| Sections | Number of questions | Marks | Duration of Exam |
|---|---|---|---|
| **1.** English Language | 30 | 30 | |
| **2.** Reasoning | 35 | 35 | 60 minutes |
| **3.** Quantitative Aptitude | 35 | 35 | |
| | Total = 100 Qs. | Total marks = 100 | |

## 1. English Language

Direction (Q. 1 - 5): Read the passage carefully and answer the questions given below it

It is an old saying that knowledge is power. Education is an instrument which imparts knowledge and, therefore, indirectly controls power. Therefore, ever since the dawn of civilization, persons in power have always tried to supervise or control education. It has been the handmaid of the ruling class. During the Christian Era, the ecclesiastics controlled the institution of education and diffused among the people the gospels of the Bible and religious teachings.

These gospels and teachings were nothing but a philosophy for the maintenance of the existing society. It taught the poor man to be meek and to earn his bread with the sweat of his brow, while the priests and the landlords lived in luxury, fought duels for the slightest offence. During the Renaissance, education passed from the clutches of the priests into the hands of the princes. In other words, it became more secular. It was also due to the growth of the nation and powerful monarchs who united the country under their rule. Thus, under the control of the monarch, education began to devise and preach the infallibility of its master, the monarch or the king. It also invented and supported fantastic theories like the 'Divine Right Theory' and that the king can do no wrong. With the advent of the Industrial Revolution, education took a different turn and had to please the new masters. It, now, no longer remained the privilege of the baron class but was still confined to the few elite. The philosophy which was in vogue during this period was that of laissez faire restricting the function of the State to a mere keeping of law and order. While, on the other hand, in practice the law of the jungle prevailed in the form of free competition and survival of the fittest.

**1.** During the Christian Era, who controlled the education system?

1) Government   2) Common people   3) Church and priests   4) Monarchs   5) None of these

**2.** What does 'the handmaid of the ruling class' mean?

1) Private maid of the prince

2) Mistress of the prince

3) The economy under the authority of the prince

4) Something which is fully under the control of the ruling class

5) None of these

**3.** Consider the following statements.

I. During the Renaissance, education became less secular.

II. Under the laissez faire approach, it was believed that the king can do no wrong.

Which of the above statement(s) is/are correct?

1) Only I    2) Only II    3) Both I and II    4) Either I or II    5) None of these

**4.** Whom does the term' infallibility' refer to in this passage?

1) Kings   2) Scholars   3) Priests    4) Social reformers    5) None of these

**5.** Which of the following statements is correct?

1) The poor man was thought to be a messenger of God.

2) It was thought that the poor man must earn his bread by hard work.

3) The approach of survival of the fittest did not prevail.

4) In the Christian Era, the function of the state was confined only to governance.

5) None of these

Direction (Q. 6 - 10): Rearrange the following five sentences (A), (B), (C), (D) and (E) in the proper sequence to form a meaningful paragraph; then answer the questions given below.

A. Unfortunately, because of modernization, much of nature is now yielding to towns, roads and industrial areas.

B. In a few places, some natural reserves are now being carved out to avert the danger of destroying nature completely.

C We should preserve nature to preserve life and beauty.

D. Man will perish without nature, so modern man should continue this struggle to save plants from extinction.

E A beautiful landscape, full of green vegetation, will not just attract our attention but will fill us with infinite satisfaction.

**6.** Which of the following should be the FIRST sentence after rearrangement?

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

**7.** Which of the following should be the SECOND sentence after rearrangement?

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

**8.** Which of the following should be the THIRD sentence after rearrangement?

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

**9.** Which of the following should be the FOURTH sentence after rearrangement?

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

**10.** Which of the following should be the FIFTH sentence after rearrangement?

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

Direction (Q. 11 - 20): In each of the following sentences there are two blank spaces. Below each sentence there are five pairs of words denoted by the numbers 1,2,3,4 and 5. Find out which pair of words can be filled up in the blanks in the sentence in the same sequence to make it meaningfully complete.

**11.** To_____ time, please go_____ foot and not by bus.

1) speed, with   2) kill, towards   3) utilize, on   4) gain, on   5) None of these

**12.** There_____ to be an air of peace now_____ in our country.

1) seems, blowing   2) looks, flowing   3) feels, advancing   4) seem, floating   5) None of these

**13.** Satish reminded him_____ his promise but he was quite indifferent to_____ Satish said.

1) of, what    2) for, when    3) on, while    4) to, which    5) None of these

**14.** What is sauce for the_____ is sauce for the_____.

1) cock, hen    2) fox, vixen    3) goose, gander    4) duck, doe    5) None of these

**15.** Everyone was_____ by surprise when she_____ her plan to marry that boy.

1) moved, said

2) taken, announced

3) shaken, declare

4) dead, asked

5) None of these

**16.** _____my knowledge, Mr Gupta has a prejudice_____ foreigners.

1) In, for    2) As, towards    3) For, at    4) To, against    5) None of these

**17.** He was always _ _ _ _ _ of the good_____ of others.

1) irritable, works   2) greedy, thing   3) envious, fortune   4) sorry, luck   5) None of these

**18.** Besides the items _ _ _ _ _ from the almirah, documents Were_____ all over the floor.

1) disappearing, thrown

2) missing, strewn

3) deprived, scattered

4) clear, split

5) None of these

**19.** On account of_____ rainfall, they had to_____ cut in water supply.

1) inadequate, impose

2) sufficient, enforce

3) heavy, regulate

4) scanty, lift

5) None of these

**20.** Even if a man is found_____ by a court, he can_____ to a higher court.

1) convicted, onus   2) guilty, appeal   3) wanting, office   4) derelict, attitude   5) None of these

Direction (Q. 21 - 30): In each sentence below, a word/ group of words has been printed in bold. From the five answer choices given below each sentence, pick out the one which can substitute the bold word/group of words correctly, without changing the meaning of the sentence.

**21.** The editor cut up all the long words from his article.

1) cut up some   2) cut across all   3) cut out all   4) cut back all   5) No correction required

**22.** However intelligent you may be, you cannot take success for granted.

1) you are   2) you could be   3) you should be   4) might you be   5) No correction required

**23.** Our business firms were full aware of the upcoming crisis.

1) were fully aware into

2) have been full aware of

3) were fully aware of

4) had been fully aware at

5) No correction required

**24.** To finish a long journey, persistent is needed.

1) persistence is needing

2) persistence is one what needs

3) persistence is what one needs

4) one needs to be persisted

5) No correction required

**25.** He likes living in small towns rather than crowded cities.

1) rather than that in crowded cities

2) rather than in crowded cities

3) rather crowded cities

4) better than crowded cities

5) No correction required

**26.** Hansen is occupying an important position in the world of music.

1) occupies

2) has occupied

3) has been occupying

4) is being occupied

5) No correction required

**27.** He is not in a position to use the phone given by you to him.

1) given to him

2) given by you

3) you gave to him

4) given by him to you

5) No correction required

**28.** Last fifteen days he has not been attending classes.

1) In the last fifteen days

2) Fifteen last days

3) Of the last fifteen days

4) For the last fifteen days

5) No correction required

**29.** The toys he bought are too cheap to be good.

1) are so much cheap

2) are so cheap that

3) were so cheap

4) are so cheap

5) No correction required

**30.** You should apologies for your inability to attending the wedding.

1) inability about attending

2) being in able to attending

3) being unable to attend

4) unability to attend

5) No correction required

**Answers:**

**1.** (3)

**2.** (4)

**3.** (5)

**4.** (1)

**5.** (2)

**6.** (3)

**7.** (5)

**8.** (1)

**9.** (2)

**10.** (4)

**11.** (5)

**12.** (5)

**13.** (1)

**14.** (3)

**15.** (2)

**16.** (4)

**17.** (3)

**18.** (2)

**19.** (1)

**20.** (2)

**21.** (3)

**22.** (5)

**23.** (3)

**24.** (3)

**25.** (2)

**26.** (1)

**27.** (2)

**28.** (4)

**29.** (5)

**30.** (3)

## 2. Reasoning

Direction (Q. 1 - 5): Read the following information carefully and answer the questions based on it.

Each of the alphabets given below represents a digit (from 1 to 9). No digit is represented by more than one alphabet and vice versa.

$$\begin{array}{r} A\ B\ C\ D \\ +\ c\ A\ B\ C\ D \\ \hline B\ F\ D\ F\ C \end{array}$$

**1.** What is the value of 'B + C + D'?

1) 12    2) 14    3) 16    4) 19    5) None of these

**2.** What is the value of '(BF) x (FC)'?

1) 966    2) 865    3) 826    4)735    5) None of these

**3.** What is the value of 'A x B x C' ?

1) 72    2) 108    3) 24    4) 36    5) None of these

**4.** How many digits from A to F are prime numbers?

1) 1    2) 2    3) 3    4) 4    5) None of these

**5.** What is the sum of the three largest digits out of the given digits from A to F?

1) 21    2) 22    3) 23    4) 24    5) None of these

Direction (Q. 6 - 7): Read the following statements and answer the questions given below.

(i) Gopal is Anil's father.

(ii) Sudha is Anil's grandmother.

(iii) Ami is Sudha's sister.

(iv) Preeti is Gopal's wife.

(v) Anu is not Gopal's aunt.

**6.** How is Preeti related to anu?

1) Sister   2) Niece   3) Sister-in-law   4) Maternal uncle   5) None of these

**7.** How is Sudha's daughter Rashmi related to Anil?

1) Mother   2) Paternal aunt   3) Maternal aunt   4) Cannot be determined   5) None of these

Direction (Q. 8 - 10): Read the following information and answer the questions given below.

P + Q means 'P is the brother of Q'.

P x Q means 'P is the father of Q'.

P - Q means 'P is the sister of Q'.

P ÷ Q means 'P is the mother of Q'.

**8.** Which of the following represents 'A is the cousin of C?

1) A ÷ X + Y x C

2) Q ÷ A + N + C

3) Z H ÷ A + P X R + C

4) C + X X Y - A

5) None of these

**9.** What will come in place of question mark (?) if P is the paternal grandfather of R?

P x S + N ? Q + R

1) +    2) -    3) x    4) -    5) Cannot say

**10.** Which of the following means 'X is the maternal uncle Of Z'?

1 ) X + Y + Z   2) X + Y + Z   3) X + Z + Y   4) X + Y - Z   5) None of these

Direction (Q. 11 - 15): Each of the questions below consists of a question and two statements numbered I and II given below it You have to decide whether the data provided in the statement are sufficient to answer the question.

1) if the data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.

2) if the data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient.

3) if the data in statement I alone or II alone are sufficient to answer the question.

4) if the data even in both statements I and II together are not sufficient to answer the question.

5) if the data in the both statements I and II together are necessary to answer the question.

**11.** When is Ravi's birthday?

Statements: I. Ravi's father was born on 16-01-1965.

II. Ravi is 22 years younger than his mother.

**12.** Madhu is shorter than Rishi, and Ruchi is taller than Shashi. Who is the shortest among them?

Statements: I. Rishi is shorter than Shashi.

II. Rishi is taller than Ruchi.

**13.** In a certain code, 349 means 'we are champions'. Which letter stands for 'we'?

Statements: I. 975 means 'we won cup'.

II. 641 means 'they are losers'.

**14.** U, V, W, X, Y are standing in a row facing North. Who is on the immediate right of U?

Statements: I. V is on the immediate left of Y, who is second to the right of U.

II. U is second to the right of W and W is third to the left of V.

**15.** What does 'sa' mean in a code language?

Statements: I. 'li na pee' means 'come home tomorrow'.

II. 'pee saki' means 'home and office'.

Direction (Q. 16 - 20): In these questions, relationship between different elements is shown in the statements. These statements are followed by two conclusions.

1) if only conclusion I follows.

2) if only conclusion II follows.

3) if either conclusion I or II follows.

4) if neither conclusion I nor II follows.

5) if both conclusions I and II follow.

**16.** Statements: $R \geq S = K > T < O \wedge P$

Conclusions: I. K < R    II. K<P

**17.** Statements: Z ≥ X=Y, Y < V < W

Conclusions: L Z > V    II W>X

**18.** Statements: P > Q , R ≤ S , T > R = Q

Conclusions: I. Q = S    II Q<S

**19.** Statements: A > B,C = D ≥ X , C > F

Conclusions: I . O X    II F > X

**20.** Statements: A > C < D = R = M ≤ N

Conclusions: I. N > C    II A = N

Direction (Q. 21 - 25): In each question, the statements are followed by two conclusions I and II. You have to take the given statements to be true and then decide which of the conclusions logically follows from the given statements disregarding commonly known facts.

1) if only conclusion I follows.

2) if only conclusion II follows.

3) if either conclusion I or II follows.

4) if neither conclusion I nor II follows.

5) if both conclusions I and II follow.

**21.** Statements: All kings are brave.

All princes are brave.

Many boys are prince.

Conclusion: I. All braves can be prince.

II. At least some braves are both prince and king.

**22.** Statements: Some palaces are forts.

Some forts are red.

No red is strong.

Conclusions: I. Some palaces being strong is a possibility.

II. Some forts may be strong.

**23.** Statements: Some trucks are buses.

All buses are cars.

All cars are bikes.

Conclusions: I. Some buses are cars as well as bikes.

II. A car cannot be a bus.

**24.** Statements: Some greens are red.

All reds may be yellow.

Some yellows are blue.

Conclusions: I. Some greens may be blue.

II. Some reds may be blue.

**25.** Statements: Some bats are balls.

All footballs are balls.

No hockey is a bat.

Conclusions: I. No bat can be a hockey.

II. No hockey can be a football.

Direction (Q. 26 - 30): Study the following information carefully to answer the given questions.

Five golfers A, B, C, D and E play a series of matches in which the following is always true of the results. Either A is the last and E is the first or A is the first and E is the last. B finishes ahead of C. Every golfer plays and finishes every match. No two players ever finish at the same position in a match.

**26.** Which of the following cannot be true?

1) C finishes second.

2) D finishes second.

3) C finishes ahead of D.

4) D finishes ahead of B.

5) None is true

**27.** If A finishes first, then in how many different orders is it possible for other golfers to finish?

1) 1    2) 2    3) 3    4) 4    5) Can't say

**28.** If B finishes third, then which of the following must be true?

1) E finishes first.

2) C finishes ahead of D.

3) D finishes ahead of C.

4) D finishes behind B.

5) Can't say

**29.** Which of the following additional conditions make it certain that D finishes second?

1) A finishes ahead of B.

2) B finishes ahead of D.

3) D finishes ahead of B.

4) B finishes behind E.

5) Can't say

**30.** If exactly one golfer finishes between A and B, which of the following must be true?

1) A finishes first.

2) E finishes first.

3) D finishes third.

4) C finishes fourth.

5) None of these

Direction (Q. 31 - 35): Study the following information carefully and answer the given questions.

A word and number arrangement machine when given an input line of words and numbers rearranges them following a particular rule in each step. The following is an illustration of input and its rearrangement.

Input: exam on 15 is cancel held before 12 but not after 20

Step I: before 12 exam on 15 is cancel held but not after 20

Step II: before 12 on 15 exam is cancel held but not after 20

Step III: before 12 on 15 after 20 exam is cancel held but not

Step IV: before 12 on 15 after 20 not exam is cancel held but

Step V: before 12 on 15 after 20 not is exam cancel held but

Step VI: before 12 on 15 after 20 not is held exam cancel but

Step VI is the last step of the rearrangement.

As per the rules followed in the above steps, find out in each of the following questions the appropriate step for the given input.

Input: Gayle hit 37 in 7 ball not in I over

**31.** Which of the following would be the final arrangement?

1) in 1 in 7 hit 37 Gayle ball not over

2) in 1 in 7 hit 37 over not Gayle ball

3) in 1 in 7 hit 37 not over Gayle ball

4) in 1 in 7 hit 3 7 not Gayle over ball

5) None of these

**32.** Which step number will be the following output?

in I in 7 hit 37 Gayle ball not over

1) III    2) IV    3) V    4) VI    5) None of these

**33.** In step IV, which of the following words/numbers would be at eighth position from the left?

1) over    2) Gayle    3) 37    4) balls    5) None of these

**34.** How many steps will be required to complete the rearrangement?

1) V    2) VI    3) VH    4) VIII    5) None of these

**35.** In step III, if hits is related to Gayle and Gayle is related to not in a certain way, which of the following would 37 be related to, following the same pattern?

1) not    2) hit    3) ball    4) 7    5) None of these


**Answers:**

**(1 - 5):**

$$\begin{array}{r} A\ B\ C\ D \\ +\ C\ A\ B\ E\ B \\ \hline B\ F\ D\ F\ C \end{array}$$

For the sake of addition, the rightmost column will be the first and the leftmost the last. Starting with the last column, these must be a carry over, so that

C + I = B or B – C = 1  …………(1)

From the first column: B + D = C …………..(2)

Or B + D = C + 10  ……………(3)

From (1), (2), (3): = D = -1 or 9

But D = - 1

So, D = 9

Now, since D = 9, so there will surely be a carry over to the next column.

So, C + E + I = F

Carry

Or C + E + I = F + 10

From the third column: B + B = D

Odd no. (ie 9)

So, there will also be a carry over

So, B + B + I = D

2B + I = D ……………………….(4)

Or 2B + I = D + 10  ………….(5)

Putting D = 9 in (4) and (5),

We get B = 4 or 9

Hence B = 4, because D = 9

From (1): B – C = 1

= 4 – C = 1

= C = 3

From the fourth column: A + A = F + 10

Also, C + E + 1 = F + 10

So, A  F  E

    6  2  8    Possible

    7  4  10   Not possible as B = 4

    8  6  12   Not possible as E should not be more than 9.

Therefore,

A  B  C  D  E  F

6  4  3  9  8  2

**1.** (3); B + C + D = 4 + 3 + 9 = 16

**2.** (1); (BF) x (FC) = (42) x (23) = 966

**3.** (1); A x B x C = 6 x 4 x 3 = 72

**4.** (2); Only 2 and 3 are prime numbers.

**5.** (3); Three largest digits are 9, 8 and 6. Their sum is 23.

**6.** (2)

**7.** (3);

Sudha's daughter Rashmi will be the sister of Preeti. Hence, she is Anil's maternal aunt.
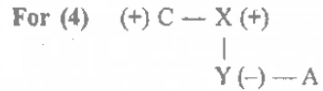
**8.** (5);

- Female + - Male

For (1)    A (–)
            |
        (+) X — Y(+)
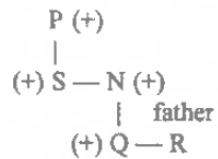               |
               C
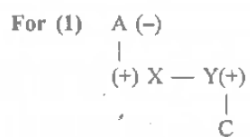
So, A is not the cousin of c.

For (2)    Q (–)
            |
      (+) A — N (+) — C
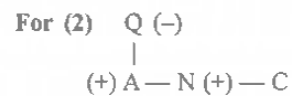
A is the brother of C, but not cousin

For (3)    Z (–)
              |
      (+) A — P (+)
              |
          (+) R — C
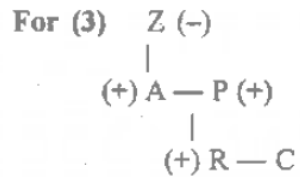
By this tree, it is clear that A is not the cousin of C. A is the uncle of c.

For (4)    (+) C — X (+)
                      |
                  Y (–) — A

C is the uncle of A, not cousin

**9.** (3);

    P (+)
      |
(+) S — N (+)
          |  father
      (+) Q — R

N should be the father of Q.

So, x will come in place of question mark.

**10.** (2);

Check for (1): X brother   Y brother Z

So, X is the brother of Z.

Check for (2):

(+)X — Y (–)
        |
        Z
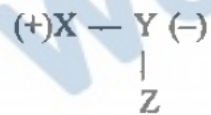
So, X is the maternal uncle of Z.

There is no need to check further.

**11.** (4);

I is not sufficient as the difference between the ages of Ravi and his father is not given.

**12.** (1);

Given: Rishi > Madhu

Ruchi > Shashi

From I: Ruchi > Shashi > Rishi > Madhu

So, Madhu is the shortest.

From II: Rishi > Ruchi

Given: Rishi > Madhu

But we cannot deduce who is the taller between Madhu and Ruchi, So. II is not sufficient.

**13.** (1);

Given: 349 – We are champions

From I: 975 – we won cup

From II: 641 – they are losers

Combining (1) and (2),

9 – we

**14.** (3); From I: UVY

On the immediate right of U is V, so I is alone sufficient.

From II: W U V

On the immediate right of U is V. so, II alone is sufficient.

**15.** (4);

From I: li na pee – come home tomorrow  ……….(I)

We cannot deduce the meaning of sa so I alone is not sufficient.

From II: pee sa ki – home and office ……….(2)

We cannot deduce the meaning of sa so II alone is not sufficient.

Even by combining (1) and (2), we cannot find the meaning of sa.

**16.** (4);

Combining $R \geq S = K > T < O \leq P$

So, I does not follow

Combining K > T < O $\leq$ P

K > T < P

We cannot compare K and P, so II does not follow.

**17.** (2);

Z $\geq$ X = Y < V < W

Z and C can't be Compare. Hence I does not follow. W > X. Hence II follows.

**18.** (3);

Given: R $\leq$ S and R = Q

Combining both, we get:

Q $\leq$ S

Ie Q < S or Q = S

So, either I or II follows.

**19.** (4);

Given: C = D $\geq$ X

= C $\geq$ X ….(1) So I does not follow.

Also, C > F  …..(2)

From (1) and (2): We cannot compare F and X.

So, II does not follow.

**20.** (1);

Given: A > C < D = R = M $\leq$ N

A > C < D $\leq$ N

C < N, So I follows

Also, A > C

And we know that C < N

Combining the above two: A > C < N

We cannot compare A and N. So, II does not follow.

**21.** (1);

All princes are brave (A) – conversion – Some brave are prince (I). This is definite. But since we are not told that some brave are not prince conclusion I follow because of can be But II does not follow because the statements hold good even when No king is a prince.

**22.** (5);

Some forest are red + No red is strong = I =E = O = Some forest are not strong. This does most rude out the possibility that some forts are strong. Hence II follows In that case, I is also a possibility.

**23.** (1);

All buses are cars + All cars are bikes = A + A = A = All buses are bikes. Hence I follows. All buses are cars (A) – conversion – Some cars are buses (I). Hence II does not follow.

**24.** (2);

The possibilities exist.

**25.** (1);

No hockey is a bat (E) – conversion- No bat is hockey (E). Hence (I) follows. But II can't be established.

**26.** (1);

C cannot finish at second because either A or E has to be the first and B has to come before C. So, C will come third or fourth.

**27.** (3);

There may be three possible orders:

A B C D E, A D B C E and A B D C E.

**28.** (3);

If B finishes third, then D will finish second. Hence, D finishes ahead of C.

**29.** (3);

If D finishes ahead of B, then D will definitely finish second.

**30.** (4);

If there is one golfer between A and B, C will finish at fourth position.

**(31 - 35):**

Note: The numbers are less than the number of words. First, the combined words, ie those that are followed by a number, are arranged in ascending order according to the number. Then rest of the words are arranged in reverse alphabetical order.

Step I. in 1 Gayle hit 37 in 7 ball not over

Step II. In 1 7 Gayle hit 37 ball not over

Step III. In 1 in 7 hit 37 Gayle ball not over

Step IV. In 1 in 7 hit 37 over Gayle ball not

Step V. in 1 in 7 hit 37 over not Gayle ball

**31.** (2)

**32.** (1)

**33.** (2)

**34.** (1)

**35.** (3)

### 3. Quantitative Aptitude

Direction (Q. 1 - 5): What value should come in place of question mark (?) in the following equations?

**1.** 7777770 ÷ 77 = ?

1) 110011    2) 101010    3) 101101    4) 111100    5) None of these

**2.** $\frac{64}{145}$ x ? + 80 x 80 = 8000

1) 2025    2) 2075    3) 2125    4) 2175    5) 2225

**3.** $\frac{3}{7}$ of $\frac{8}{11}$ of 78% of 11165 = ?

1) 2714.4    2) 2824.6    3) 2872.8    4) 2940.2    5) 2980.4

**4.** 112.85% 2680 – 113% 65% of 900 = ?

1) 871.12    2) 873.03    3) 874.6    4) 875.08    5) None of these

**5.** $(11)^{7.2} \div (121)^{3} \div (121)^{-0.9} \times 1331 = (11)^{?}$

1) 0    2) 6    3) 2.4    4) 4.2    5) None of these

Direction (Q. 6 - 10): What approximate value should come in place of question mark (?) in the following equations?

**6.** $6299 \div 15.105 + 124.79 \times 9.029 = ?$

1) 1120    2) 1280    3) 1360    4) 1440    5) 1550

**7.** 227% of $645 + \sqrt{1220} = ?$

1) 1300    2) 1400    3) 1500    4) 1600    5) 1700

**8.** $\frac{11}{17}$ of $\frac{3}{13}$ of $2680 = ?$

1) 320    2) 400    3) 560    4) 640    5) 700

**9.** $(18)^{0.790} \times (324)^{0.1049} \times 5832 \times (18)^{-1} = ?$

1) 18    2) 324    3) 5832    4) $(18)^{-2}$    5) $(18)^{-1}$

**10.** $\sqrt[3]{132650} = ?$

1) 49    2) 51    3) 53    4) 55    5) 57

Direction (Q. 11 - 15): Following table represents the number of primary school teachers and the percentage of female teachers among them in four different years.

| City ↓ | 1980 | | 1990 | | 2000 | | 2010 | |
|---|---|---|---|---|---|---|---|---|
| | Total | % F | Total | % F | Total | % F | Total | % F |
| A | 7200 | 42% | 8400 | 49% | 9750 | 40% | 11200 | 48% |
| B | 6600 | 47% | 8200 | 52% | 9200 | 37% | 10500 | 50% |
| C | 8500 | 56% | 9600 | 41% | 12800 | 42% | 13200 | 45% |
| D | 7000 | 53% | 7800 | 39% | 8500 | 46% | 9600 | 48% |
| E | 10600 | 61% | 11500 | 57% | 12400 | 54% | 13200 | 55% |
| F | 7500 | 48% | 9000 | 51% | 10600 | 55% | 11900 | 60% |
| G | 7800 | 42% | 8100 | 43% | 8700 | 51% | 9500 | 44% |

**11.** What is the total number of female teachers in the year 2010?

1) 32614    2) 33553    3) 29986    4) 29986    5) 27262

**12.** What is the difference between the total number of female teachers and the total number of male teachers in the year 1980?

1) 674    2) 676    3) 678    4) 680    5) 682

**13.** Total number of female teachers of City A in 2000 is what percentage more than the total number of female teachers of City F in the year 1980?

1) 8.33%   2) 9.35%   3) 10.38%   4) 7.33%   5) 6.38%

**14.** Total number of male teachers of City B in the year 1990 is what percentage of the total number of female teachers of City C in 1990?

1) 72%   2) 80%   3) 100%   4) 120%   5) 125%

**15.** What is the ratio of the total number of female teachers of City A in the year 2000 to the total number of female teacher of City B in the year 2010?

1) 4:7   2) 12:17   3) 13:18   4) 21:34   5) 26:35

**16.** A person lent some amount @ 12% p.a. simple interest, and after certain years the interest amounted to ?312 less than the amount lent. What is the amount that person lent?

1) ?7000   2) ?7200   3) ?7400   4) ?7600   5) ?7800

**17.** A certain amount of money deposited in a bank grows up to ?10580 in two years and up to ?12167 in three years. If the interest is compounded annually, what is the rate of interest?

1) 8% pa   2) 12% pa   3) 15% pa   4) 18% pa   5) 20% pa

**18.** In a class of 15 students, a group of 6 students has to be chosen in such a way that one particular student is always included. How many different selections can be made?

1) 90   2) 1001   3) 2002   4) 4004   5) 5005

**19.** From a pack of 52 cards, 3 cards are drawn. What is the probability that it has no Jack?

1) $\frac{1201}{5525}$   2) $\frac{4324}{5525}$   3) $\frac{16}{5525}$   4) $\frac{1}{5}$   5) None of these

**20.** The population of a city increase at the rate of 15% per annum. If the present population of the city is 32 lakh, what will be its population after three years?

1) 46.4 lakh   2) 48.668 lakh   3) 49.24 lakh   4) 45.484 lakh   5) None of these

**21.** The present ages of A, B and C are in the ratio of 2:5 :10 The present ages of B, C and D are the ratio of 4 :8 :13, what is the ratio of the present ages of A, B, C and D?

1) 2:8:10:13   2) 12:30:60:91   3) 8:20:40:65   4) 4:5:10:13   5) None of these

**22.** If 8 men or 12 women can reap a field in 35 days, how long will 5 men and 10 women take to reap the same field?

1) 15 days   2) 24 days   3) 30 days   4) 40 days   5) 42 days

**23.** 8 men and 6 boys can earn ?5880 in 7 days. 5 men and 9 boys can earn ?8820 in 12 days. How long will 4 men and 10 boys take to earn ?4200?

1)4 days    2) 5 days    3) 6 days    4) 7 days    5)8 days

**24.** A square room is surrounded by a veranda of width 4 metres. If the area of the veranda is 320 sq m then what is the area of the room?

1) 196 sqm    2) 256 sqm    3) 324 sqm    4) 400 sqm    5) 484 sqm

**25.** A man can swim 72 km upstream and 54 km downstream in 9 hours. Also, he can swim 84 km upstream and 90 km downstream in 12 hours. What is the speed of the man in still water?

1) 9 kmph    2) 12 kmph    3) 15 kmph    4) 18 kmph    5) 21 kmph

Direction (Q. 26 - 30): Following bar-graph shows the income of two companies A and B in six different years. The line graph shows the percentage profit of the two companies.
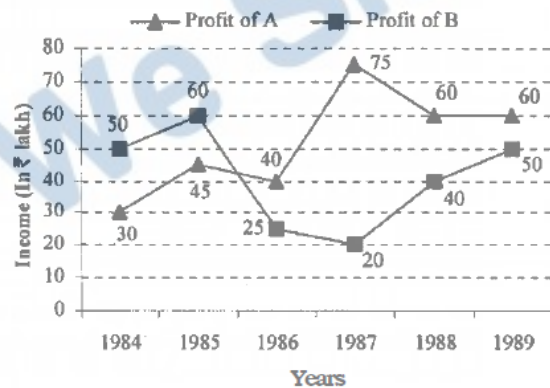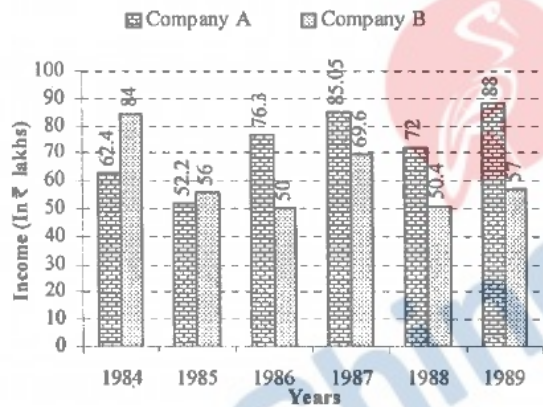




**26.** What is the total expenditure of Company A and B in the year 1984?

1) Rs. 104 lakh    2) Rs. 106 lakh    3) Rs. 108 lakh    4) Rs. 110 lakh    5) Rs. 112 lakh

**27.** What is the difference between the net profits of Company A and B in the year 1985?

1) Rs. 4.2 lakh    2) Rs. 4.4 lakh    3) Rs. 4.6 lakh    4) Rs. 4.8 lakh    5) Rs. 5.4 lakh

**28.** What is the total expenditure of Company A and B in the year 1986 and 1987?

1) Rs. 204 lakh    2) Rs. 206.4 lakh    3) Rs. 208.6 lakh    4) Rs. 212 lakh    5) None of these

**29.** What is the percentage fall in the expenditure of Company B from 1984 to 1985? (Approximate value)

1) 32.5%    2) 35%    3) 36%    4) 37.5%    5) 40%

**30.** The net profit of Company A in the year 1989 is what percentage of the net profit of Company B in year 1986?

1) 80%    2) 120%    3) 180%    4) 240%    5) 330%

Direction (Q. 31 - 35): Following bar-graph shows the production of tires by two companies A and B during the product of 1975 to 1980 and the line graph shows the % sale of these two companies.
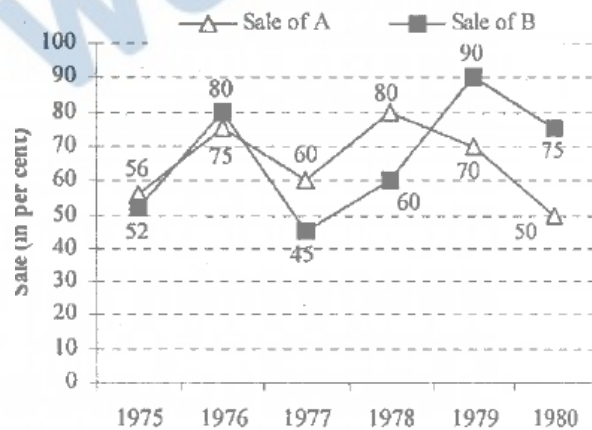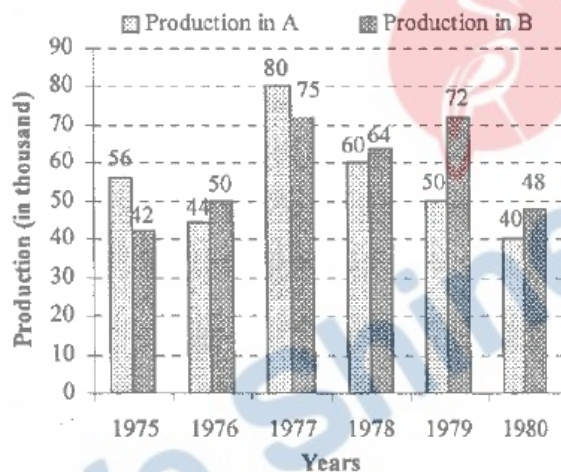


**31.** What is the total sale of Company A during the period of 1975 to 1980?

1) 211420   2) 212360   3) 213880   4) 214560   5) 215360

**32.** What is the average production of tires by Company B in the six years together?

1) 57000   2) 57500   3) 58000   4) 58500   5) 59000

**33.** The sale of Company B in the year 1980 is what percentage of the sale of Company A in the same year?

1) 120%   2) 150%   3) 180%   4) 210%   5) 240%

**34.** The sale of Company A in the year 1978 is what percentage more/less than the sale of Company B in the year 1976?

1) 10%   2) 20%   3) 25%   4) 30%   5) 40%

**35.** What is the ratio of the sale of Company A in 1977 to that of Company B in 1980?

1) 2:1   2) 3:2   3) 5:4   4) 5:4   5) 6:5

**Answers:**

**1.** (2);

$? = \dfrac{7777770}{77} = 101010$

**2.** (4);

$\dfrac{64x?}{145} = 8000 - 7040 = 960$

$? = \dfrac{960 \; x \; 145}{64} = 2175$

**3.** (1);

$? = \dfrac{3}{7} \; x \; \dfrac{8}{11} \; x \; \dfrac{78}{100} \; x \; 1165 = 2714.4$

**4.** (2);

$? = \dfrac{112.85 \; x \; 1680}{100} - \dfrac{113.65 \; x \; 90}{100}$

$= 1895.88 - 1022.85 = 873.03$

**5.** (2);

$(11)^{7.2} \div (11^2)^3 \div (11^2)^{-0.9} \; x \; (11)^3$

= $(11)^{7.2} \div (11)^6 \div (11)^{-1.8} \times (11)^3$

= $(11)^{7.2-6+1.8+3} = (11)^{12-6} = (11)^6$

∴ ? = 6

**6.** (5);

? = 6300 ÷ 15 + 125 x 9

= 420 + 1125 = 1545 = 1550

**7.** (3);

? = $\frac{227 \times 645}{100}$ + 34.92

= 1465 + 35 = 1500

**8.** (2);

? = $\frac{11 \times 3 \times 2680}{17 \times 13}$ = 400.18 = 400

**9.** (3);

$(18)^{0.790} \times (18^2)^{0.1049} \times (18)^3 \times (18)^{-1}$

= $(18)^{0.79 + 2098 + 3.1}$

= $(18)^{2.9998} = (18)^3 = 5832$

**10.** (2);

$(51)^3$ = 132651

**11.** (4);

Total No. = 11200 x 0.48 + 10500 x

0.5 + 13200 x 0.45 + 9600 x 0.48 + 13200 x 0.55 + 11900 x 0.6 + 9500 x 0.44 = 39754

**12.** (2);

Total no. of females = 27938

∴ Difference = 27938 – 27262 = 676

**13.** (1);

Female$_{F-1980}$

= 7500 x 0.48 = 3600

Female$_{A-2000}$ = 9750 x 0.4 = 3900

$\therefore$ Reqd % $= \frac{3900-3600}{3600} = 100 = 8.33\%$

**14.** (3);

Male$_{1990}$ = 8200 x 0.48 = 3936,

Female$_{1990}$ = 9600 x 0.41 = 3936

Reqd % $= \frac{3936}{3936}$ x 100 = 100%

**15.** (5);

Ratio $= \frac{9750 \, x \, 0.4}{10500 \, x \, 0.5} = \frac{3900}{5250} = \frac{26}{35}$

**16.** (5);

Let the amount be x.

$\therefore$ Interest $= \frac{x \, x \, 8 \, x \, 12}{100} = \frac{24x}{25}$

Because, x - $\frac{24x}{25} = 312$   $\therefore = 312$ x 25 = 7800

**17.** (3);

Interest on Rs. 10580 in one year

= (12167 - 10580) = 1587

$\therefore$ Rate of interest $= \frac{1587 \, x \, 100}{10580} = 15\%$

**18.** (3); One student is included in every selection.

$\therefore$ we have to select (6 - 1) = 5 student from a group of 15 – 1 = 14 students

$\therefore$ Total number of selections = 1 x $^{14}C_5$

$= \frac{14 \, x \, 13 \, x \, 12 \, x \, 11 \, x \, 10}{120} = 14$ x 13 x 11 = 2002

**19.** (2);

n(S) = $^{52}C_3 = \frac{52 \, x \, 51 \, x \, 50}{6} = 17$ x 26 x 50

n(E) = $^{48}C_3$

As a total of 4 Jacks are there in a deck of cards. So total no. of cards excluding Jacks is 52 − 4 = 8

$= \frac{48 \ x \ 47 \ x \ 46}{6} = 8 \ x \ 47 \ x \ 46$

$\therefore P(E) = \frac{8 \ x \ 46 \ x \ 47}{17 \ x \ 26 \ x \ 50} = \frac{4325}{5525}$

**20.** (2);

Population = $32 \ x \ \frac{115}{100} \ x \ \frac{115}{100} \ x \ \frac{115}{100}$

= 48.668

**21.** (3);

A : B : C = 2 : 5 : 10

Multiplying by 4, A : B : C = 8 : 20 : 40

B : C : D = 4 : 8 : 13

Multiplying by 5, B : C : D = 20 : 40 : 65

$\therefore$ A : B : C : D = 8 : 20 : 40 : 65

**22.** (2);

1 man's 1 day's work = $\frac{1}{35 \ x \ 8}$

$\therefore$ 5 men's 1 day's work = $\frac{5}{35 \ x \ 8} = \frac{1}{56}$

Simiarly,

10 women's 1 day's work = $\frac{10}{35 \ x \ 12} = \frac{1}{42}$

$\therefore$ 5 men + 10 women's 1 day's work = $\frac{1}{56} + \frac{1}{42}$

$= \frac{3+4}{168} = \frac{7}{168} = \frac{1}{24}$

$\therefore$ they will take 24 days to finish the work.

**23.** (3);

Let the man's daily earning be Rs. X and that of the boy be Rs. Y

$\therefore$ 8x + 6y = $\frac{5880}{7}$ = 840

$\therefore$ 4x + 3y = 420  ................(i)

$5x + 9y = \frac{8820}{12} = 735$

$\therefore 5x + 9y = 735$ ................(ii)

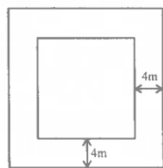$\therefore 4x + 10$ boys $= 300 + 400 = 700$

$\therefore$ No. of days $= \frac{4200}{100} = 6$ days

**24.** (2);

Let the side of the square be x meters.

$\therefore$ Area $= x^2$



Area of the veranda $= (x + 8)4 + 4x)x2 = 320$

$4x + 32 + 4x = 1960$   $\therefore 8x = 160 - 32 = 128$

$\therefore x = \frac{128}{8} = 16m$

$\therefore$ Area $= (16)^2 = 256$ sq m

**25.** (3);

Let the speed of the man upstream be x kmph and that downstream be y kmph

$\therefore \frac{72}{x} + \frac{54}{y} = 9$   $\therefore \frac{8}{x} + \frac{6}{y} = 1$

$\therefore 8u + 6v = 1$ .................(i)

Where $u = \frac{1}{x}$ and $V = \frac{1}{y}$

$\frac{84}{x} + \frac{90}{y} = 12$       $\therefore \frac{14}{x} + \frac{15}{y} = 2$

$\therefore 14u + 15v = 2$   ....................(ii)

From equations (i) and (iii)

$U = \frac{1}{12}$ and $v = \frac{1}{18}$       $\therefore x = 12, y = 18$

$\therefore$ speed of the man in still water

$= \frac{12+18}{2}$ kmph = 15 kmph

**26.** (1);

$E_A = 62.4 \times \frac{100}{130} = 48$,

$E_B = 84 \times \frac{100}{150} = 56$

∴ Total = 48 + 56 = Rs. 104 lakh

**27.** (4);

$E_A = 52.2 \times \frac{100}{145} = 36$

∴ $P_A = 52.2 - 36 = $ Rs. 16.2 lakh

$E_B = 56 \times \frac{100}{160} = 35$ lakh

∴ $P_B = 56 - 35 = 21$ lakh

∴ Difference = 21 − 16.2 = Rs. 4.8 lakh

**28.** (5);

$E_{A-1986} = 76.3 \times \frac{100}{140} = $ Rs. 54.5 lakh

$E_{A-1987} = 85.05 \times \frac{100}{175} = $ Rs. 48.6 lakh

$E_{B-1986} = 69.6 \times \frac{100}{120} = $ Rs. 58 lakh

∴ Total = 54.5 + 48.6 + 40 + 58

= Rs. 201.1 lakh

**29.** (4);

$E_{1984} = 84 \times \frac{100}{150} = $ Rs. 56 lakh

$E_{1985} = 56 \times \frac{100}{160} = $ Rs. 35 lakh

∴ % fall $= \frac{56-35}{56} \times 100 = \frac{2100}{56} = 37.5\%$

**30.** (5);

$E_A = 88 \times \frac{100}{160} = 55$ lakh

∴ $P_A = 88 - 55 =$ Rs. 33 lakh

$E_B = 50 \times \frac{100}{125} =$ Rs. 40 lakh

∴ $P_B = 50 - 40 =$ Rs. 10 lakh

∴ Reqd % $= \frac{33}{10} \times 100 = 330\%$

**31.** (5);

Total sale = 56 x 0.56 x 44 x 0.75 + 80 x 0.6 + 60 x 0.8 + 50 x 0.7 + 40 x 0.5

= 31.36 + 33 + 48 + 48 + 35 + 20

= 215.36 thousand = 215360

**32.** (4);

Avg = $\frac{42+50+75+64+72+48}{6}$

$= \frac{351}{6} = 58.5$ thousand

**33.** (3);

$Sale_A = 40 \times \frac{50}{100} = 20$ thousand

$Sale_B = 48 \times \frac{75}{100} = 36$ thousand

∴ % $= \frac{3600}{20} = 180\%$

**34.** (2);

$Sale_A = 60 \times \frac{80}{100} = 48$ thousand

$Sale_B = 50 \times \frac{80}{100} = 40$ thousand

∴ Reqd % $= \frac{48-40}{40} \times 100 = 20\%$

**35.** (3);

$Sale_A = 80 \times \frac{60}{100} = 48$ thousand

$Sale_B = 48 \times \frac{78}{100} = 36$ thousand

∴ Ratio $= \frac{48}{36} = \frac{4}{3}$