

Test Registration No. 11070021

Test Booklet Serial No. 10546

INSTRUCTIONS

Before the Test: DO NOT OPEN THIS BOOKLET UNTIL THE SIGNAL TO START IS GIVEN.

1. Keep only the Admit Card, pencil, eraser and sharpener with you. DO NOT KEEP with you books, rulers, slide rules, drawing instruments, calculators (including watch calculators), cellular phones or any other device or loose paper. These should be left at a place indicated by the invigilator.
2. Use only an HB pencil to fill in the Answer Sheet.
3. Enter in your Answer Sheet all necessary details that are sought.
4. Ensure that your personal data have been entered correctly wherever required.
5. Check whether you have entered your Test Registration Number in the Answer Sheet correctly.

At the start of the Test:

1. As soon as the signal to start is given, open the Test Booklet.
2. This Test Booklet contains 20 pages, including the blank ones. Immediately after opening the Test Booklet, verify that all the pages are printed properly and are in order. If there is a problem with your Test Booklet, immediately inform the invigilator/supervisor. You will be provided with a replacement.

How to answer:

1. This test has three sections that examine various abilities. In all there are 75 questions. You will be given two hours to complete the test. In distributing the time over the three sections, please bear in mind that you need to demonstrate your competence in all three sections.
2. Directions for answering the questions are given before each group of questions. Read these directions carefully and answer the questions by darkening the appropriate circles on the Answer Sheet. There is only one correct answer for each question.
3. All Questions carry one mark each. Wrong answers are penalized at 0.25 negative per wrong answer.
4. Do your rough work only in the space provided in the Test Booklet and NOT on the Answer Sheet.
5. Follow the instructions of the invigilator. Candidates found violating the instructions will be disqualified.

After the Test:

1. At the end of the test, remain seated. The invigilator will collect the Answer Sheet from your seat. Do not leave the hall until the invigilator announces "You may leave now". The invigilator may make the announcement only after collecting the Answer Sheets from all the candidates in the room.
2. You may retain this Test Booklet with you.

Candidates giving assistance or seeking/receiving help from any source in answering questions or copying in any manner in the test will forfeit their chances of being considered for admission. The Institute reserves the right to exclude any question or questions from this Test Booklet for final evaluation.

SECTION - I

1. The price of 10 chairs is equal to that of 4 tables. The price of 15 chairs and 2 tables together is Rs. 8000. The total price of 12 chairs and 3 tables is:

- 1) 7000
- 2) 7500
- 3) 7800
- 4) 8000

Handwritten solution for Q1:

$$10C = 4T$$

$$15C + 2T = 8000$$

$$6T + 2T = 8000 \quad 8T = 8000 \quad T = 1000$$

$$10C = 4 \times 1000 \quad C = 400$$

$$12C + 3T = 12 \times 400 + 3 \times 1000 = 4800 + 3000 = 7800$$

2. A merchant buys two articles for Rs.900. He sells one of them at a profit of 22% and the other at a loss of 8% and makes no profit or loss in the end. What is the selling price of the article that he sold at a loss?

- 1) Rs. 606.80
- 2) Rs. 660
- 3) Rs. 636.80
- 4) None of these

Handwritten solution for Q2:

$$x + y = 900$$

$$x + y - \frac{22x}{100} + \frac{8y}{100} = 900$$

$$\frac{78x}{100} + \frac{108y}{100} = 900$$

$$78x + 108y = 90000$$

$$13x + 18y = 15000$$

$$13x + 18y = 15000$$

$$13x + 18y = 15000$$

3. The captain of a football team of 11 members is 25 years old and the goal keeper is 3 years older. If the ages of these two are excluded, the average age of the remaining players is one year less than the average age of the whole team. What is the average age of the team?

- 1) 21 years
- 2) 23 years
- 3) 24 years
- 4) None of the Above

Handwritten solution for Q3:

$$\frac{10x}{11} = \frac{25 + 28 + 10x}{11} - 1$$

$$10x = 53 + 10x - 11$$

$$0 = 42$$

$$x = 24$$

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

- 1) 3: 4: 6
- 2) 23/10: 33/10: 6
- 3) 25/10: 35/10: 55/10
- 4) 23/10: 33/10: 53/10

Handwritten solution for Q4:

$$25 + 28 = 53 + 27$$

$$54 + 27 = 81$$

$$11 \times 27 = 297$$

5. The present ages of three persons in proportions 7: 8: 9. Five years ago, the sum of their ages was 57. Find their present ages (in years).

- 1) 14, 16, 18
- 2) 21, 24, 27
- 3) 28, 30, 36
- 4) 21, 32, 36

6. A person starts multiplying consecutive positive integers from 20. How many numbers should he multiply before the will have result that will end with 3 zeroes?

- 1) 10
- 2) 6
- 3) 5
- 4) None of the above

7. Ravi spends $\frac{1}{4}$ of her savings on a bike and $\frac{1}{3}$ less than he spent on the bike for a television. What fraction of the savings did he spend on the bike and the television?

- 1) $\frac{1}{4}$
- 2) $\frac{2}{7}$
- 3) $\frac{5}{12}$
- 4) $\frac{1}{2}$

0.25
 $\frac{1}{4} = 0.25$
 $\frac{1}{3} \text{ less than } 0.25 = 0.1667$
 $0.25 + 0.1667 = 0.4167$
 $\frac{5}{12}$

100
 $\frac{25}{100}$

$\frac{1}{4}$

$\frac{1}{4} = \text{Bike}$
 $\frac{1}{3}$

$\frac{1}{3}$
 $\frac{25}{3} = 8.33$
 $\frac{100}{3.233}$

8. The price of cement rose by 25% and then fell by 20%. The price after these changes was

- 1) The same as the original price
- 2) 20% greater than the original price
- 3) 5% greater than the original price
- 4) 15 percent less than the original price

$2 + \frac{25}{100} = 1.25$
 $1.25 \times (1 - \frac{20}{100}) = 1.25 \times 0.8 = 1.0$

9. By walking at $\frac{3}{4}$ th of his usual speed, a man reaches office 20 minutes later than usual. What is his usual time?

- 1) 30 min
- 2) 70 min
- 3) 40 min
- 4) 60 min

$\frac{25}{33}$

$\frac{3}{4}$
 $\frac{3}{4} = \frac{3}{4}$
 $\frac{4}{3}$

$x = 60$
 $\frac{3}{4}x = \text{speed}$
 $\frac{d}{\text{speed}} = \text{time}$

10. Two trains A and B, started simultaneously from opposite ends of a 150-km route and traveled toward each other on parallel tracks. Train A, traveling at a constant rate, covered the 150-km trip in 3 hours; Train B, traveling at a constant rate, completed the distance in 2 hours. How much distance had Train A traveled when it met Train B?

- 1) 50 km
- 2) 60 km
- 3) 75 km
- 4) 90 km

150 km
 $\frac{150}{3} = 50 \text{ km/hr}$
 $\frac{150}{2} = 75 \text{ km/hr}$
 $\frac{150}{50 + 75} = 1 \text{ hr}$
 $50 \times 1 = 50 \text{ km}$

$\frac{D}{S} = T$
 $\frac{150}{S_A} = T$
 $\frac{150}{S_B} = T + 20$
 $\frac{150}{S_A} = \frac{150}{S_B} + 20$

11. In a business schools, students either major in marketing, or finance. 72% of the students are majoring in marketing and 34% are doing a joint major. If there are 750 students in the class, how many students are majoring in finance?

- 1) 465
- 2) 210
- 3) 255
- 4) 540

72%
 34%
 750
 $0.72 \times 750 = 540$
 $0.34 \times 750 = 255$
 $540 + 255 = 795$
 $795 - 750 = 45$
 $540 - 45 = 495$

Venn diagram showing Marketing (M) and Finance (F) with a joint region. $M = 72\%$, $F = 34\%$, Joint = 34%. Total = 750.

12. A company rented a machine for Rs.700/- a month. Five years later the treasurer calculated that if the company had purchased the machine and paid Rs.100/- monthly maintenance charge, the company would have saved Rs.2000/-. What was the purchase price of the machine?

- 1) Rs 36000
- 2) Rs 34000
- 3) Rs 355000
- 4) Rs 38000

$700 \times 5 \times 12 = 42000$
 $100 \times 5 \times 12 = 6000$
 $42000 - 6000 = 36000$

$700 \times 5 \times 12 = 42000$
 $100 \times 5 \times 12 = 6000$
 $42000 - 6000 = 36000$
 $36000 + 2000 = 38000$

13. An airline passenger is planning a trip that involves three connecting flights (zero check in time is assumed at all airports) that leave from Calicut, Mumbai and Ahmedabad, respectively. The first flight leaves Calicut every hour, beginning at 8 am, and arrives at Mumbai after 2 hours 30 minutes. The second flight leaves Mumbai every 20 minutes, beginning at 8 am and arrives at Ahmedabad after 1 hour 10 minutes. The third flight leaves Ahmedabad every hour, beginning at 8.45 am. What is the least total waiting time for the passenger at the three airports if all flights keep to their schedules?

- 1) 25 min
- 2) 1 hr 15 min
- 3) 1 hr 5 min
- 4) 2 hrs 20 min

C	8	9	10	11	12
M	8	9	10	11	12
A	8.45	9.45	10.45	11.45	

14. The children below 5 years are charged child ticket in airlines. The child ticket costs quarter of fare of the adult ticket. The taxes and other charges is the same on child ticket as on adult ticket. One adult ticket from Calicut to Mumbai costs Rs. 4320.00 and one adult and one child ticket costs Rs. 6540.00. What is the basic fare of adult ticket and what are tax charges?

- 1) Rs. 1520 and Rs. 2800
- 2) Rs. 1520 and Rs. 700
- 3) Rs. 2800 and Rs. 700
- 4) Rs. 2800 and Rs. 1520

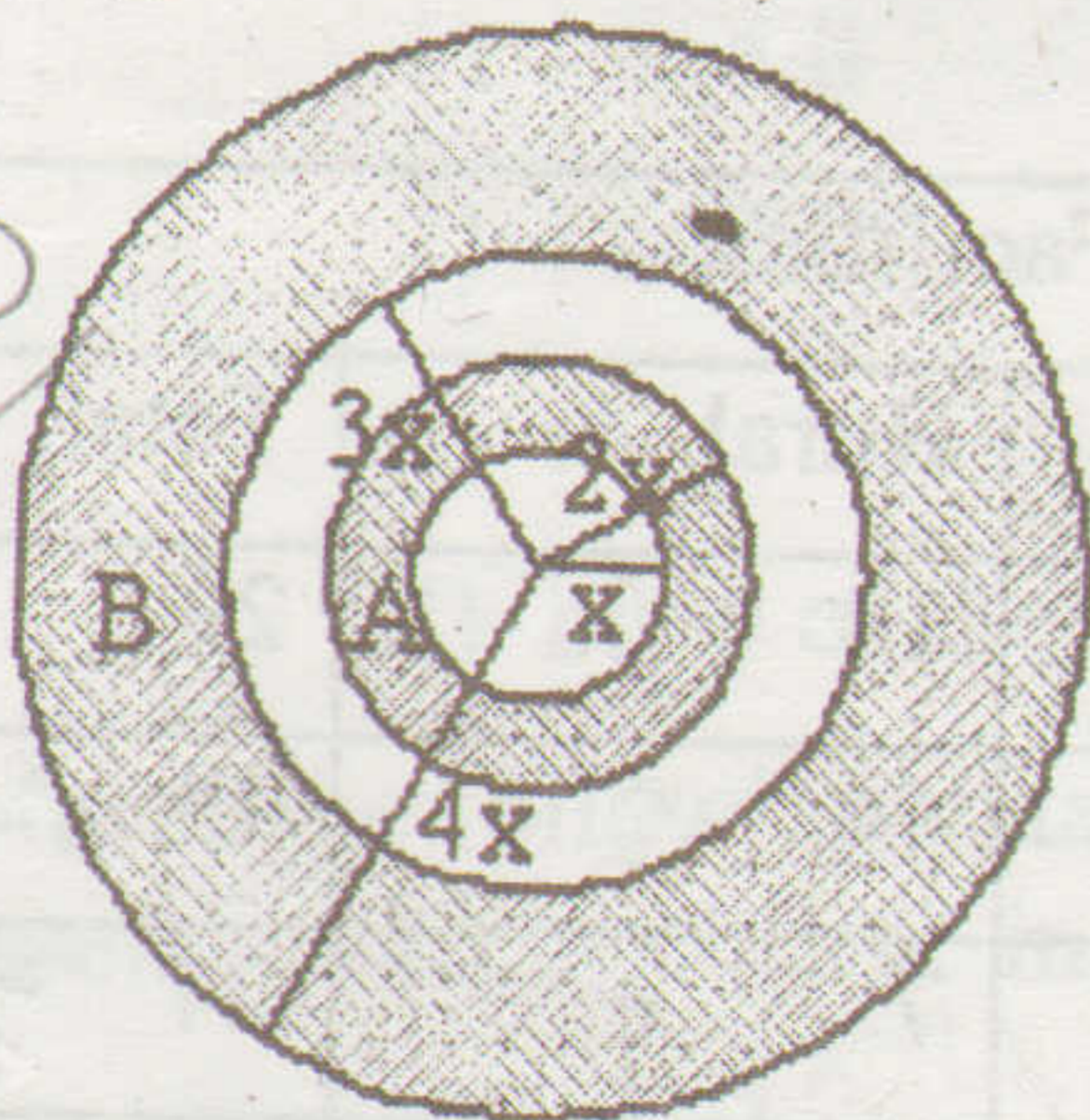
$A = \text{Taxes}$
 $C = \frac{1}{4}A + \text{Taxes}$
 $A + 2I + \frac{1}{4}A = 6540$
 $4320 + \frac{1}{4}A = 6540$

15. A merchant mixes three varieties of rice costing Rs.20/kg, Rs.24/kg and Rs.30/kg and sells the mixture at a profit of 20% at Rs.30 / kg. How many kgs of the second variety will be in the mixture if 2 kgs of the third variety is there in the mixture?

- 1) 2
- 2) 4
- 3) 6
- 4) None of the above

$20 \times Q_1 + 24 \times Q_2 + 30 \times 2 = 30(Q_1 + Q_2 + 2)$
 $20Q_1 + 24Q_2 + 60 = 30Q_1 + 30Q_2 + 60$
 $10Q_1 = 6Q_2$
 $5Q_1 = 3Q_2$
 $Q_1 : Q_2 = 3 : 5$

16. Four concentric (having the same center) circles with radii, x, 2x, 3x and 4x are drawn to form two rings A and B as shown in the figure. Ratio of the area of inner ring A to the area of outer ring B is



- 1) 1 : 2
- 2) 1 : 4
- 3) 3 : 7
- 4) None of the above

$Area\ of\ Ring\ A = \pi(3x)^2 - \pi(2x)^2 = \pi(9x^2 - 4x^2) = 5\pi x^2$
 $Area\ of\ Ring\ B = \pi(4x)^2 - \pi(3x)^2 = \pi(16x^2 - 9x^2) = 7\pi x^2$
 $Ratio = \frac{5\pi x^2}{7\pi x^2} = \frac{5}{7}$

17. Two squares are chosen at random on a chessboard. What is the probability that they have a side in common?

- 1) $1/18$
- 2) $64/4032$
- 3) $63/64$
- 4) $1/9$

For the question no. 18 & 19 given below consists of a statement and / or a question and two statements numbered I and II given below it. You have to decide whether the data provided in the statement(s) is / are sufficient to answer the given question. Read the both statements and

- Give answer (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.
- Give answer (2) if the data in Statement II alone are sufficient to answer the question, while the data in Statement I alone are not sufficient to answer the question.
- Give answer (3) if the data either in Statement I or in Statement II alone are sufficient to answer the question.
- Give answer (4) if the data in both Statements I and II together are necessary to answer the question.

18. How long will Machine Y, working alone, take to produce Z number of toys?

- I. Machine X produces Z number of toys in 5 minutes.
- II. Machine X and Machine Y working at the same time produce Z number of toys in 3 minutes.

19. John and Harry together can complete a task in 8 days. Harry alone can do it in 25 days. What part of the work was carried out by John?

- III. John completed the job alone after John and Harry worked together for 6 days.
- II. Part of the work done by John could have been done by Harry and Peter together in 5 days.

Refer to the following dataset and solve questions from 20 to 23 based on it. The following table presents the data on the percentage of population covered by drinking water and sanitation facilities in select Latin American Countries.

Country	Drinking Water			Sanitation Facilities		
	Urban	Rural	Total	Urban	Rural	Total
A	85	79	81 ₃	70 ₇	14 ₆	29 ₆
B	99	96	97 ₁	79	44 ₃	48 ₄
C	97	56	67 ₅	74	7 ₈	24 ₇
D	82	69	74 ₄	77	22 ₃	47 ₅
E	92	80	86 ₂	88	66 ₁	77 ₁
F	79	54	62 ₇	73	40 ₄	51 ₃
G	88	52	57 ₈	68	62 ₂	63 ₂
H	88	60	63 ₆	58	12 ₇	1 ₀



120
12

Country A is said to dominate B (or B is dominated by A) when A has a higher percentage in total coverage for both drinking water and sanitation facilities and is denoted as $A > B$ (or $B < A$). A country is said to be on the coverage frontier if no other country dominates it. Similarly, a country is not on the coverage frontier if it is dominated by at least one other country.

20. Which countries are on the coverage frontier?

- 1) A and C
- 2) F and G
- 3) B and E
- 4) D and H

21. Using only the data presented under the 'sanitation facilities' column, it can be concluded that the rural population in Country A, as a percentage of its total population is approximately:

- 1) 79
- 2) 73
- 3) 69
- 4) none of these

22. Using only the data presented under the 'sanitation facilities' column, the countries C, E and F are sequenced in non-decreasing order of the rural population as a percentage of their respective total population. The correct order is:

- 1) E,F,C
- 2) F,C,E
- 3) F,E,C
- 4) C,F,E

23. Country A is not on the coverage frontier because

- i) It is lower than Country B in terms of the coverage of drinking water facilities.
- ii) It is lower than Country G in terms of the coverage of sanitation facilities.
- iii) It is lower than Country D in terms of the coverage of sanitation facilities.
- iv) It is dominated by Country F.

- 1) i and ii
- 2) i and iii
- 3) iv
- 4) none of these

Refer to the following dataset and solve questions from 24 to 25 based on it. The following table presents percent change in population of major cities in India from 2007-2009.

Cities	07 to 08	08 to 09
Delhi	+10	-10
Mumbai	-20	+9
Chennai	+5	+12
Kolkata	-7	-15
Bangalore	+17	-8



24. In 2009, for which of the cities was the population is greater than that of any of the other cities shown?

- 1) Delhi
- 2) Mumbai
- 3) Bangalore
- 4) Cannot be determined

25. In Bangalore, the population for 2008 was approximately what percent of the population for 2009?

- 1) 127%
- 2) 92%
- 3) 109%
- 4) Cannot be determined

Handwritten calculations for question 25:
 $\frac{117}{100} \times 100 = 117\%$
 $\frac{117}{100} \times 100 = 117\%$
 $\frac{117}{100} \times 100 = 117\%$
 $\frac{117}{100} \times 100 = 117\%$
 $\frac{117}{100} \times 100 = 117\%$

SECTION - II

26. If Jimmy takes the bus, he'll be late. Which of the following must be definitely true?

- 1) If Jimmy doesn't take the bus he won't be late
- 2) If Jimmy is late, he must have taken the bus
- 3) If Jimmy isn't late, he must have not taken the bus
- 4) None of these

27. If session M is assigned to the third period, then which of the following must be true?

- 1) N is assigned to the sixth period.
- 2) O is assigned to the first period.
- 3) S is assigned to the fourth period.
- 4) T is assigned to the fifth period.

28. Irene, Ann, Loui, and Dino are standing in an alphabetical line. Irene has a monkey which can jump from person in the line to the next person or back (but he can't jump 2 people in a row). If the monkey made 3 jumps, where can he not be?

- 1) Dino or Loui
- 2) Irene or Ann
- 3) Loui or Irene
- 4) None of these

Handwritten diagram for question 28:
L ✓
M G
T G
T G L M

29. If Arun is taller than Krishnan and Krishnan is taller than Arjun, and Shankar is taller than Krishnan and Milan then which of the following statements must be true?

- 1) Arun is taller than Shankar
- 2) Krishnan is shorter than Milan
- 3) Arun is taller than Milan
- 4) Shankar is taller than Arjun

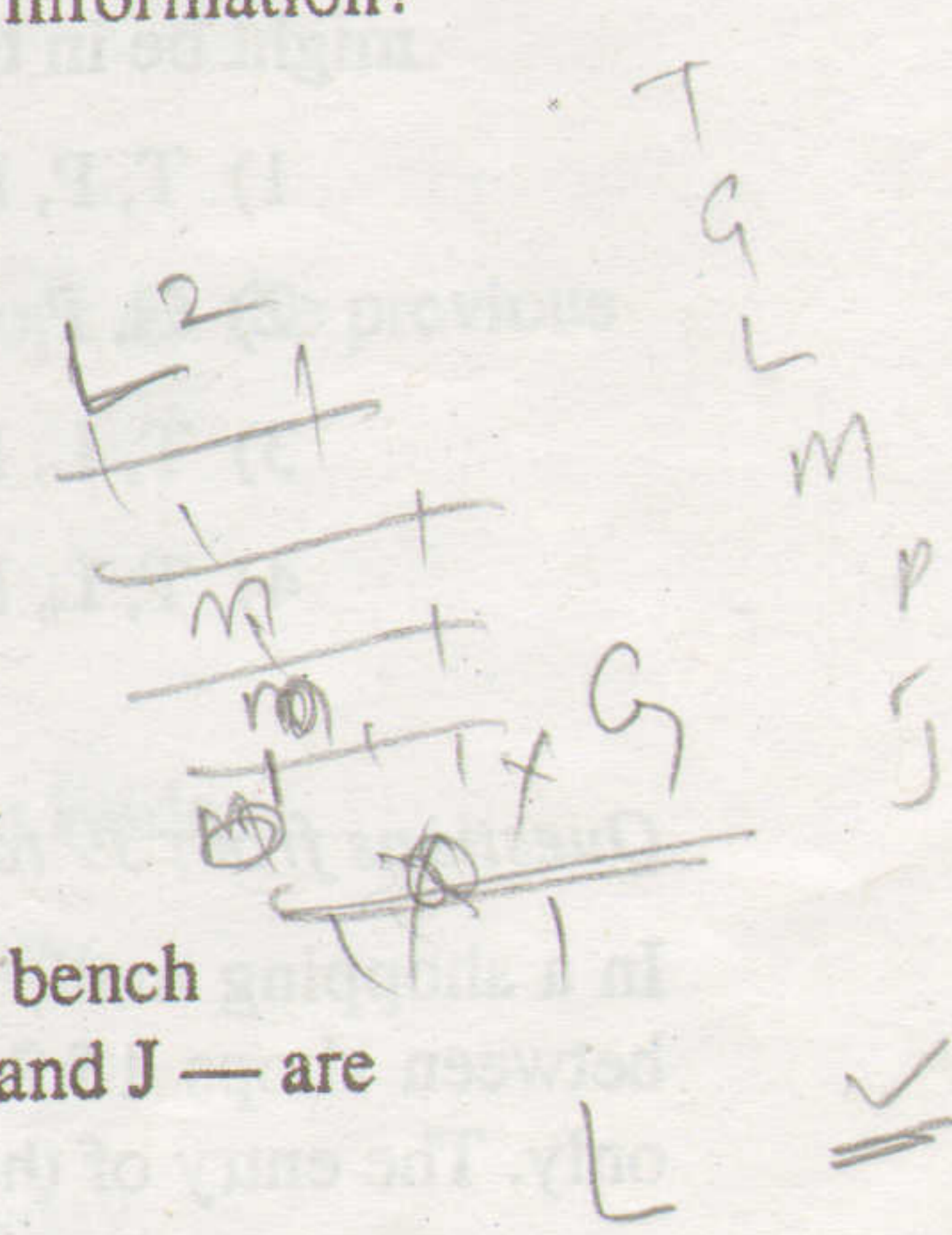
Handwritten lines for question 29:



30. John, Benzy, Suman and Robert are putting together a band. They need a singer, a bass player, a drummer and a guitarist. If Suman can play the bass and sing, John can sing and drum, Robert can drum and play the guitar, and Benzy can play the guitar, which of these arrangements make sense?
- 1) John – drum, Suman- bass, Robert- sing, Benzy- guitar
 - 2) John – sing, Suman – bass, Robert- drum, Benzy – guitar
 - 3) John – drum, Suman – sing, Robert- bass, Benzy – guitar
 - 4) John - sing, Suman - drum, Robert- bass, Benzy – guitar
31. Ten new television shows appeared during the month of March 2009. Five of the shows were rural based family drama, three were music and dance shows, and two were news shows. By January 2010, only seven of these new shows were still on the air. Five of the shows that remained were rural based family drama. Which of the following statement must be true according to the given information?
- 1) Only one of the news shows remained on the air.
 - 2) Only one of the music and dance show, remained on the air.
 - 3) At least one of the shows that were cancelled was music and dance shows.
 - 4) Television viewers prefer rural based family drama over music and dance shows.
32. Ram and Shyam take a vacation at their grandparents' house. During the vacation, they do any activity together. They either played tennis in the evening or practiced Yoga in the morning, ensuring that they do not undertake both the activities on any single day. There were some days when they did nothing. Out of the days that they stayed at their grandparents' house, they involved in one of the two activities on 22 days. However, their grandmother while sending an end of vacation report to their parents stated that they did not do anything on 24 mornings and they did nothing on 12 evenings. How long was their vacation?
- 1) 29 days
 - 2) 36 days
 - 3) 14 days
 - 4) Cannot be determined
33. Leena lives in a large city on the East Coast. Her younger cousin Reena lives in Western India in a small town with less than 1, 000, 00 residents. Reena has visited Leena several times during the past five years. In the same period of time, Leena has visited Reena only once. Which of the following statement must be true according to the given information?
- 1) Reena likes Leena better than Leena likes Reena.
 - 2) Leena thinks small towns are boring.
 - 3) Leena is older than Reena.
 - 4) Reena wants to move to the East Coast.

Answer the following questions 34-38 based on the passage below.

In an exam, there are five benches, numbered 1 through 5 from front to back. Each bench accommodates up to two persons, seated side by side. Six people — T, G, L, M, P and J — are writing the examination.



- L is sharing the bench with someone.
 - M is not sharing a bench and is seated immediately behind an empty bench.
 - T is not sharing a bench with either G or P.
 - G is in either the third or fourth bench.
34. Which of the following groups of students could occupy the second bench?
- 1) J, G, and P
 - 2) T and G
 - 3) L and M
 - 4) J and T
35. If Gwen is riding immediately behind Laurie's car and immediately ahead of Tom's car, all of the following must be true EXCEPT:
- 1) G is in the fourth bench.
 - 2) P is in the third bench.
 - 3) T is in the fifth bench.
 - 4) L is in the third bench.
36. Which one of the following statements CANNOT be true?
- 1) Neither T nor G is sharing a bench with another student
 - 2) Neither M nor J is sharing a bench with another student.
 - 3) T is sharing a bench, and J is sharing a bench.
 - 4) G is sharing a bench, and P is sharing a bench.
37. If P is in the second bench, how many different combinations are possible for the third bench?
- 1) one
 - 2) two
 - 3) three
 - 4) four
38. Assume that a seventh student is with J in the first bench, but that all other rules remain unchanged. Which of the following is a complete and accurate list of the students who might be in the fifth bench?
- 1) T, P, L, M
 - 2) G, P
 - 3) T, L, P
 - 4) T, L, M

Questions from 39 to 40 are based on the following passage:

In a shopping mall, 10 shops (numbered from 1 to 10) are connected by corridors. Corridors exist between shops 1&2, 1&5, 1&7, 2&3, 2&8, 3&4, 4&5, 5&6, 6&7, 6&10, 7&8, 8&9, and 9&10 only. The entry of the mall is through Shop 1 and all shops have exit doors.



39. What is the maximum number of shops a customer can visit without visiting a shop more than once?
- 1) 7
 - 2) 8
 - 3) 9
 - 4) 10
40. What is the minimum number of corridors (without repeating any) a customer passes through when visiting all 10 shops?
- 1) 9
 - 2) 10
 - 3) 11
 - 4) 12

Questions from 41 to 43 are based on the following passage:

Mrs. Green wishes to renovate her cottage. She hires the services of a plumber, a carpenter, a painter, an electrician, and an interior decorator. The renovation is to be completed in a period of one working week i.e. Monday to Friday. Every worker will be taking one complete day to do his job. Mrs. Green will allow just one person to work per day.

- The painter can do his work only after the plumber and the carpenter have completed their jobs.
 - The interior decorator has to complete his job before that of the electrician.
 - The carpenter cannot work on Monday or Tuesday.
41. In case the painter works on Thursday, which among the following alternatives is possible?
- 1) The electrician works on Tuesday.
 - 2) The electrician works on Friday.
 - 3) The interior decorator does his work after the painter.
 - 4) The plumber and the painter work on consecutive days.
42. In case the painter works on Friday, which among the following statements must be untrue?
- 1) The carpenter may work on Wednesday.
 - 2) The carpenter and the electrician may work on consecutive days.
 - 3) In case the carpenter works on Thursday, the electrician has to work on the previous day i.e. Wednesday.
 - 4) The plumber may work before the electrician does.
43. Which arrangement among the following is possible?
- 1) The electrician will work on Tuesday and the interior decorator on Friday.
 - 2) The painter will work on Wednesday and the plumber on Thursday.
 - 3) The carpenter will work on Tuesday and the painter on Friday.
 - 4) The carpenter will work on Wednesday and the plumber on Thursday.

