions (Q.16-20):</u> The following pie charts show the total income and the total expenditure of family members. Study the following pie-charts carefully and answer the questions given below:





16. What is the difference between the Income of F and the expenditure of A?

A] 36000 B] 21000 C] 30000 D] 24000 E] 27000

17. **What is the ratio of total income of A and B together and the total expenditure of E and F together?**

A] 149:151 B] 123:150 C] 175:114 D] 100:93 E] 114:175

18. Find the total saving of B and D.

A] 45200 B] 42640 C] 43950 D] 46250 E] None of these

19. Find the average income of A, C and D.

A] 36000 B] 45000 C] 28800 D] 35000 E] 30000

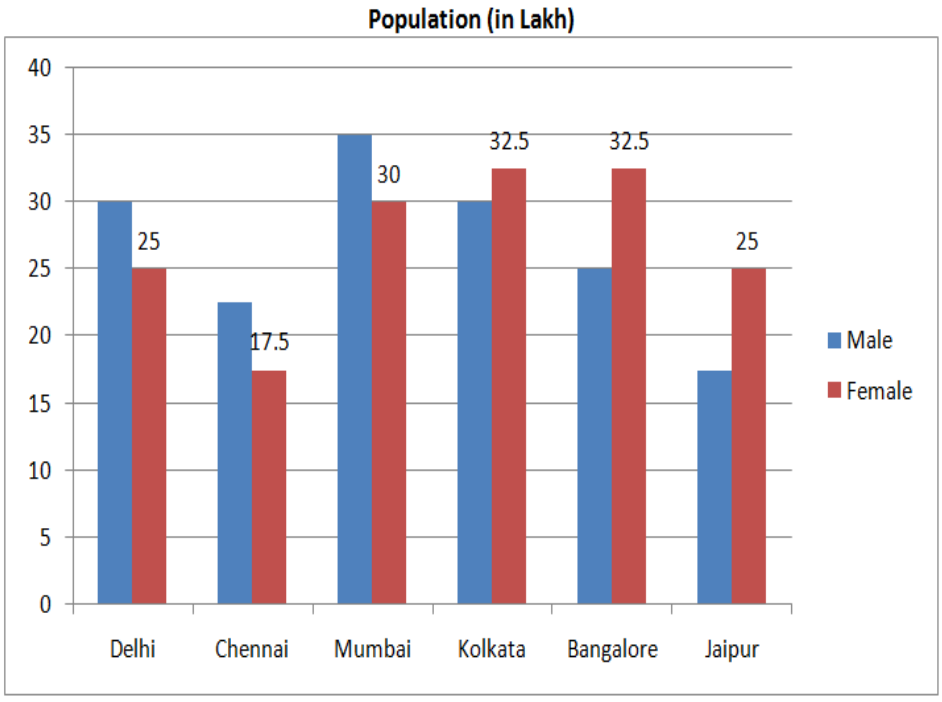
20. **If the income of F is increased by 10% and the expenditure increased by 5%. Find the saving.**

A] 14325 B] 16250 C] 19920 D] 15650 E] 18520

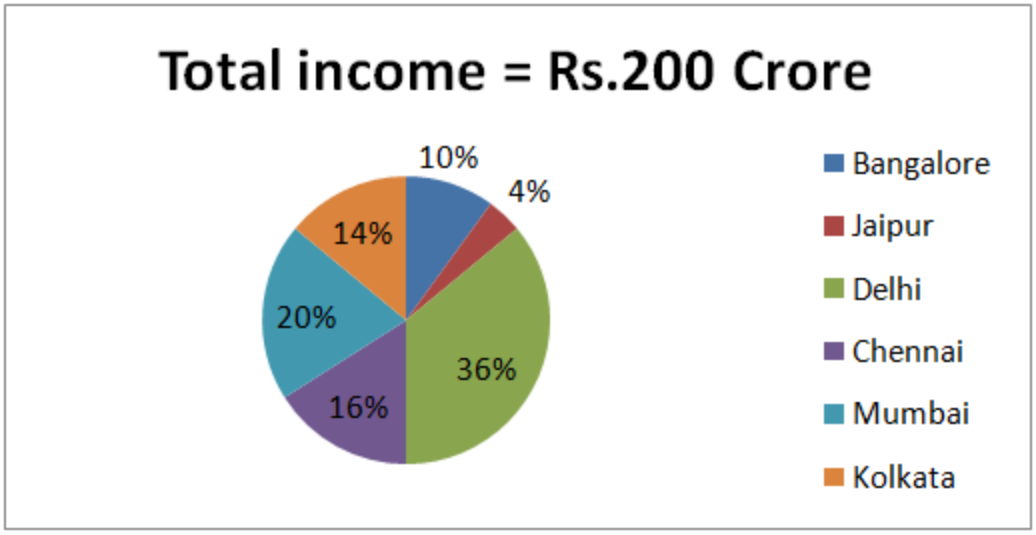
Direction (21 -25)

Study the bar-chart and pie-chart carefully to answer the given questions.

Working male and female population (in lakh) in various cities



Percentage income of the people among six cities



21. What is the difference between the number of working females in Bangalore and the number of working males in Chennai?

A] 12.5 lakh B] 11 lakh C] 9 lakh D] 12 lakh
E] 10 lakh

22. In which city is the income per working person the minimum?

A] Delhi B] Jaipur C] Bangalore D] Chennai
E] Mumbai

23. What is the sum of the average working male and average working female population of the given six cities (calculate approximate value)?

A] 63.35 lakh B] 49.96 lakh C] 51.48 lakh D] 53.75 lakh
E] 65.51 lakh

24. In Delhi, what is the difference between the income of males and that of females? (Assume each person (male/female) has equal income)

A] Rs.6.545 Crore B] Rs.5.055 Crore C] Rs.2.935 Crore
D] Rs.3.455 Crore E] Rs.4.565 Crore

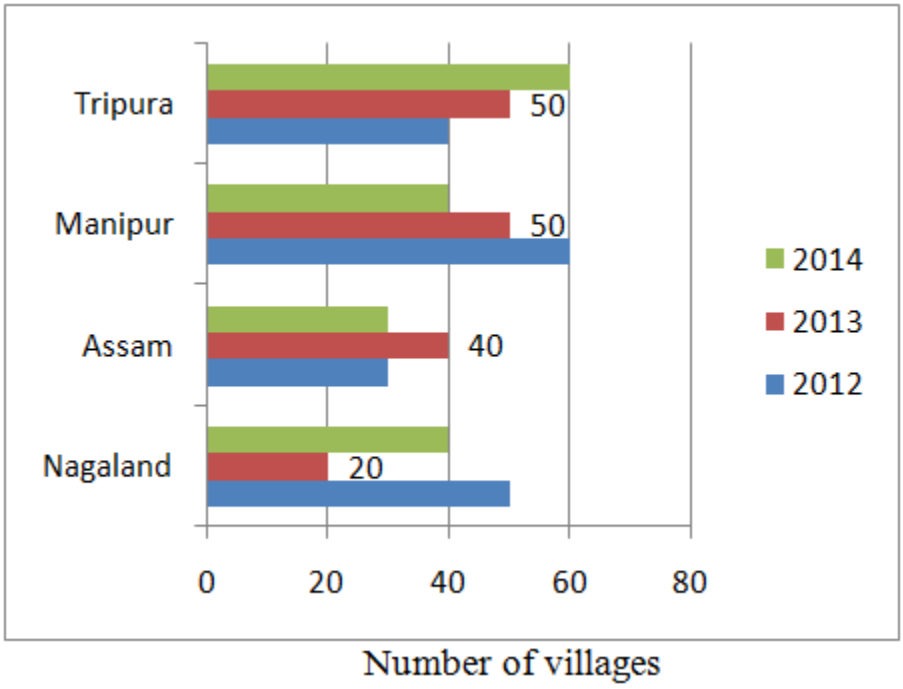
25. The number of working females in Mumbai is what percent of the number of working males in Bangalore?

A] 95% B] 110% C] 120% D] 132% E] 144%

Direction (26-30)

Study the given bar-chart carefully and answer the following questions.

The graph shows the number of villages in four different states where electrification was done in different years.



26. The number of villages in Nagaland where electrification was done in 2013 is what percentage of the number of villages in Tripura where electrification was done in 2014?

A] 55.5% B] 44.4% C] 77.7%

D] 66.6% E] 33.3%

27. What is the ratio of the villages in Assam to those in Manipur where electrification was done in 2013?

A] 1 : 4 B] 3 : 4 C] 1 : 2

D] 4 : 5 E] 3 : 2

28. In which state was the electrification work done in maximum villages during the given three years?

A] Assam B] Manipur C] Manipur and Tripura
D] Nagaland E] Manipur and Assam

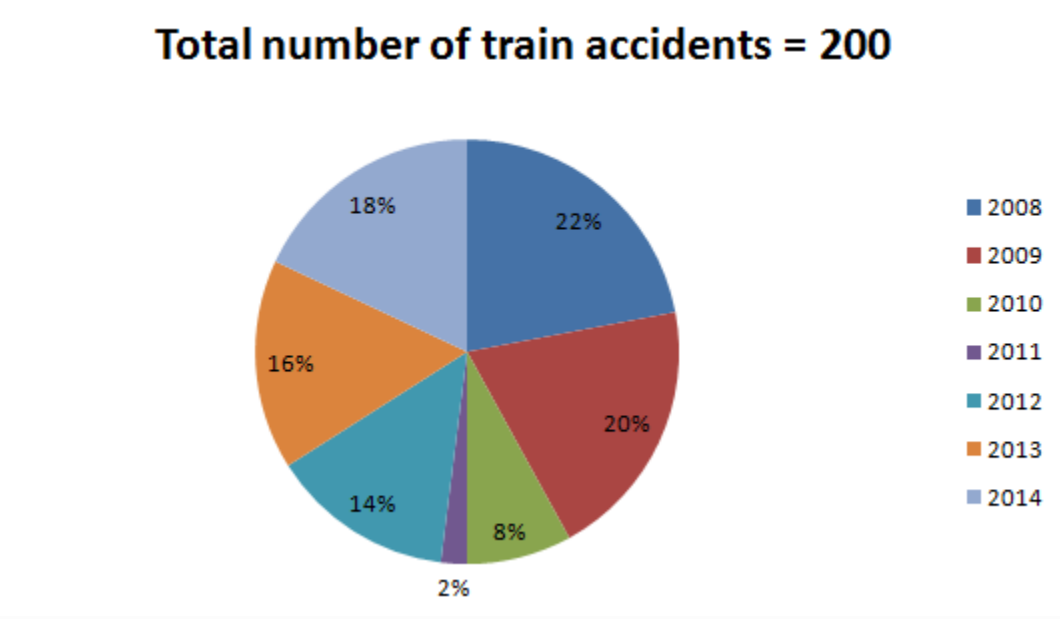
29. If the cost of electrification of a village is Rs.75 lakh then what is the cost of electrification in four states during the given period?
A] Rs.4319000000 B] Rs.3825000000 C] Rs.4143000000
D] Rs.355700000 E] Rs.2721000000

30. In which year was the electrification work done in maximum number of villages?
A] 2012 B] 2013 C] 2014
D] 2013 and 2012 E] 2012 and 2014

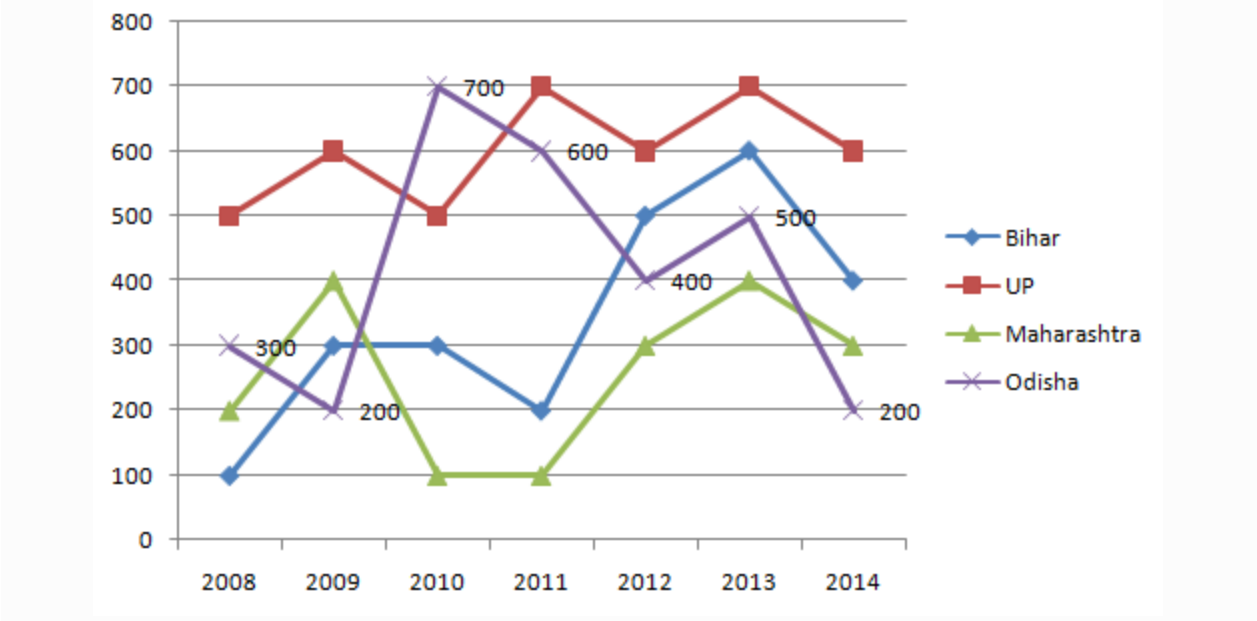
Direction (31-35)

Study the pie-chart and line graph carefully to answer the given questions

The pie-chart shows the percentage of train accidents in different years



The line graph shows the number of persons who died in train accidents in various states in different years



31. The number of persons who died in train accidents in 2013 is how much percent more than the number of persons who died in the train accident in 2011?

A] 143.5% B] 137.5% C] 37.5%
D] 127.5% E] 147.5%

32. What is the average of the number of persons who died in train accidents in 2008 in all states together?

A] 182 B] 290 C] 275
D] 284 E] 307

33. In which state is the number of persons who died in the train accidents the maximum during the given period?

A] Odisha B] UP C] Bihar
D] Only A] and B] E] Maharashtra

34. What is the difference between the number of train accidents in 2014 and that in 2012?

A] 5 B] 6 C] 7
D] 8 E] 9

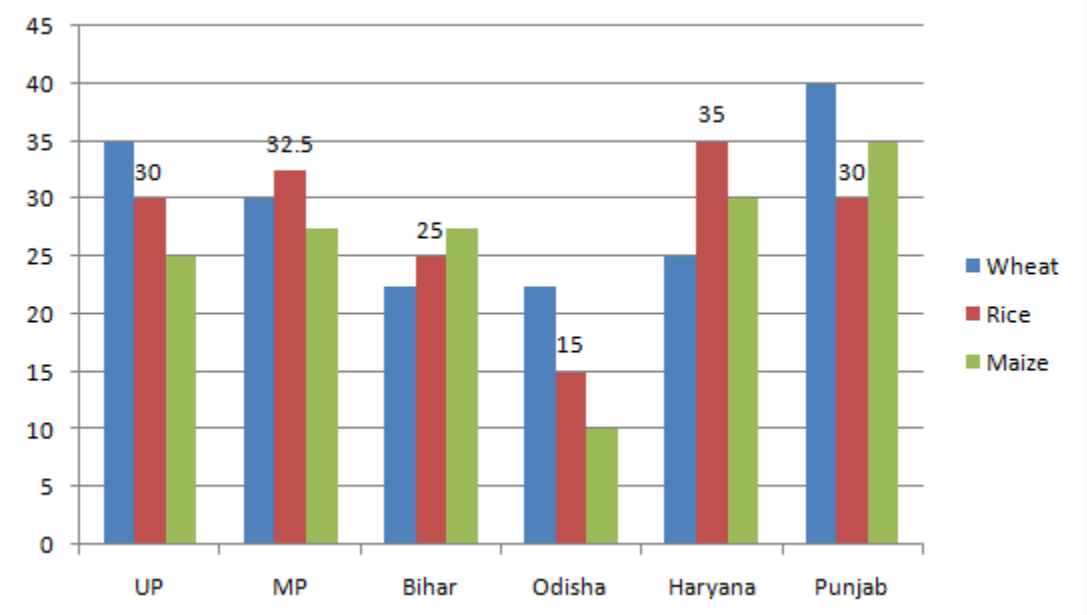
35. What is the ratio of the number of persons who died in train accidents in 2010 to that in 2014?

A] 8 : 7 B] 10 : 9 C] 12 : 11
D] 14 : 13 E] 16 : 15

Direction (36-40)

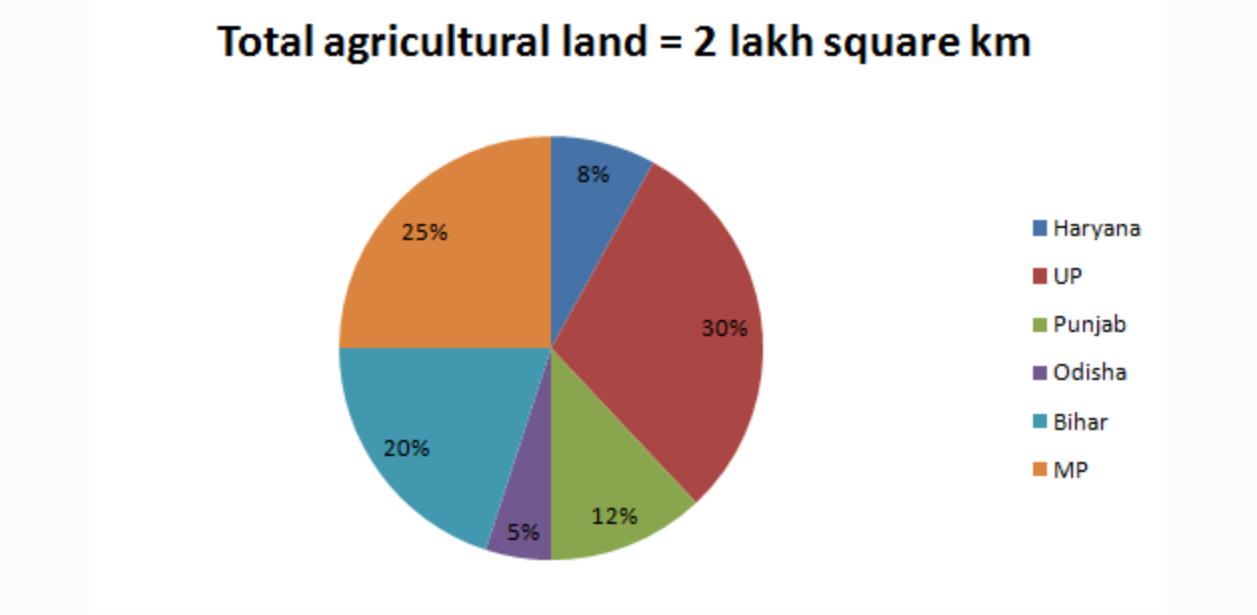
Study the given bar graph and pie chart to answer the following questions.

The bar graph shows the production (in thousand tones) of Wheat, Rice and Maize in different states.



The pie-chart shows the percentage of agricultural land in the given six states.

Productivity = Total production / Area of agricultural land



36. The productivity of which state is the maximum?
A] Bihar B] Haryana C] Punjab
D] UP E] MP

37. The production of which state is the maximum?
A] Bihar B] MP C] Haryana
D] UP E] Punjab

38. The production of wheat in Punjab is what percent more than the production of Maize in Odisha?
A] 350% B] 250% C] 300%
D] 200% E] 400%

39. What is the ratio of the production of Rice in Bihar to the production of Wheat in Haryana?
A] 2 : 3 B] 3 : 2 C] 2 : 1
D] 1 : 1 E] 1 : 2

40. If MP exports 40% of Rice at the rate of Rs.30 per kg and UP exports 30% of Rice at the rate of Rs.32 per kg, then what is the ratio of the incomes from the exports?
A] 65 : 48 B] 31 : 42 C] 43 : 54
D] 57 : 62 E] 1 : 2