

**PRATIYOGITA  
SAHITYA**

# **NTSE**

Conducted by **NCERT**

National Talent Search Examination

# **SOLVED PAPERS**

**For Class X**

► Solved Papers of Previous Examinations  
(With Explanatory Solutions)

Conducted by  
NCERT

National Talent Search Examination  
(NTSE)

(For Class X)

**SOLVED PAPERS**  
**(2019-2010)**

**Salient Features**

- Solved Papers of Previous Examinations  
(with Explanatory Solutions)

By  
Editorial Board



**Sahitya Bhawan**<sup>®</sup>

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# Important Information About Examination

## • SELECTION PROCEDURE

Identification of talent comprises two-stage selection process. While the individual State/UT conducts the first stage selection, the second stage selection at the national level is carried out by the NCERT.

## STATE LEVEL EXAMINATION

Each State/UT conducts its own examination. They have the autonomy to lay down their own norms for the purpose of determining the eligibility of the candidates. This examination is primarily used to recommend a given number of candidates for the second level test to be conducted by the NCERT. This number is based on the enrolment of students at Classes IX and X in different States/UTs. The candidates are to be recommended on the basis of the merit in the written examination conducted by the States/UTs. The details of the number of candidates for different States/UTs as applicable are notified separately.

The State level screening examination is conducted in all State/UTs on first Sunday of November except in Nagaland, Andaman and Nicobar Island, Meghalaya and Mizoram where it will be conducted on first Saturday of November every year until and unless some special circumstances occur.

The addresses of the Liaison Officers of each State/UT are given in Appendix with whom information about state level examination may be sought.

## • ELIGIBILITY

All students studying in Class X in any type of recognized school including Kendriya Vidyalaya, Navodaya Vidyalaya, and Sainik School etc. will be eligible to appear at the State Level Examination form the State in which the school is located. However, no domicile restriction shall be imposed. The state may impose any other eligibility condition for appearing in the screening examination like any qualifying percentage of marks in the previous annual examination etc. Students registered under Open and Distance Learning (ODL) are also eligible for scholarship provided the students are below the age of 18 years (as on 1<sup>st</sup> July of that particular year) the students is not employed and they are appearing in class X for the first time.

## • MEDIUM OF EXAMINATION

The medium of the test shall be as announced by the State/UT.

## • EXAMINATION

State level examination may have two parts : Part-I Mental Ability Test (MAT) and Part-II Scholastic Aptitude Test (SAT) for nominating the required number of candidates for the second level test to be conducted by the NCERT.

The scheme of testing is given below—

Examination Date	Paper	Test	Timings	Number of Questions	Number of Marks	Time Duration	Qualifying	Selection Criteria
1st Sunday of November (In all the States/UTs of the country except Nagaland, Mizoram, Meghalaya and Andaman & Nicobar exam where will be held on 1st Saturday November month every year)	Paper-I	Mental Ability Test (MAT)	09.30 am to 11.30 am (All candidates except visually Challenged Candidates) 09.30 and to 12.00 noon (Only visually Challenged Candidates)	100	100	120 Minutes	32% SC, ST and PWD and 40% for Other (General & OBC)	<ul style="list-style-type: none"> <li>Only candidates qualifying in both the papers separately will be considered for merit.</li> <li>Selection of the awardees will be made on the basis of total Marks scored in MAT &amp; SAT based on merit.</li> <li>There will be No Negative Marking</li> </ul>
	Paper-II	Scholastic Aptitude Test (SAT)	13.30 pm to 15.30 pm (All candidates except visually Challenged Candidates) 13.30 pm to 16.00 pm (Only visually Challenged Candidates)	100 (Science-40, Mathematics-20, Social Science-40)	100	120 Minutes		

\* If there is any change in pattern for Stage-II examination then the same will be communicated later on through NCERT website [www.ncert.nic.in](http://www.ncert.nic.in). Candidates are advised to keep track of updates on NCERT website.

## ● RESULTS

The State/Union Territory will prepare a merit list of the candidates ensuring the minimum qualifying marks in both the tests separately. These marks are 40 per cent in the case of General and OBC category candidates and 32 per cent in the case of SC/ST/physically challenged candidates.

The result of State Level Talent Search examination is declared in months of January/February by the States/UTs themselves. This examination is used only to recommend the candidates for second level NTS examination conducted by the NCERT. The marks of the State Level Examination are not added to the National Level Examination for award of scholarship. No correspondence will be entertained by the NCERT with regard to first level examination conducted by the State/UT. The candidate having any query/complaint/clarification with regard to the State Level Examination shall have to correspond only with the state examination agencies.

## NATIONAL LEVEL EXAMINATION

There is no fee of any kind for appearing in the National Level Examination.

## ● ELIGIBILITY

The National Talent Search Examination is open for students of Indian nationality whether they study in India or abroad at Class X level.

## ● CANDIDATES STUDYING IN INDIA

Only the candidates selected by the States/UTs on the basis of their screening examination shall be eligible to appear in the National level examination to be conducted by the NCERT on the **Second Sunday of May each year** (unless otherwise notified). The NCERT will convey the roll number, the venue, the date and time for the national level examination to all such candidates directly through its portal **www.ncert@nic.in**.

## ● CANDIDATES STUDYING ABROAD

Students of Indian nationality studying abroad at the Class X level may also compete for Talent Search Award under the following conditions :

- (i) The Indian students studying abroad in Class X or equivalent class shall be exempted from the first level-screening test and shall be permitted to appear directly at the second level examination conducted by the NCERT.
- (ii) A candidate shall be eligible to appear in the second level NTS examination only if he or she has obtained at least 60 per cent marks (in aggregate) at the previous annual examination.
- (iii) A candidate will have to appear in the NTS examination at a centre in India at her/his own cost.
- (iv) A candidate desiring to appear in the NTS examination may request through the Head of the Institution where he or she is studying along with an attested copy (by the Head of the Institution) of the mark sheet of Class IX. The request should reach the Head, Department of Educational Survey Division, NCERT, New Delhi-110016 latest by 31st December of the concerned year.
- (v) The Council shall allot roll numbers to the eligible candidates and inform them about the date, time and the venue of examination along with other relevant instructions.
- (vi) No request for change of Centre shall be entertained.
- (vii) If a candidate is selected, the scholarship shall be paid for pursuing studies in India only.
- (viii) Change of center will be permitted in genuine cases and as per instructions issued from NCERT.

## ● SYLLABUS

There is no prescribed syllabus for the NTS examination. However, the standard of items shall be conforming to the level of Classes IX and X. A separate booklet called 'Learn about the Test' containing sample items for both the Tests-MAT and SAT is available in print as well as on the NCERT website **www.ncert.nic.in**.

## ● SCHEME OF TESTING

The scheme of testing is given below—

Examination Date	Paper	Test	Timings	Number of Questions	Number of Marks	Time Duration	Qualifying	Selection Criteria
<b>2nd Sunday of May every year</b> (In all the States/UTs of the country)	Paper-I	<b>Mental Ability Test (MAT)</b>	<b>09.30 am to 11.30 am</b> (All candidates except visually Challenged Candidates)	100	100	120 Minutes	32% marks SC, ST and PWD and 40% for Other (General & OBC) Category separately in both papers	<ul style="list-style-type: none"> <li>● <b>There will be No Negative Marking</b></li> <li>● Only candidates qualifying in both the papers separately will be considered for merit.</li> <li>● Selection of the awardees will be made on the basis of total Marks scored in MAT &amp; SAT based on merit.</li> </ul>
	Paper-II	<b>Scholastic Aptitude Test (SAT)</b>	<b>09.30 am to 12.00 noon</b> (only visually Challenged Candidates) <b>13.30 pm to 15.30 pm</b> (All candidates except visually Challenged Candidates) <b>13.30 pm to 16.00 pm</b> (Only visually challenged candidates)	100 (Science-40, Mathematics-20, Social Science-40)	100	120 Minutes		

\* If there is any change in pattern for Stage-II examination then the same will be communicated later on through NCERT website [www.ncert.nic.in](http://www.ncert.nic.in). Candidates are advised to keep track of updates on NCERT website.

## ● WRITTEN EXAMINATION

The written examination shall consist of two paper; Paper-I Mental Ability Test (MAT) and Paper-II Scholastic Aptitude Test (SAT). Both the tests will be administered on the same day.

### ● MENTAL ABILITY TEST

There shall be 100 multiple-choice type items, with four alternatives. Each item will carry one mark. Candidates are required to answer the items on a separate OMR sheet as per instructions given in the test booklet and on the OMR sheet.

### ● SCHOLASTIC APTITUDE TEST

The Scholastic Aptitude Test will consist of 100 multiple-choice items of one mark each. Each item shall have four alternatives, out of which only one will be the correct answer. There shall be 40 items from Science, 40 from Social Science and 20 from Mathematics, Candidates are required to answer the items on a separate OMR sheet to be provided at the examination centre as per instructions.

**Important Note :** Students are allowed to take away question booklets of both the tests (Mental Ability Test and Scholastic Aptitude Test) after the examination.

## ● MEDIUM

The tests will be available in the following languages: Asamiya, Bangla, English, Gujarati, Hindi, Kannada, Marathi, Malayalam, Odia, Punjabi, Tamil, Telugu and Urdu. The candidate has to mention his option regarding the language in which he/she want to take the test in the application form. Accordingly, the question booklet in that language shall be made available to the candidate at the centre. After exercising this option, no request for the change of medium will be entertained.

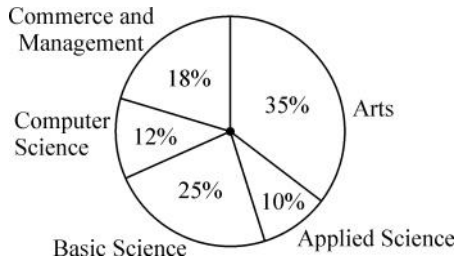


NATIONAL TALENT SEARCH EXAMINATION, 2019  
(STAGE II : NATIONAL LEVEL)

# SOLVED PAPER

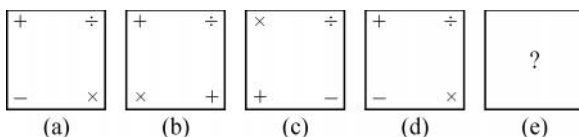
## PAPER I : MENTAL ABILITY TEST (MAT)

1. The given pie-diagram shows the streams opted by students at senior-secondary level.

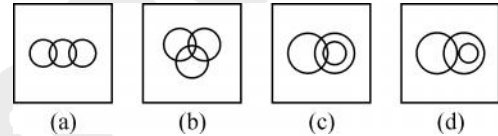


If sum of the angles for the students who opted different streams is  $144^\circ$ , then the streams are .....

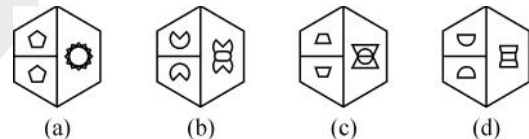
- (A) Arts, Applied Science  
(B) Basic Science, Computer Science  
(C) Basic Science, Commerce and Management  
(D) Applied Science, Computer Science, Commerce and Management
2. Four relation have been given as alternatives (p), (q), (r), (s) out of which only one becomes acceptable if the signs, + and  $\div$  and the numbers, 4 and 5 are mutually interchanged. Identify that relation.
- (p)  $24 \div 8 \times 4 = 20 \div 5$   
(q)  $20 \div 4 \times 16 \div 5 = 75$   
(r)  $3 \times 24 \div 5 = 16 \div 4$   
(s)  $20 \div 5 - 6 = 3 \times 30 \div 4$
- (A) (p) (B) (q)  
(C) (r) (D) (s)
3. There are 20 steps to go to the first floor of a building from the ground floor.  
A child starts climbing up from the first step of the ground level. Mother starts coming down from the fourth step from the floor level of the first floor.  
If both have started at the same time with same speed, at which step would they meet counting from the first step from the floor level of the first floor?
- (A) 9 (B) 10  
(C) 11 (D) 12
4. The following question consists of four problem figures marked as A, B, C and D. Select a figures in place of '?' for E which will continue the series established by the four problem figures, A, B, C, D.



5. Which one of the following Venn diagrams represents the relation among men, doctors and patients in a hospital?



- (A) (a) (B) (b)  
(C) (c) (D) (d)
6. Observe the figure given below :



The odd one out from the given figure is .....

- (A) (a) (B) (b)  
(C) (c) (D) (d)
7. A river flows along the East-West direction. On a particular day in the morning Kisku was seen at a place 'A' located on the northern side of the river and on the same evening he was seen at a place 'B' located on the southern side of the river.  
Following are the comments made by four friends. Paulomi, Mimeo, Sabeena and Grayson.
- Paulomi said, Kisku must have crossed the river only once.
  - Sabeena said, Kisku might have crossed the river four times.
  - Mimeo said, he might have crossed it five times.
  - Grayson said, he might have crossed it any number of times.
- Choose the correct alternative from the following.
- (A) Only I is correct  
(B) Only II is correct  
(C) I or III is correct  
(D) Both I and II are correct

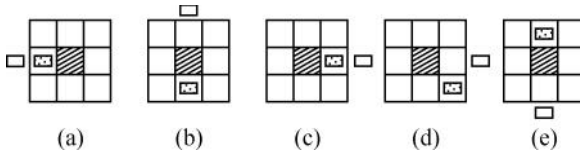
**Directions (8-9) :** Read the information carefully and answer the questions given below.

In a town of 1000 people, 570 read Hindi newspaper, 424 read English newspaper and 254 read Punjabi



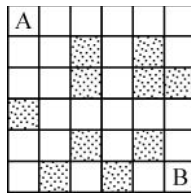
newspaper. 40 read Hindi and Punjabi newspaper; 58 read Hindi and English newspaper and 70 read Punjabi and English newspaper. 100 read no newspaper.

8. How many people read only one newspaper?  
 (A) 570 (B) 642  
 (C) 914 (D) 968
9. How many people read all the three newspaper?  
 (A) 40 (B) 58  
 (C) 70 (D) 90
10. Complete the given letter analogy.  
 LTFQIW : YGSJVD :: DOIYKV : ?  
 (A) QBVIXL (B) WLRBCI  
 (C) QLVBXE (D) QBVLXJ
11. Study the figure given below :



Find which figure is to be removed, starting from A, so that all fit into a pattern.

- (A) (b) (B) (c)  
 (C) (d) (D) (e)
12. What is the minimum number of un-shaded boxes to be crossed for covering the shortest path from 'A' to 'B' (both exclusive) without retracting the path and without diagonal movements?



- (A) 8 (B) 9  
 (C) 10 (D) 11

**Directions (13-17) :** In the following questions, there are statements followed by conclusions. Choose the conclusions(s) which must logically follows(s) from the given statements :

**13. Statements :**

- (a) Some candidates are students.  
 (b) All children are citizens.  
 (c) All citizens are candidates.

**Conclusions :**

- I. Some citizens are students.  
 II. Some candidates are children.  
 III. All children are candidates.  
 IV. No child is student.

- (A) I and II (B) II and III  
 (C) III and IV (D) I, II and III

**14. Statements :**

- (a) Some students are smart-working.  
 (b) All intelligent are smart-working.  
 (c) All the teachers are students.

**Conclusions :**

- I. Some students are intelligent.

II. No teacher is smart-working.

III. Some intelligent are students.

- (A) Either I or II (B) I and II  
 (C) None of I, II and III (D) I and III

**15. Statements :**

- (a) Some students are orators.  
 (b) All orators are goalkeepers.  
 (c) Some goalkeepers are honest.

**Conclusions :**

- I. Some students are honest.  
 II. Some goalkeepers are students.  
 (A) Only Conclusion I follows  
 (B) Only Conclusion II follows  
 (C) Both Conclusions I and II follow  
 (D) Neither conclusion I nor II follows

**16. Statements :**

- (a) Some men are women.  
 (b) All women are teachers.  
 (c) Some teachers are doctors.

**Conclusions :**

- I. Some doctors are women.  
 II. Some teachers are women.  
 III. Some teachers are men.  
 IV. Some doctors are men.  
 (A) I and II (B) I and IV  
 (C) II and III (D) III and IV

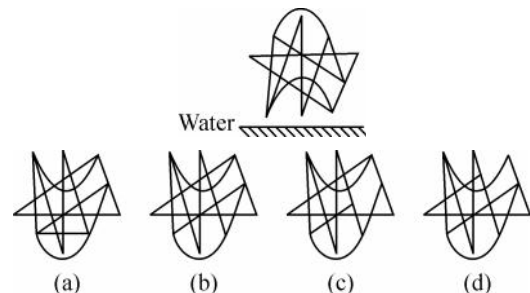
**17. Statements :**

- (a) Some grandmothers are mothers.  
 (b) Some mothers are daughters.  
 (c) All the daughters are married women.

**Conclusions :**

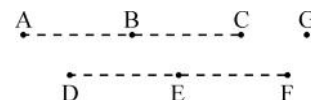
- I. Some married women are mothers.  
 II. Some daughters are grandmothers.  
 III. No daughter is grandmother.  
 IV. Some mothers are grandmothers.  
 (A) I and II (B) II and III  
 (C) II and IV (D) I and IV

18. Find the correct water image for the following problem figure choosing from the alternatives :



- (A) (a) (B) (b)  
 (C) (c) (D) (d)

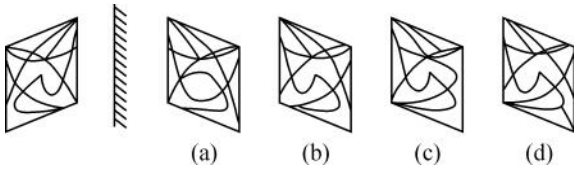
19. Observe the given figure below :



Based on the figure how many maximum numbers of triangles can be formed with the seven points A, B, C, D, E, F and G?

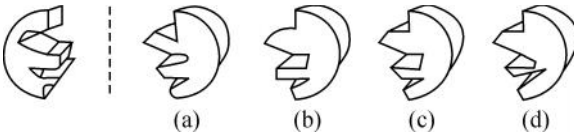
- (A) 21 (B) 24 (C) 33 (D) 36

20. Find the correct mirror image for the following problem figure from the alternatives.



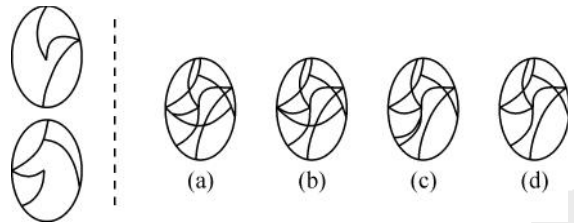
- (A) (a) (B) (b)  
(C) (c) (D) (d)

21. A circular disc is cut into two parts. One of the part is given as the question figure. Which is the other part? Select from the options.



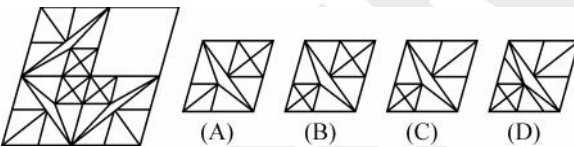
- (A) (a) (B) (b)  
(C) (c) (D) (d)

22. Two figures on transparent sheets are given on the left side. When the upper figure is exactly placed on the lower figure, find from the option figures how the resultant looks like.



- (A) (a) (B) (b)  
(C) (c) (D) (d)

23. Find the missing part of the given figure from the alternatives which completes the pattern.



- (A) (a) (B) (b)  
(C) (c) (D) (d)

**Directions (24-26) :** Read the information carefully and answer the questions given below :

Five students Ujith, Mahi, Rizan, Sahir and Amelia appeared for an examination in English and Mathematics.

- I. Sahir scored more marks than Amelia in Mathematics but scored less in English than Ujith and Mahi.
- II. In Mathematics Rizan scored more marks than Amelia but less than what Mahi has scored.
- III. Amelia scored more than Rizan in English and Rizan scored more than Mahi in English.
- IV. Ujith scored more than Mahi in Mathematics but less than Rizan in English.
- V. Sahir scored less than Mahi in Mathematics.

24. Which of the following is necessarily correct?

- (A) Rizan scored more than Sahir in Mathematics
- (B) Ujith scored more than Sahir both in Mathematics and English
- (C) Sahir scored more than Ujith in Mathematics
- (D) Rizan scored more than Ujith both in English and Mathematics.

25. The least scorer in Mathematics and top scorer in English are respectively :

- (A) Sahir and Ujith
- (B) Amelia and Amelia
- (C) Ujith and Sahir
- (D) Ujith and Ujith

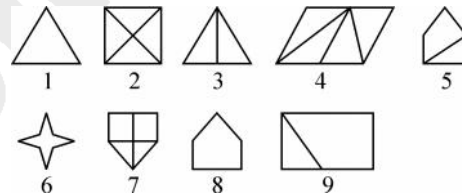
26. Which of the following cannot be determined?

- (A) Amelia scored more than Mahi in English.
- (B) Mahi scored more than Amelia in Mathematics.
- (C) Sahir scored less than Mahi both in Mathematics and English.
- (D) Ujith scored less than Mahi in English.

27. The third day before 1st January, 2019 was Saturday. Which day will the fourth day of March 2020 be?

- (A) Friday (B) Saturday
- (C) Wednesday (D) Thursday

28. Observe the figures given below :



Based on the above figures identify the correct group of categorisation?

- (A) 1, 3, 6; 2, 4, 9; 5, 7, 8
- (B) 1, 2, 3; 4, 5, 8; 6, 7, 9
- (C) 1, 6, 8; 3, 5, 9; 2, 4, 7
- (D) 1, 3, 6; 2, 5, 7; 4, 8, 9

29. Raju invited friend George for a dinner at his house. When George asked for the direction of Raju's house, Raju gave him the following instruction :

Proceed 140 m South from your house then walk 200 m to East. Then turn to North and walk 100 m. After that, walk 160 m to West.

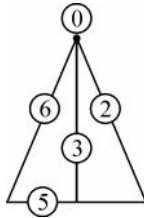
What is the shortest distance between the two houses and the direction to Raju's house from George's house?

- (A)  $40\sqrt{2}$  m and North-West
- (B)  $40\sqrt{2}$  and South-East
- (C) 80 m and South-East
- (D) 80 m and North-West

30. In a code language if 'APPEAL' is coded as '256572' and 'PLAY' is coded as '7259' then in the same language 'PEARL' will be coded as (each number code stands for unique alphabet).....

- (A) 25768 (B) 25387
- (C) 67522 (D) 25679

31. Study the figure given below representing a particular number in coded manner.



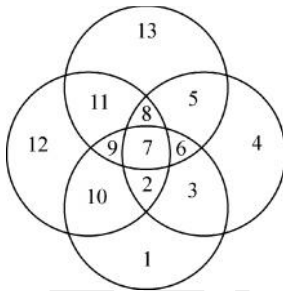
For example, the number 6825 coded by the following symbols



Based on the above information find the number coded for the following symbols.

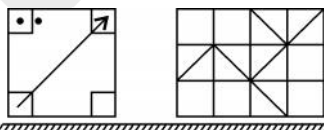


- (A) 63205 (B) 11309  
(C) 11523 (D) 65230
32. Five friends decided to play a game of badminton. Each of the five plays against every other friend. The winner gets two points for each game he or she wins and the loser gets zero. Then, which of the following cannot represent the scores of five friends?
- (A) 4, 4, 4, 4, 4 (B) 6, 4, 4, 4, 2  
(C) 8, 8, 2, 2, 0 (D) 6, 6, 4, 2, 2
33. Study the given figure and answer the following question :



Let  $x$  denote sum of numbers present in at least 2 circles and  $y$  denote sum of numbers present in exactly 3 circles. Then  $x - y = \dots$

- (A) 11 (B) 25 (C) 36 (D) 61
34. Choose the correct mirror image of the following figure. It the mirror is placed as shown :

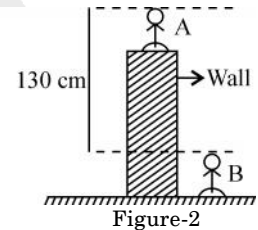
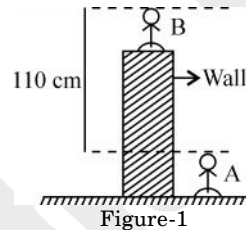


- (A) (B)   
(C) (D)

35. The figure given below is a prepared by some sticks and provides an equation that is incorrect. How many minimum numbers of sticks must be removed from the left hand side to make it a correct equation?

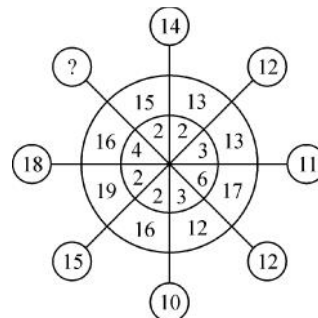
$$86 + 36 + 98 = 100$$

- (A) 1 (B) 2  
(C) 3 (D) 4
36. If 63578 is to 1415, 56732 is to 185, and 34124 is to 86, then, 72648 is to ?
- (A) 1215 (B) 1415  
(C) 1512 (D) 1514
37. Two friends Mr. A and B stand according to figure 1. The two friends then interchange their positions as given in figure 2.



The height of the wall from the ground is .....

- (A) 115 cm (B) 120 cm  
(C) 127.5 cm (D) 130 cm
38. In a certain coding scheme, consonants and vowels are coded differently as illustrated below :
- C is coded as 6.  
Z is coded as 52.  
E is coded as 9.  
O is coded as 29.
- Then find the sum of numerals in the coded version of FAITH.
- (A) 84 (B) 85 (C) 86 (D) 87
39. In a class 20% of students are below 14 yrs of age. Out of the remaining students 10% are of the age 14-15 yrs and ratio of students who are between 15-16 yrs of age to student above 16 yrs of age is 3 : 2. If the number of students who are above 16 yrs is 72, what is the total number of students in the class?
- (A) 200 (B) 250  
(C) 300 (D) 400
40. What number should replace the question mark?



- (A) 15 (B) 14 (C) 13 (D) 10

**Directions (41-45) :** Read the information carefully and answer the questions given below :

A, B, C, D, E, F and G are seven teachers. Each one teaches only one and different language from among Konkani, Hindi, Malayalam, English, Manipuri, Tamil and Kannada on different days of a week. C teaches Malayalam on Friday. B teaches Konkani on the next day of the day on which the concerned teacher teaches English. F teaches on Thursday but neither teaches Hindi nor English. D teaches Tamil on the previous day on which day F teachers. A teachers Kannada on Tuesday. G teaches on the next day of the day on which the concerned teacher teaches Malayalam. E does not teach English.

41. Which language does G teach?  
(A) Hindi (B) English  
(C) Kannada (D) Konkani
42. On which day D teaches?  
(A) Saturday (B) Tuesday  
(C) Wednesday (D) Thursday
43. Which subject does E teach?  
(A) Tamil (B) Hindi  
(C) Manipuri (D) Malayalam
44. On which day B teaches?  
(A) Monday (B) Friday  
(C) Wednesday (D) Sunday
45. Which language does F teach?  
(A) Manipuri (B) Kannada  
(C) Tamil (D) English
46. One morning at 8 AM Navneet and Ravneet were standing on a lawn with their back towards each other at the distance of 100 m. Navneet's shadow fell exactly towards his left hand side. After 15 min, Ravneet turns  $135^\circ$  anti-clockwise. Which direction Ravneet is facing now?  
(A) North-East (B) North-West  
(C) East (D) South-East
47. Find the missing number.  
2, 3, 7, ....., 2112  
(A) 36 (B) 45 (C) 46 (D) 49
48. In a code BH = 16, DO = 60 and TA = 20, then the code for BAT = ?  
(A) 20 (B) 30 (C) 40 (D) 60
49. A cube is coloured on all the six faces with six different colours-black, brown, green, red, yellow and blue. Red face is opposite to the black face. Green face is between red and black faces. Blue face is adjacent to yellow face. Brown face is adjacent to blue face. Red face is in the bottom. Which of the following are adjacent to green?  
(A) Black, yellow, brown, red  
(B) Blue, black, red, yellow  
(C) Red, black, blue, yellow  
(D) Yellow, blue, black, red
50. A watch gains 10 seconds in 3 min. It was set right at 9 A.M. In the evening of the same day, when the watch indicates half past 6'O clock, the true time is :  
(A) 5:30:00 PM (B) 5:48:10 PM  
(C) 5:58:20 PM (D) 6:08:20 PM

51. Given  $x$  is real and that

(a)  $x^2 = 49$

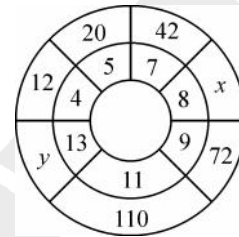
(b)  $x^3 = 343$

Examine the given alternatives in respect of arriving at the Conclusion;  $x = 7$  and find which is valid :

- I. Only A is sufficient to answer the question
- II. Only B is sufficient to answer the question
- III. Either A or B alone is sufficient to answer the question
- IV. Both A and B together are sufficient to answer the question

- (A) I (B) II  
(C) III (D) IV

52. Find the values of 'x' and 'y' from the figure given below :

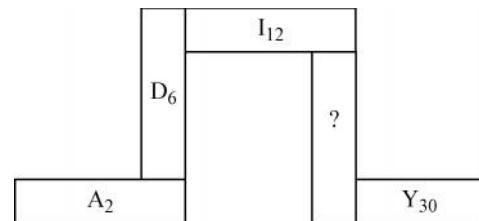


- (A) 65, 150 (B) 46, 125  
(C) 56, 156 (D) 56, 165

53. In a certain code 'COUNTRY' is written as 'ZSUOVPD'. How is 'TEACHER' written in the same code?

- (A) SUTIFED (B) REHCAET  
(C) QDGBDS (D) SFIDBFU

54. Find the missing term "?" in the given figure.



- (A)  $N_{10}$  (B)  $P_{20}$   
(C)  $O_{24}$  (D)  $Q_{18}$

55. If,  $a > b$ ,  $a > 0$ , and  $b \neq 0$ , then which of the following statements is always true?

- (A)  $a \times b > 0$  (B)  $a \times b < 0$   
(C)  $a \times b$  is underfined (D)  $a \times b^2 > 0$

56. In certain coded language

'way to win' is written as AAaa aaaa AAAa,

'Go to Walk' is written as Aaaa aaaa AAAA,

'Get up early' is written as AaAa AaaA aaAA.

Then how can 'Always go to morning walk early' be written in that coded language?

- (A) aaAA Aaaa aaaa aaaA AAaa aAAA  
(B) aaAA Aaaa aaaa aaaA AAAA AaAA  
(C) aaAA AaAa aaaa aaaA aaAA AAAa  
(D) aaaA AaAa aaaa aaAA AAAA aaAA

57. If + means  $\times$ ;  $\div$  means  $-$ ;  $-$  means  $+$ ; and  $\times$  means  $\div$ , then  $2 + 12 \times 4 - 6 \div 6$  is equal to .....

- (A) 0 (B) 6  
(C) 12 (D) 49

58. In the given equation, which two numbers in the expression on the left hand side will be interchanged to form a correct equation?

$$5 + 4 \times 8 \div 12 - 3 = 3$$

- (A) (3, 5) (B) (4, 12)  
(C) (3, 4) (D) (8, 5)
59. If  $a, b, c, d$  and  $e$  are positive numbers, and it is given that :

$$a + b = c + d, b + d = 2a$$

$$d + e > a + b \text{ and } c + d > a + e$$

then, which of the following statement is true?

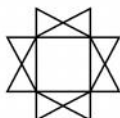
- (A)  $d > a > b > e > c$   
(B)  $d > b > e > a > c$   
(C)  $a > b > c > d > e$   
(D)  $a > d > b > e > c$
60. Kashvi facing towards rising sun turned to her left and walks for 60m. She then turned to West and walked for 15m. Then she turned towards left at an angle of  $45^\circ$  and reached 95 m from her original position. How much total distance did she travel?  
(A) 95 m (B) 115 m  
(C) 155 m (D) 175 m
61. Five friends P, Q, R, S and T read a newspaper. The one who reads first gives it to R. The one who reads last had taken it from P. T was neither the first nor the last one to read. There were two readers between Q and P. Who reads the newspaper last?  
(A) P (B) Q  
(C) R (D) S
62. A clock shows 05:45. A plane mirror is kept on the right of the clock, with its plane perpendicular to the face of the clock. What time will be shown by the mirror image?  
(A) 06:45 (B) 05:15  
(C) 06:15 (D) 07:15
63. In a certain code language "Kolkata is cultural hub of India" is coded as " $\alpha 2463\beta$ " and 'Mumbai is financial hub of India' is coded as " $\gamma 3472\beta$ ". Then in the same language "India is hub of democracy" may be coded as :  
(A)  $\alpha 2 4 3 9$  (B)  $2 4 3 \gamma 7$   
(C)  $\beta 3 2 4 9$  (D)  $3 2 \beta 4 7$
64. Which letter is midway between 13th letter from the left and the 4th letter from the right in the sequence given below?  
USBEYFHKOPRAWCGJMQDIVLNTXZ

- (A) O (B) Q  
(C) P (D) M

65. Which of the following figure(s) can not be drawn without either lifting the pen or re-tracing any line?



(a)



(b)



(c)



(d)

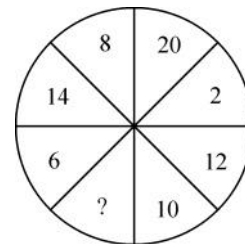
- (A) Only (a) (B) Both (a) and (b)  
(C) Only (c) (D) Both (c) and (d)

66. Find the missing values in place of the question marks in the given pattern.

1	X	5	?	34
	1	3	8	21
Y	2	U	?	R

- (A)  $\frac{1}{13}$  (B)  $\frac{N}{10}$  (C)  $\frac{M}{13}$  (D)  $\frac{Z}{18}$

67. What will be the missing number in the given series?  
1332, 732, 348, ....., 36, 12  
(A) 32 (B) 132 (C) 148 (D) 216
68. What will be the missing term '?' in the given series?  
AK, FP ?, PZ, UE, ZJ  
(A) KU (B) JT  
(C) JU (D) KV
69. In a family of four members there is father, mother, son and daughter. When sorted according to decreasing order of their ages, the order is father, mother son and daughter. The difference between the age of father and mother is 5 yr. The difference between total age of male members and female members is 15 yr. Also the total age of children is 20 yr, then the age of the son is .....  
(A) 10 yr (B) 15 yr  
(C) 20 yr (D) 25 yr
70. If the ninth day of a month is four day earlier than Thursday, then what day will it be on the twenty third day of the month?  
(A) Monday (B) Wednesday  
(C) Friday (D) Sunday
71. Which number will replace the question mark (?) in the given figure?



- (A) 4 (B) 16  
(C) 18 (D) 22

72. Find the missing value '?' in the following series.  
13, 34, 74, ?, 290

- (A) 168 (B) 170  
(C) 172 (D) 174

73. What number comes in place of question mark (?) in the given figure?

		5	4	3		
	6	4	7	2	2	
7	2	1	?	3	4	1
	6	3	9	5	4	
		9	6	3		

- (A) 9 (B) 8  
(C) 7 (D) 6

74. The following figures represent information given against them.

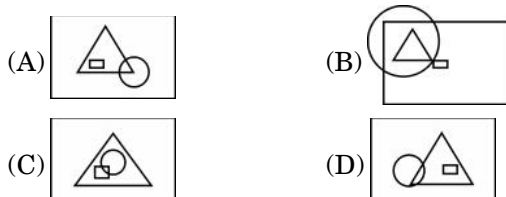
□ Total number of students who applied for Board Examination.

△ Total number of students who actually appeared at Board Examination.

○ Total number of urban students who appeared at Board Examination.

□ Total number of students who qualified at Board Examination.

Based on the above information which of the following figures represents the above facts?



75. Complete the following series.

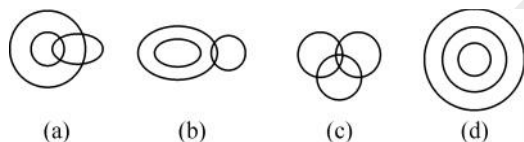
1, - 8, 81, ?, 15625

- (A) - 1022 (B) - 1024  
(C) - 4094 (D) - 4096

76. Yaibiren is standing 4 m East of Rajib, who is 1 m North of Achira. If Sahibah is standing 3 m South of Achira, then in which direction of Yaibiren is Sahibah?

- (A) North-East (B) North-West  
(C) South-East (D) South-West

77. Which of the following diagram indicates the best relationship among men, fathers and teachers?



- (A) (a) (B) (b)  
(C) (c) (D) (d)

78. Ishan wishes Irfan 'Good Morning' when the hour hand of a (measured clockwise) clock is positioned between 9 and 10. The angle between the two hands is  $145^\circ$ . The time shown by the clock is :

- (A) 9 : 08 AM (B) 9 : 10 AM  
(C) 9 : 12 AM (D) 9 : 15 AM

79. If '15 + 10 means 5'; '6 × 3 means 9'; '8 ÷ 4 means 32'; and '12 - 2 means 6'; then what will be the value of  $27 + 81 - 9 \times 6$ ?

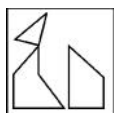
- (A) 36 (B) 24 (C) 12 (D) 6

80. Which number will replace the '?' in the following sequence?

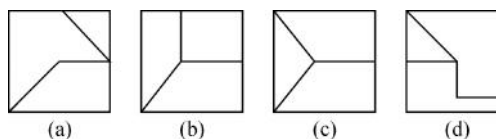
5, 7, 14, 24, 42, ?, 119

- (A) 71 (B) 67  
(C) 65 (D) 63

81. Find out which of the following figures can be formed from the pieces given in the figure 'X'?

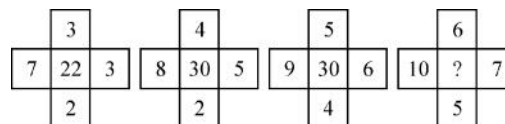


(x)



- (A) (a) (B) (b) (C) (c) (D) (d)

82. Find the missing number '?' in the figure given below :



- (A) 30 (B) 32 (C) 33 (D) 35

83. If MOBILE is coded as DFBICE, then CHARGE is coded as :

- (A) CHBXQE (B) CLARTE  
(C) CHAIGE (D) CHIAEF

84. Study the following information

If 'A\$B' means A is brother of B,

'A@B' means A is wife of B.

'A#B' means A is daughter of B and

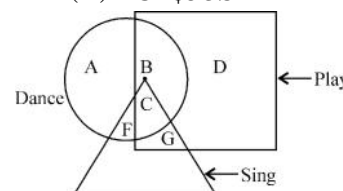
'A%B' means A is father of B.

Based on the above information, which of the following alternative represents the correct group of symbols that indicates the relationship for 'K' is father-in-law of H?

- (A) H@\$L#P%K (B) H@\$P%L#K  
(C) H@J\$L#K%P (D) H@P\$J%SI#K

**Directions (85-87) :**

The following figure represent students who can play, sing and dance.



85. Which part of the figure represents students who can sing and dance?

- (A) F (B) C  
(C) F and C (D) E and G

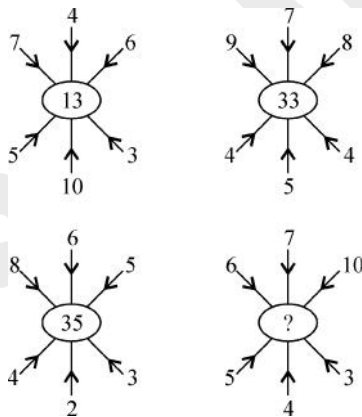
86. The number of students who can play is more by 'a' than the number of students who can dance; and the number of students who can do both playing and singing is more by 'b' than the number of students who can do both singing and dancing. Then, what is the difference of the number of students who can only dance and who can only play?

- (A)  $a + b$  (B)  $(2a - b)$  or  $(b - 2a)$   
(C)  $(a - 2b)$  or  $(2b - a)$  (D)  $(a - b)$  or  $(b - a)$

87. It is given that the total numbers of students in all the three disciplines are same. Also, sum of the number of students who can only dance, and twice of the number of students who can do both singing and dancing, equals the sum of the students who can do both singing and playing and the students who can do both dancing and playing. Then, which among the alternative is a correct statement about the number of students who can only play and those who can only sing?

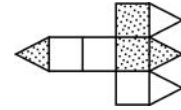
- (A) The number of students who can only sing is twice as many as the number of students who can only play  
(B) The number of students who can only sing is equal to the sum of the number of student who can sing and dance and the number of students who can only play and sing

- (C) The number of students who can only play and sing equals the number of students who can only dance and play
- (D) The number of students who can only dance equals to the number of students who can only sing
88. A comparison of ages of A, B, C, D and E are as follows :
- B's age is half the age of A.
  - B's age is  $1\frac{1}{2}$  times the age of C.
  - D's age is 12 years less than C.
  - D's age is  $1\frac{1}{2}$  times the age of E.
  - The age of E is 12 years.
- With the given data what will be the difference in the ages of A and C?
- (A) 64 (B) 60 (C) 40 (D) 36
89. If CLOUD = 11, BURST = 16 and ACE = 3, then MONSOON = ?
- (A) 13 (B) 15 (C) 17 (D) 19
90. Three dice are rolled simultaneously and the numbers shown on all the three dice are added, then the total number of possible ways to have a sum of 7 is :
- (A) 12 (B) 13 (C) 15 (D) 16
91. A comparison of marks scored by Gauri, Aaban, Seerat and Alvina in an examination is as follows.
- Gauri has scored 15 marks less than Aaban.
  - Gauri has scored 20 marks more than Seerat.
  - Alvina has scored 10 marks less than Seerat.
- To decide who has scored the highest marks, identify the statement from those given in the alternatives in respect of sufficiency of data.
- (A) Data given in I and II are sufficient  
 (B) Data given in I and III are sufficient  
 (C) Data given in II and III are sufficient  
 (D) Data given in I, II and III are sufficient
92. The number in the place of '?' should be .....

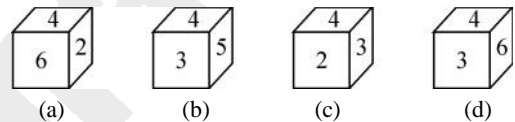


- (A) 30 (B) 32 (C) 34 (D) 36
93. The given figure in the question has five squares and four equilateral triangles. Two squares and two triangles are shaded. The figure is folded along the dividing lines the squares by  $90^\circ$  and triangle by  $45^\circ$  so as to form a close three, dimensional object. The object is then placed with its apex pointing towards

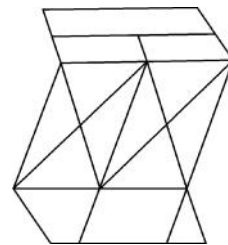
your left. Which one among the figures given in the alternatives can be seen?



94. Complete the following series  
 6, 24, 60, ?, 210  
 (A) 96 (B) 120 (C) 140 (D) 160
95. By studying the figure and number relationship, find the missing number?
- |                         |                         |                         |                         |
|-------------------------|-------------------------|-------------------------|-------------------------|
| 26<br>15<br>3<br>7<br>9 | 32<br>18<br>4<br>8<br>6 | 41<br>9<br>7<br>19<br>2 | 33<br>8<br>?<br>15<br>4 |
|-------------------------|-------------------------|-------------------------|-------------------------|
- (A) 1.5 (B) 6 (C) 9 (D) 12
96. The opposite faces of Dice X are [(5, 2), (6, 3), (4, 1)]  
 The opposite faces of Dice Y are [(3, 5), (4, 1), (6, 2)]  
 Which figure can represent both Dice X and Dice Y with faces shown below?

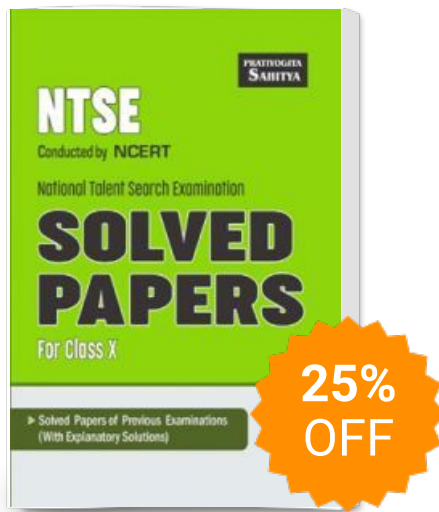


- (A) (a) (B) (b) (C) (c) (D) (d)
- 97.
- |       |   |   |   |
|-------|---|---|---|
| R     | S | T | U |
| +     | N | R | S |
| +     | R | T | S |
| <hr/> |   |   |   |
| 3     | 7 | 8 | 4 |
| 9     |   |   |   |
- then, find the code of T U R N S from the given alternatives provided there is no carrying over in the given addition using letter codes.
- (A) 1 3 6 2 5 (B) 6 5 2 3 1  
 (C) 1 6 3 5 2 (D) 5 3 1 2 6
98. If  $p$   
 $\circ + \circ = 10$   
 $\circ + \square + \square = 10$   
 $\circ \times \square - \Delta \times \circ = 5$   
 Then, the value of  $\Delta$  will be .....
- (A) 1.5 (B) 2.5 (C) 5 (D) 7.5
99. How many parallelograms are there in the given figure?



- (A) 14 (B) 15 (C) 16 (D) 17
100. A newspaper has 6 sheets consisting of 24 page in total. If page number 17 of that newspaper is missing, then find the set of missing pages in that newspaper, from the alternatives given below :
- (A) 6, 7, 16, 17 (B) 7, 8, 17, 18  
 (C) 8, 9, 17, 18 (D) 9, 10, 16, 17

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