

class 10



TARGET
NTSE
National Talent Search Examination

Solved Paper
2015
Stage 2

Time : 45 Minutes

Max. Marks : 50

Instructions for Candidates

Read the following instructions carefully before you answer the questions :

1. Answers are to be given on a separate answer-sheet.
2. Write your eight-digit Roll Number very clearly on the test-booklet and answer-sheet as given in your letter / admission card.
3. Write down the Booklet Number in the appropriate box on the answer sheet.
4. There are 50 questions in this test. All are compulsory.
5. Please follow the instructions for marking the answers given on the answer sheet.
6. For questions 1 – 50, put a cross mark (X) on the number of the correct alternative on the answer-sheet against the corresponding question number.
7. If you do not know the answer to any question, do not spend much time on it and pass on to the next one. Time permitting, you can come back to the questions, which you have left in the first instance and try them again.
8. Since the time allotted for this question paper is very limited you should make the best use of it by not spending too much time on any one question.
9. Rough work can be done anywhere in the booklet but not on the answer sheet/loose paper.
10. Every correct answer will be awarded one mark.
11. Please return the Test-booklet and answer-sheet to the invigilator after the test.

- If RESPOND is coded as EMPOTDS and SENSE is coded as FRODT, then CLARIFY will be coded as
 - EDTOJME
 - ZEJSBMD
 - ZEJQBKD
 - ZDKSBKD
- Madhu walks 15 metres towards north, then she turns left at 90° and walk 30 metres, then turns right at 90° and walks 25 metres. How far, she is from the starting point and in which direction?
 - 55 mt., north-east
 - 50 mt., north-west
 - 60 mt., north
 - 50 mt., west
- Five friends A, B, C, D and, E are standing in a row facing south but not necessarily in the same order. Only B is between A and E, C is immediate right to E and, D is immediate left to A. On the basis of above information, which of the following statements is definitely true?
 - B is to the left of A
 - B is to the right of E
 - A is second to the left of C
 - D is third to the left of E

Directions (Qs. 4 - 8) : A, B, C, E, F, G and H are seven employees in an organisation working in the departments of Administration, Accounts and Operations. There are at least two employees in each department. There are three females, one in each department. Each of seven employees earns different amount. The only bearded employee F works in Administration and his only other colleague G earns the maximum. C, the least earner works in Accounts. B and E are brothers and do not work in the same department. A, husband of H, works in Accounts and earns more than each of F, B and E. The wife in the couple earns more than the husband.

- Which of the following is a group of females?
 - GCE
 - GEH
 - GCH
 - GHB
- In which department(s) do three people work?
 - Operations
 - Accounts
 - Operations or Accounts
 - Data inadequate
- What will be the position of A from the top when they are arranged in descending order of their income?
 - Second
 - Third
 - Fourth
 - Fifth
- In which of the following department does B work?
 - Operations
 - Accounts
 - Administration
 - Data inadequate
- Which of the following statements is definitely true?
 - B earns less than F and H
 - F earns more than B and E
 - B earns more than E and C
 - B earns less than A and H

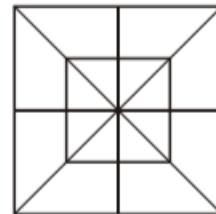
Directions (Qs. 9 - 11) : Given an input, a machine generates pass codes for the six batches each day as follows:

Input: these icons were taken out from the sea.

Pass Codes

- Batch I : from sea the out taken were icons these
 Batch II : from icons these were taken out the sea
 Batch III : from icons out sea the taken were these
 Batch IV : from icons out sea these were taken the

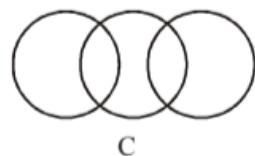
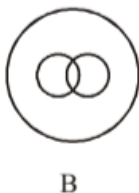
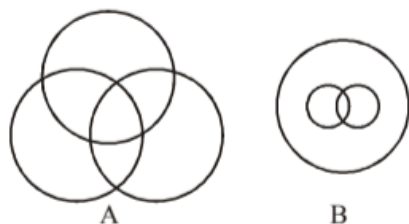
- What will be the pass code for the Batch V on a day, if the input is "four of the following five form a group"?
 - a five following form four group the of
 - a five following form group the of four
 - a five following form four of the group
 - a five following form four group of the
- If the pass code for the Batch IV on a day was 'back go here people who settle want to', what was the pass code for the Batch V on that day?
 - back go here people settle who want to
 - back go here people to want settle who
 - back go here people settle to want who
 - cannot be determined
- The pass code for the Batch I on a day was 'he so used to sell the surplus items'. What was the input on that day?
 - items surplus the sell to used so he
 - he items surplus the sell to used so
 - so used to sell the surplus items he
 - cannot be determined
- What is the total number of triangles and total numbers of squares in the given figure?



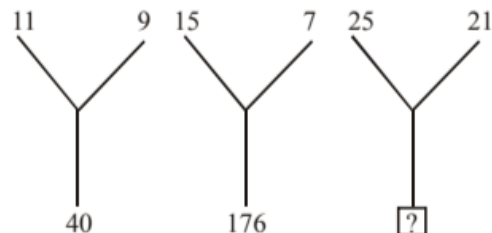
- 28 triangles, 10 squares
 - 28 triangles, 8 squares
 - 32 triangles, 10 squares
 - 32 triangles, 8 squares
- A cube whose two adjacent faces are coloured is cut into 64 identical small cubes. How many of those small cubes are not coloured at all?
 - 24
 - 32
 - 36
 - 48
 - If $54/32 = 4$, $36/42 = 3$, $92/22 = 7$ then what is $28/33 = ?$
 - 5
 - 6
 - 4
 - 9
 - In a certain code language, 'po ki top ma' means 'Usha is playing cards'; 'Kop ja ki ma' means 'Asha is playing tennis'; 'ki top sop ho' means 'they are p faying football'; and 'po sur kop' means 'cards and tennis'. Which word in this language means 'Asha'?
 - ja
 - ma
 - kop
 - top
 - A ship navigating in the Indian Ocean is hit by a sea storm and drifts as follows:
 40 km North
 28 km north-west
 36 km west
 52 km south and 29 km south east.
 The ship had finally drifted in _____ direction from its original position.
 - South West
 - South
 - West
 - South East

17. Four diagrams marked A, B, C and D are given below. The one that best illustrates the relationship among three given classes:

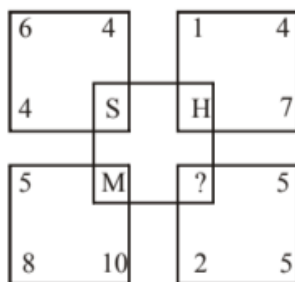
Women, Teachers, Doctors



- (1) A (2) B
(3) C (4) D
18. Identify the missing number in the following sequence
2, 17, 52, _____, 206
(1) 73 (2) 85
(3) 113 (4) 184
19. Select the missing number



- (1) 184 (2) 210
(3) 241 (4) 425
20. Select the missing numbers in the following sequence
3, 6, 24, 30, 63, 72, ?, ?, 195, 210
(1) 117, 123 (2) 120, 132
(3) 123, 135 (4) 135, 144
21. Find the number that does not belong to the group:
111, 331, 482, 551, 263, 383, 362, 284
(1) 263 (2) 331
(3) 383 (4) 551
22. Which letter replaces the question mark?



- (1) L (2) N
(3) P (4) R

23. Certain blank spaces are left in the following sequence. Which is the group of letters given below, will complete the sequence?

c_bba_cab_ac_ab_ac

- (1) acbcb (2) bcacb
(3) babec (4) abebe

24. A boat starts with the speed of 1 km per hour. After every 1 km, the speed of boat becomes twice. How much will be the average speed of the boat at the end of journey of 2.5 km?

- (1) $\frac{2.5}{1.5125}$ (2) $\frac{2.5}{1.75}$
(3) $\frac{2.5}{1.625}$ (4) $\frac{2.5}{1.50}$

25. Using the total number of alphabets in your solution as a parameter, find the number that represents G if,
A - 0, B - 0, C - 2, D - 2, E - 1, F - 2, G - ?

- (1) 2 (2) 3
(3) 4 (4) 5

26. ` 1000 is given to A, B and C in some ratio. A is wrongly given double and C is wrongly given half, which is ` 500 and ` 250 respectively. How much is given to B?

- (1) 500 (2) 250
(3) 750 (4) None of these

27. Given that the total cost of 5 erasers, 7 sharpeners and 9 pencils is ` 100 and the total cost of 2 erasers, 6 sharpeners and 10 pencils is ` 80. What is the total cost (in `) of one eraser, one sharpener and one pencil?

- (1) 10 (2) 15
(3) 20 (4) Data are not sufficient

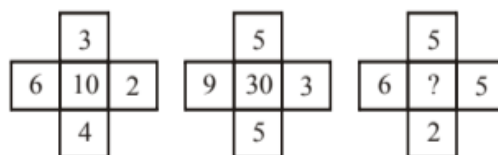
28. Renu went to the market between 7 am and 8 am. The angle between the hour-hand and the minute-hand was 90°. She returned home between 7 am and 8 am. Then also the angle between the minute-hand and Hour-hand was 90°. At what time (nearest to second) did Renu leave and return home?

- (1) 7 h 18 m 35 s and 7 h 51 m 24 s
(2) 7 h 19 m 24 s and 7 h 52 m 14 s
(3) 7 h 20 m 42 s and 7 h 53 m 11 s
(4) 7 h 21 m 49 s and 7 h 54 m 33 s

29. Stimulant : Activity :: ?

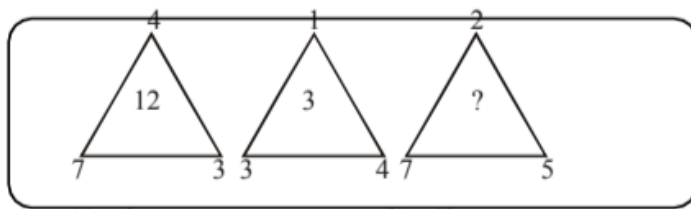
- (1) Symptom : Disease (2) Food : Hunger
(3) Fertilizer : Growth (4) Diagnosis : Treatment

30. Choose the missing number from among the four alternatives:



- (1) 15 (2) 20
(3) 25 (4) 40

31. From among the four alternatives given below, which number replaces the question mark?



- (1) 9 (2) 10
(3) 18 (4) 23

32. From among the four alternatives given below, which letter replaces in the given figure the question mark?

3	P	8
9	G	11
2	U	4
3	W	1
7	?	18

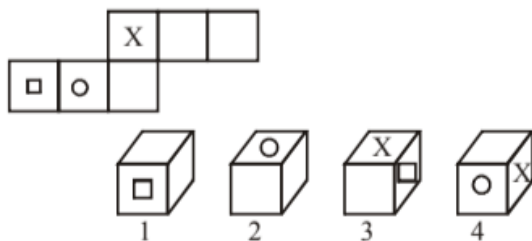
- (1) A (2) B
(3) S (4) Y

33. Choose the correct mirror-image most closely resembles the word source, from the four given alternatives.

source

- (1) ƆOUI᠋᠋᠋᠋ (2) Ɔ᠋᠋᠋᠋᠋᠋᠋᠋
(3) Ɔ᠋᠋᠋᠋᠋᠋ (4) Ɔ᠋᠋᠋᠋᠋᠋᠋᠋

34. In the problem figure a unfolded cuboid is given. Choose from the four given alternatives the box that will be formed when problem figure is folded.



- (1) 1 only (2) 1 and 2 only
(3) 1, 2 and 3 only (4) 2 and 3 only

35. A work can be completed by 40 workers in 40 days. If 5 workers leave every 10 days, in how many days work will be completed?

- (1) 55.66 (2) 56.44
(3) 56.66 (4) 58.66

36. From among the four alternatives given below, which figure replaces the question mark '?'.



- (1) (2)
(3) (4)

37. Six persons A, B, C, D, E and F are sitting in two rows, three persons are sitting in each row
E is not at the end of any row
D is second to the left of F
C, the neighbour of E, is sitting diagonally opposite to D
B is the neighbour of F
Who are sitting in each column?

- (1) A and D; E and F; and B and C
(2) A and F; D and E; and B and C
(3) B and D; A and C; and E and F
(4) A and D; B and E; and F and C

38. The sum of the incomes of A and B is more than that of C and D taken together. The sum of incomes of A and C is the same as that of B and D taken together. Moreover, A earns half as much as the sum of the incomes of B and D. Whose income is the highest?

- (1) A (2) B
(3) C (4) D

39. A letter number series is given with one or more terms missing as shown below. Choose the alternative next in the sequence.

A4X, D9U, G16R, _____

- (1) K25P (2) J25P
(3) J25O (4) J25C

40. Study the following information and answer the question given below it:

Rohit, Kunal, Ashish and, Ramesh are students of a school. Three of them stay far from the school and one near it. Two studies in class IV, one in class V and one in class VI. They

study Hindi, Mathematics, Social Sciences and Science. One is good at all four subjects while another is weak in all of these. Rohit stay far from the school and is good at mathematics only while Kunal is weak in mathematics only and stay close to the school. Neither of these two nor Ashish studies in class VI. One who is good at all the subjects study in class V. Name the boy who is good at all the subjects.

- (1) Rohit (2) Ramesh
(3) Kunal (4) Ashish

41. Half of the villagers of a certain village have their own houses. One - fifth of the villagers cultivate paddy. One - third of the villagers are literate. Four - fifth of the villagers are below twenty five. Then, which one of the following is certainly true?

- (1) At least 10 percent villagers who have their own houses are literate.
(2) At least 25 percent of the villagers who have their own houses cultivate paddy.
(3) At least 50 percent of the villagers who cultivate paddy are below twenty five.
(4) At least 13.33 percent literate must be below twenty five

42. A tank is filled by three pipes with each pipe having uniform flow. The first two pipes operating simultaneously fill the tank in the same time during in which the tank is filled by the third pipe alone. The second pipe fills the tank 5 hours faster than the first pipe and 4 hours slower than the third pipe. The time required by the first pipe to fill the tank is:
 (1) 6 hours (2) 10 hours
 (3) 15 hours (4) 30 hours
43. If FEED is coded as 47 and TREE is coded as 91, then MEET will be coded as
 (1) 110 (2) 114
 (3) 118 (4) 122
44. One watch is 1 minute slow at 1 pm on Tuesday and 2 minutes fast at 1 am on Friday when did it show the correct time?
 (1) 5.00 am on Wednesday
 (2) 9.00 am on Wednesday
 (3) 5.00 pm on Wednesday
 (4) 9.00 pm on Wednesday

Directions (Qs. 45 - 47) : A coding language is used to write English words in coded form given below:

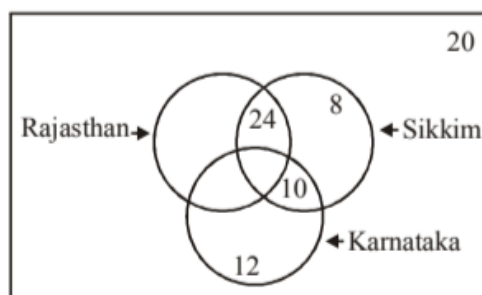
TENNIS	% # \$ @ \$ &
TRUE	@ + # *
PRIME	* = ? # %
SPINE	# \$ % ? &

The codes do not appear in the same order of the letters in English words. Decode the language and based on these codes identify the code for English word given in each question from the alternatives provided.

45. MINT
 (1) % = & * (2) = # ? %
 (3) @ % = \$ (4) * @ ? +

46. RINSE
 (1) = ? + * @ (2) % * \$ # &
 (3) * \$ # @ + (4) \$ & # = ?
47. INTEREST
 (1) = ? * + % & = * (2) ? # = ? + # * \$
 (3) + \$ @ + \$ = * % (4) @ # * # @ \$ % &

Directions (Qs. 48 - 49) : There are three circles in the following diagram. A total number of 100 persons were surveyed and the number in the diagram indicates the number of tourists who visited different states. 46 tourists visited Sikkim and 42 tourists visited Karnataka.



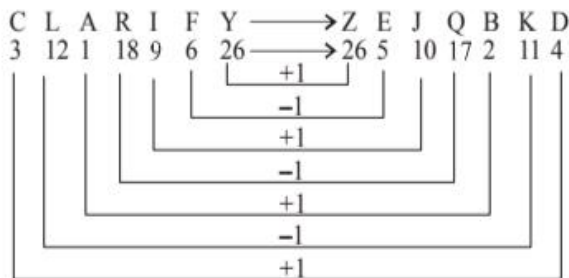
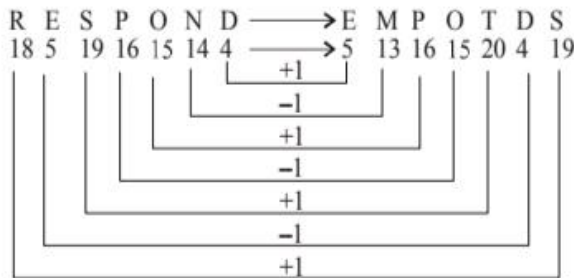
48. How many tourists have visited at least two states?
 (1) 46 (2) 50
 (3) 54 (4) 58
49. How many tourists have visited only two states?
 (1) 46 (2) 50
 (3) 54 (4) 96
50. If BREAKTHROUGH is coded as EAOUHRBRGHKT, then DISTRIBUTION will be coded as
 (1) STTIBUDIONRI
 (2) TISTBUONDIRI
 (3) STTIBUONRIDI
 (4) RISTTIBUDION

ANSWER KEY

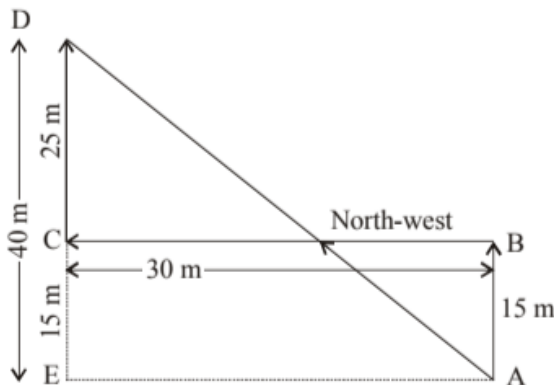
1	(3)	6	(2)	11	(4)	16	(1)	21	(3)	26	(2)	31	(2)	36	(2)	41	(4)	46	(2)
2	(2)	7	(4)	12	(3)	17	(3)	22	(2)	27	(2)	32	(2)	37	(4)	42	(3)	47	(4)
3	(4)	8	(4)	13	(3)	18	(3)	23	(1)	28	(4)	33	(4)	38	(2)	43	(3)	48	(3)
4	(3)	9	(1)	14	(3)	19	(1)	24	(3)	29	(3)	34	(2)	39	(3)	44	(2)	49	(2)
5	(3)	10	(3)	15	(1)	20	(2)	25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

Hints & Explanations

1. (3)



2. (2)



In $\triangle DEA$

$$DA = \sqrt{(40)^2 + (30)^2}$$

$$= \sqrt{1600 + 900} = 50 \text{ m.}$$

So Madhu is 50 m north-west from the starting point.

3. (4)

So only option 4 is satisfies.

4-8. Let us fill the information in the following table :

Administration - ☐ F ☐ G ☒ only 2

Accounts - ☐ C ☐ A ☐ 2 or more

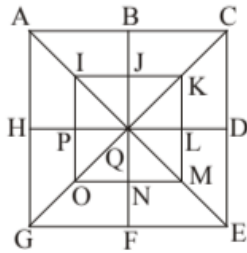
Operations - ☐ H ☐ ☐ 2 or more

- 2 or more employees in each.
- 1 female (out of 3) in each.
- G earns most & C least.
- F is male (bearded) so G is female (condition (ii)) as Administration has 2 people.
- A (male) works in Accounts, B & E are brothers (males) so C & H are the other 2 females. so H is in Operations.
- A earns more than F, B & E.
H earns more than A.
So order of salary
G, H, A, ☐ B ☐ E ☐ C
- Position of B & E is not clear.

Earning order of F, BE, not clear.

- (3) Clearly GCH see (iv) and (v)
- (3) Can be Accounts or Operations.
- (2) Third from top; see (vi)
- (4) B may be in Accounts or Operations.
- (4)
 - B & F order not clear
 - F, B & E order not clear
 - B & E order not clear
 - $H > A > B$ is clear; see (vi)
- (1) **Input** : four of the following five form a group
 Batch I (10 a.m. to 11 a.m.) : a group form five following the of four
 Batch II (11 a.m. to 12 noon) : a five four of the following form group
 Batch III (12 noon to 1 p.m.) : a five following group form the of four
 Batch IV (1 p.m. to 2 p.m.) : a five following form four of the group
 Rest hour (2 p.m. to 3 p.m.)
 Batch V (3 p.m. to 4 p.m.) : a five following form four group the of

10. (3) Clearly, timing for Batch IV is 1 p.m. So in the pass code for Batch IV, pattern being followed is first four words are arranging in alphabetical order.
11. (4) the input may be obtained by writing all words except 'he' in the given pass code in the reverse order and then placing 'he' at any of the eight positions. So, there are eight possible inputs. Thus, it is not possible to determine the exact input.
12. (3) We may label the figure as shown.



Triangles : The simplest triangles are IJQ, JKQ, KLQ, LMQ, MNQ, NOQ, OPQ and PIQ i.e. 8 in number.
The triangles with 2 components are ABQ, BCQ, CDQ, DEQ, EFQ, FGQ, GHQ, HAQ, IKQ, KMQ, MOQ and OIQ i.e. 12 in number.

The triangles with 4 components are ACQ, CEQ, EGQ, GAQ, IKM, KMO, MOI and OIK i.e. 8 in number.
The triangles with 8 components are ACG, CEG, EGA and ACE i.e. 4 in number.

Squares

∴ Total number of triangles in the figure = 8 + 12 + 8 + 4 = 32.

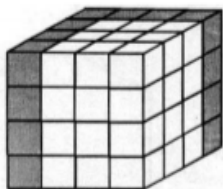
The squares with 2 components are IJQP, JKLQ, QLMN and PQNO i.e. 4 in number.

The squares with 4 components are ABQH, BCDQ, QDEF and HQFG i.e. 4 in number.

IKMO is the only one square having 8 components.
There is only one square i.e. ACEG composed of sixteen components

Thus, there are 4 + 4 + 1 + 1 = 10 squares in the given figure.

13. (3)



So uncoloured cubes $3 \times 3 \times 4 = 36$

14. (3) $\frac{54}{32} \Rightarrow (5+4) - (3+2) = 4$

$\frac{36}{42} \Rightarrow (3+6) - (4+2) = 3$

$\frac{92}{22} \Rightarrow (9+2) - (2+2) = 7$

$\frac{28}{33} \Rightarrow (2+8) - (3+3) = 4$

15. (1)

po (ki) top (ma) \longrightarrow Usha (is) (playing) cards

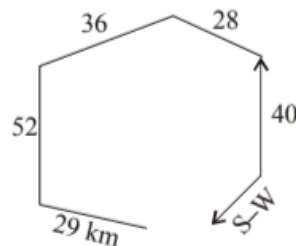
(kop) (ja) (ki) (ma) \longrightarrow Asha (is) (playing) tennis

ki top sop ho \longrightarrow They are playing football

po sur (kop) \longrightarrow Cards and (tennis)

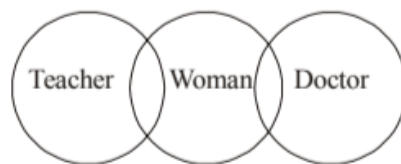
So code for Asha is ja.

16. (1)



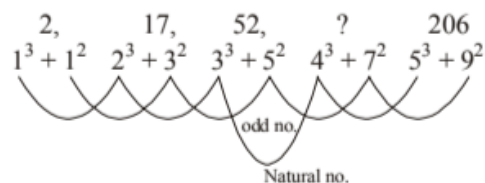
So option (1)

17. (3)

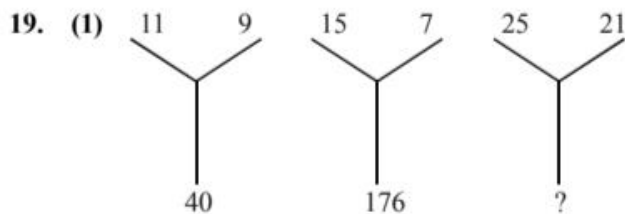


So option 3.

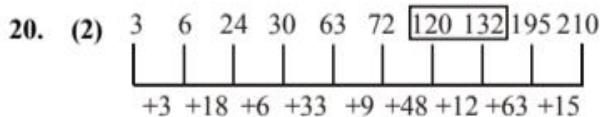
18. (3)



$? = 4^3 + 7^2 = 64 + 49 = 113$



$11^2 - 9^2$	$15^2 - 7^2$	$25^2 - 21^2$
$121 - 81$	$225 - 49$	$625 - 441$
$= 40$	$= 176$	$= 184$



21. (3)

111	→	1	1 × 1	1
331	→	3	3 × 1	1
482	→	4	4 × 2	2
551	→	5	5 × 1	1
263	→	2	2 × 3	3

393	←	383	→	3	3 × 3	3
		362	→	3	3 × 2	2
		284	→	2	2 × 4	4

22. (2) $[6^2 - (4 \times 4) - 1] = 20 - 1 = 19 \Rightarrow S$
 $[4^2 - (1 \times 7) - 1] = 9 - 1 = 8 \Rightarrow H$
 $[8^2 - (5 \times 10) - 1] = 14 - 1 = 13 \Rightarrow M$
 Similarly, $[5^2 - (5 \times 2) - 1] = 15 - 1 = 14 \Rightarrow N$

23. (1) Sequence is cabbac
 cabbac**acc**abbac
 ac**bc**b

24. (3) When the speed of boat increases time will decrease due to inverse relations.
 So in first 1 km speed is 1 km/hr.
 in second 1 km speed is 2 km/hr.

in last 5 km speed is 4 km/hr.

So time in first 1 km is 1 hr.

in second 1 km is $\frac{1}{2}$ hr

in last 5 km is $\frac{1}{4}$ hr

So total times 1.75 hr

So average speed = $\frac{\text{total distance}}{\text{total time}}$

$$= \frac{2.5}{\frac{1}{1} + \frac{1}{2} + \frac{0.25}{4}} = \frac{2.5}{1.625}$$

25. (4) $\frac{\text{Total no. of alphabets (26)}}{\text{position value of alphabet}} = \text{Remainder}$

$$\frac{26}{G(7)} = \text{Remainder is (5)}$$

26. (2) $A + B + C = 1000$
 $A = 500; C = 250$
 So, $B = 1000 - (500 + 250) = 250$
 So option (2) B is given ` 250

27. (2) $5e + 7s + 9p = 100 \dots(i)$
 $2e + 6s + 10p = 80 \dots(ii)$
 Subtract (ii) from (i)
 $3e + s - p = 20 \dots(iii)$
 Adding equation (i) and (iii)
 $8e + 8s + 8p = 120$
 So, $e + s + p = 15$

28. (4) $7 : x$

$$90 = \left(7 \times 30 + \frac{1}{2}x \right) - 6x$$

$$90 = 210 + \frac{x}{2} - 6x$$

$$6x - \frac{x}{2} = 120$$

$$\frac{11x}{2} = 120$$

$$x = \frac{240}{11} = 21\frac{9}{11} = 21 \text{ min} + \frac{9}{11} \times 60$$

$$= 21 \text{ min} + \frac{540}{11} \text{ sec.} = 21 \text{ min } 49 \text{ sec}$$

$$90 = 6x - \left(7 \times 30 + \frac{1}{2}x \right)$$

$$90 = 6x - 210 - \frac{x}{2}$$

$$300 = \frac{11x}{2}$$

$$x = \frac{600}{11} = 54\frac{6}{11} = 54 \text{ min} + \frac{6}{11} \times 60 \text{ sec}$$

$$= 54 \text{ min} + \frac{360}{11} \text{ sec.} = 54 \text{ min } 32 \text{ sec.}$$

29. (3) Both are synonyms
So in option (3) both are synonyms

30. (2) $6 \times 3 - 4 \times 2 = 10$
 $9 \times 5 - 5 \times 3 = 30$
 $6 \times 5 - 2 \times 5 = 20$

31. (2) (i) $7^2 - (4^2 + 3^2) = 49 - (16 + 9) = \frac{24}{2} = 12$

(ii) $4^2 - (3^2 + 1^2)$

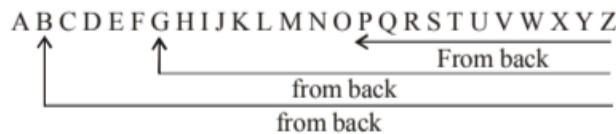
$16 - (9 + 1) = \frac{6}{2} = 3$

Similarly,

$7^2 - (5^2 + 2^2) = ?$

$49 - (25 + 4) = \frac{20}{2} = 10$

32. (2)



$(8 + 3) = 11$

11th letter from back = P

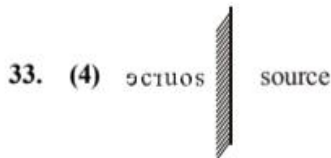
$(11 + 9) = 20$

20th letter from back = G

Similarly,

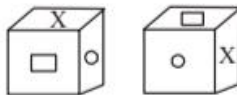
$(18 + 7) = 25$

25th letter from back = B



33. (4) source

34. (2) Only (1) and (2) is possible



When we fold the cuboid.

X is on the top and circles is on right surface than possible diagram is given. We see that options 3rd and 4th are not possible according to given unfolded structure of cuboid.

35. (3) Total work is $40 \times 40 = 1600$ unit

I. Work completed in 10 days by 40 workers.
 $= 40 \times 10 = 400$

II. Work completed in 10 days by 35 workers.
 $= 35 \times 10 = 350$

and so on

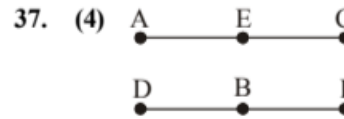
In 50 days 1500 unit work is done.

Now, 15 workers 100 unit

So, the work will be completed in 6.66 days

So, total work will be completed in 56.66 days

36. (2) One line is increased in each next figure.



According to figure

A, D ; E, B and C, F are sitting in each column.

38. (2) Given $A + B > C + D$

and $A + C = B + D$

$\therefore A = \frac{B + D}{2}$

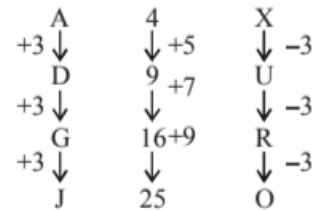
So, the income of C is $\frac{B + D}{2}$

$\frac{B + D}{2} + B > \frac{B + D}{2} + D$

$B > D$

Hence, the option (2) is correct.

39. (3)



\therefore Option (3) is correct.

40. (4)

	Rohit	Kunal	Ashish	Ramesh
Class	IV	IV	V	VI
Far/Close	Far	Close	Far	Far
Subject	Good in Math	Weak in Maths only	Good in all	Weak in all

After study the table the option (4) is correct.

41. (4) $\frac{1}{2} = 50\%$ villagers have thier own house.

$\frac{1}{5} = 20\%$ villager cultivate paddy.

$\frac{1}{3} = 33.33\%$ villagers are literate.

$\frac{4}{5} = 80\%$ villagers are below 25.

\therefore According to above statement, option (4) is correct.

42. (3)

A B C
 $x+5$ x $x-4$

Total work is $(x+5)(x)(x-4)$

$$\text{Work done by pipe A} = \frac{(x-5)(x)(x-4)}{(x+5)} = x(x-4)$$

$$\text{Work done by pipe B} = \frac{(x-5)(x)(x-4)}{x} = (x+5)(x-4)$$

$$\text{Work done by pipe C} = \frac{(x-5)(x)(x-4)}{(x-4)} = (x+5)(x)$$

According to questions,

$$A+B=C$$

$$x(x-4) + (x+5)(x-4) = (x+5)(x)$$

$$x^2 - 4x + x^2 + x - 20 = x^2 + 5x$$

$$2x^2 - 3x - 20 = x^2 + 5x$$

$$2x^2 - 3x - 20 - x^2 - 5x = 0$$

$$x^2 - 8x - 20 = 0$$

$$x^2 - 10x + 2x - 20 = 0$$

$$x(x-10) + 2(x-10) = 0$$

$$(x+2)(x-10) = 0$$

$$x = -2$$

$$x = 10$$

$$A = x+5 = 10+5 = 15 \text{ hours}$$

43. (3)

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26

F E E D

6 5 5 4

$$6 \times 1 + 5 \times 2 + 5 \times 3 + 4 \times 4 = 47$$

T R E E

20 18 5 5

$$20 \times 1 + 18 \times 2 + 5 \times 3 + 5 \times 4 = 91$$

M E E T

$$13 \times 1 + 5 \times 2 + 5 \times 3 + 20 + 4 = 118$$

Therefore, option (3) is correct.

44. (2) Watch covers 3 min in = 60 hrs.

$$\text{Watch covers 1 min in} = \frac{60}{3} \text{ hrs.} = 20 \text{ hrs}$$

So, 1 pm on tuesday + 20 hrs = 9 am on wednesday

45. (3)

46. (2)

47. (4) @ # * # @ \$ % & therefore, option (4) is correct.

48. (3) $24 + 16 + 10 + 4 = 54$

54 tourists have visited at least two states.

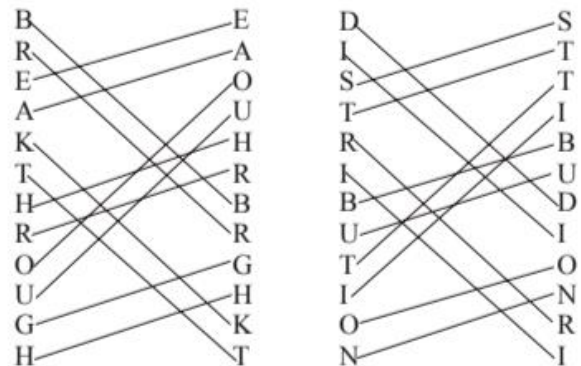
\therefore Option (3) is correct.

49. (2) $24 + 16 + 10 = 50$

50 tourists have visited only two states.

\therefore Option (2) is correct.

50. (1) According to letters positions.



\therefore Option (1) is correct answer.