

A1

Sample Question Paper

Class-IX

Time Allowed: Two hours

Maximum Marks: 90

This Test Booklet contains 21 pages. Do not open this Test Booklet until you are asked to do so.

Important Instructions:

01. The Answer Sheet is inside this Test Booklet. When you are directed to open the Test Booklet, take out the Answer Sheet and fill in the particulars on Side-1 and Side-2 carefully with blue/black ball point pen only.
02. The Test Booklet Code for this Test Booklet is A1. The Candidate should check carefully that the Test Booklet Code printed on Side-2 of the Answer Sheet is the same as printed on Test Booklet. In case of discrepancy, the candidate should immediately report the matter to the invigilator for replacement of both the Test Booklet and the Answer Sheet.
03. The Test Booklet contains 60 questions divided into three sections A, B and C. A candidate is required to attempt all the three sections. There are 24 questions in section A, 18 Questions in section B and 18 questions in section C.

Section A : Language Conventions (Question Nos 1 to 24)

To be attempted either from English Language or from Hindi Language

Section B : Qualitative Reasoning (Questions 25 to 42)

Section C : Quantitative Reasoning (Questions 43 to 60)

04. All the three sections contain Multiple Choice Questions (MCQs). Some of these questions are passage based MCQs whereas others are stand alone MCQs. Each of these questions has four options out of which only ONE option is correct. A candidate has to select the correct option and fill the corresponding number in the Answer Sheet against the question.
05. Each Question carries 1 ½ marks. For each correct response, the candidate will get 1 ½ marks. There is no negative marking for any of the questions and unattempted question earns no mark.
06. The candidates should not leave the Examination Hall without handing over their Answer Sheet to the Invigilator on duty and sign the Attendance Sheet. Cases where a candidate has not signed the Attendance Sheet or the Answer Sheet not handed over to the Invigilator shall be dealt as an Unfair means case.
07. On completion of the test, the candidates **MUST HAND OVER THE ANSWER SHEET TO THE INVIGILATOR** in the room/hall. The candidates are allowed to take away this Test Booklet with them.
08. Use blue/ black ball point pen only for writing particulars on this page and writing or marking responses on Answer Sheet.
09. The candidates should ensure that the answer sheet is not folded or damaged. Do not make any stray marks on the answer sheet.
10. The candidates are governed by all Rules and Regulations of the Board with regard to their conduct in the Examination Hall. All cases of unfair means will be dealt with as per Rules and Regulations of the Board

Registration No : -----

Candidate's Name : -----

Candidate's Signature : ----- Invigilator's Signature :-----

Section –A (Language Conventions)

Note: This section of the question paper contains 24 questions each in English Language and Hindi Language . A candidate is required to attempt all the 24 questions in one language only (Either is English Language or in Hindi Language).

English Language Questions 1 to 24

(Questions 1 to 8) Read the following passage carefully and select the most suitable option from each list according to the corresponding number in the passage.

The Indian Peafowl, ¹alternatively known as the Blue Peafowl, is the national bird of India. The male is called a ²peecok and has feathers which are made up of ³a range of beautiful colours. The female is called a peahen. ⁴The majority of the female's feathers are a ⁵plain brown colour. These birds usually ⁶live in ⁷sparsely populated areas such as forests and don't fly very often. ⁸They eat berries, seeds and sometimes snakes or small animals.

Q 1. Which of the following could replace 'alternatively' as used in the passage above?

- 1) and
- 2) also
- 3) then
- 4) never

Q 2. Which of the following is the correct spelling of 'peecok'?

- 1) peacok
- 2) peacock
- 3) peecock
- 4) peakock

Q 3. Which of the following could replace 'a range of' as used in the passage above?

- 1) pretty
- 2) unusual
- 3) a group of
- 4) a selection of

Q 4. Which of the following is the opposite in meaning to 'majority' as used in the passage above?

- 1) lots
- 2) several
- 3) nearly all
- 4) not many

Q 5. Which of the following could replace 'plain' as used in the passage above?

- 1) pale
- 2) dark
- 3) simple
- 4) gentle

Q6. Which of the following could replace 'sparsely' as used in the passage above?

- 1) lightly
- 2) heavily
- 3) densely
- 4) narrowly

Q 7. Which of the following could replace 'populated' as used in the passage above?

- 1) popular
- 2) settled
- 3) liveable
- 4) uninhabited

Q8. Which of the following could replace 'They' as used in the passage above?

- 1) People
- 2) Hunters
- 3) Animals
- 4) Peafowl

(Questions 9 to 12) This passage contains errors and an omission. Choose the correct option from the lists below to correct these errors and complete the passage.

The commonwealth Games were held in India in 2010. (9)

It was very successful and the attendances were high. 10)

A village was built for the athletes besides the stadium. (11)

During an interview, the TV commentator said, _____(12)

Q9

- 1) Comma required after 'Games'.
- 2) 'Games' should not begin with a capital.
- 3) Capital letter required for 'commonwealth'
- 4) Apostrophe required after 'commonwealth'

Q10

- 1) They are
- 2) They was
- 3) They were
- 4) They been

Q11

- 1) near
- 2) close
- 3) inside
- 4) toward

Q12

- 1) These were the best games ever.
- 2) "These were the best games ever!"
- 3) "These were the best games ever"!
- 4) "that these were the best games ever."

(Questions 13 to 16) In this passage, errors or parts of a sentence which have been left out, have been underlined. To correct these errors and correctly complete the passage, choose the correct option from the lists below.

Bina the zookeeper woke early although she wanted to see the tiger (13)

give birth. The zoo vet were hoping that the event would be (14)

successful and had stayed with the tiger overnight. When he arrived (15)

at work, the excitement was already beginning to build
_____ . (16)

Q13.

- 1) because
- 2) however
- 3) therefore
- 4) as a result of

Q14.

- 1) will hope
- 2) is hoping
- 3) had hoped
- 4) was hoping

Q15.

- 1) she
- 2) they
- 3) the vet
- 4) the man

Q16.

- 1) because there was a new cage for the tiger.
- 2) as it seemed that the cub's arrival was close.
- 3) when the tiger cub went to the pond to have a drink of water.
- 4) since the sun was shining and it was a joyful day for everyone.

(Questions 17 to 20) Complete this passage by selecting the most suitable option from the list for the corresponding gap.

Dieticians claim that to maintain a healthy body, we __(17)__ to stay away from high calorie foods.

But selecting low calorie nutritious foods __(18)__ quite a daunting task.

Selecting food, studying nutrition facts on food labels and preparing meals all seem to add to the feeling that healthy eating is __(19)__.

Another barrier to healthy eating is the marketing of cheap, pre-packaged foods that has made it so much easier to reach out for a __(20)__ snack.

Q17.

- 1) may try
- 2) should try
- 3) might have tried
- 4) would have tried

Q18.

- 1) can be
- 2) should be
- 3) may have been
- 4) would have been

Q19.

- 1) a simple effort.
- 2) easily achievable.
- 3) urgently required.
- 4) a demanding task.

Q20.

- 1) cheap low calorie
- 2) simple and natural
- 3) tempting unhealthy
- 4) pre-packaged healthy

(Questions 21 to 24) Complete this passage by selecting the correct option from the list for the corresponding gap.

Bankim Chandra Chatterjee was one of the greatest novelists and poets of India. He is (21) for being the author of Vande Mataram, the National Song of India. Chatterjee began his (22) career as a writer of verse, but (23) turned to writing fiction. Bankim Chatterjee was a superb story-teller and he enjoyed universal popularity. His novels have been (24) into almost all of the major languages of India.

Q21.

- 1) blessed
- 2) splendid
- 3) infamous
- 4) acclaimed

Q 22.

- 1) prior
- 2) literary
- 3) life long
- 4) song writing

Q 23.

- 1) later
- 2) prior
- 3) firstly
- 4) meanwhile

Q 24.

- 1) reworded
- 2) translated
- 3) explained
- 4) paraphrased

OR

भाषा (हिंदी) प्रश्न संख्या 1 से 24

निर्देश- निम्नलिखित प्रश्न संख्या 1 से 8 में सबसे सही विकल्प चुनिए-

1. 'घोड़ा बहुत तेज़ दौड़ता है।' वाक्य में प्रविशेषण है -
 - 1) घोड़ा
 - 2) तेज़
 - 3) बहुत
 - 4) दौड़ता
2. वर्तनी की दृष्टि से शुद्ध शब्द है -
 - 1) रिपोर्ट
 - 2) अधेरा
 - 3) परिक्षा
 - 4) आशीर्वाद
3. 'वि' उपसर्ग से निर्मित शब्द नहीं है-
 - 1) विकर्ण
 - 2) विदेश
 - 3) विजय
 - 4) विजात
4. 'इक' प्रत्यय से बनने वाला शब्द है-
 - 1) बाटिक
 - 2) अधिक
 - 3) जैविक
 - 4) नासिक
5. 'मैंने एक आदमी देखा जो बहुत बीमार था।' रचना के आधार पर यह वाक्य है -
 - 1) सरल
 - 2) संयुक्त
 - 3) मिश्र
 - 4) विधानवाचक
6. 'हवा धीरे-धीरे बह रही है।' वाक्य में रेखांकित क्रिया विशेषण है -
 - 1) रीतिवाचक
 - 2) काल वाचक
 - 3) परिमाण वाचक
 - 4) स्थान वाचक
7. 'फूल पर तितली बैठी है।' वाक्य का बहुवचन रूप है -
 - 1) फूल पर तितलियाँ बैठी है।
 - 2) फूलों पर तितली बैठी है।
 - 3) फूलों पर तितलियाँ बैठी हैं।
 - 4) तितलियाँ फूल पर बैठी हैं

8. 'बस में चढ़ जाओ।' रेखांकित अंश में कारक है-

- 1) करण
- 2) अधिकरण
- 3) संप्रदान
- 4) कर्म

निर्देश- निम्नलिखित प्रश्न संख्या 9 से 16 में सबसे उचित विकल्प का चयन कीजिए-

9. 'सुनंदा बहुत वाचाल है।' वाक्य में रेखांकित शब्द का अर्थ है-

- 1) बहुत बोलने वाली
- 2) बहुत मधुर बोलने वाली
- 3) बहुत कटु बोलने वाली
- 4) अकारण बोलने वाली

10. नीलगाय ने सारी फसल कर दी।

- 1) नष्ट-भ्रष्ट
- 2) पथ-भ्रष्ट
- 3) तहस-नहस
- 4) रौंद

11. जिंदगी में खड़ा होने वाला ही सफल होता है।

- 1) परिश्रम कर
- 2) धोखा खाकर
- 3) मरकर
- 4) गिरकर

12. 'जब तुम खूब मेहनत करोगे तो परीक्षा में अक्वल आओगे।' तभी तो कहा गया है-

- 1) अपना हाथ जगन्नाथ
- 2) अपनी करनी पार उतरनी
- 3) अंत भला तो सब भला
- 4) का बरखा जब कृषि सुखानी

13. हमें चेष्टा नहीं करनी चाहिए।

- 1) अनाधिकार
- 2) साधिकार
- 3) सप्रयास
- 4) अनधिकार

14. 'मामाजी ने सरपंच का गर्म जोशी से स्वागत किया।' वाक्य के रेखांकित अंश के लिए उचित मुहावरा है-

- 1) आड़े हाथों लेना
- 2) हाथों-हाथ लेना
- 3) बोल- बोला करना
- 4) घी के दीए जलाना

15. आकाश भेदना और फोड़ना सबके वश में नहीं होता।

- 1) पाताल
- 2) धरती
- 3) ज़मीन
- 4) सागर

16. अब तो सुदिन बीत गए। वाक्य में रेखांकित शब्द का अर्थ है-

- 1) सौ दिन
- 2) अच्छे दिन
- 3) अतीत के दिन
- 4) बुरे दिन

निर्देश- नीचे दिए गए अनुच्छेद को पढ़कर प्रश्न संख्या 17 से 24 में उचित विकल्प का चयन कीजिए-
गांधी अहिंसा में विश्वास करते थे (17)..... कट्टर वैष्णव थे। वे बीमारी में (18).....
..... अपने बेटे या पत्नी की या (19)..... जान बचाने के लिए अंडा, मांस
(20)..... शोरबा या ऐसी दवा नहीं लेते (21)..... जिसमें किसी जीव की
हिंसा हुई (22).....। गांधी ने देखा था कि दूध (23)..... अंतिम बूँद
निचोड़ने के लिए गाय- (24)..... को किस प्रकार की यंत्रणा पहुँचाई जाती है और इसी
कारण उन्होंने गाय या भैंस का दूध लेना छोड़ दिया था।

17. 1) कि
2) इतने
3) वे
4) और

18. 1) ग्रस्त
2) पीड़ित
3) भी
4) और

19. 1) उनकी
2) अपनी
3) दोनों
4) उसकी

20. 1) का
2) की
3) के
4) और

21. 1) हैं
2) पर
3) थे
4) थी

22. 1) है
2) थी
3) हैं
4) हो

23. 1) का
2) की
3) के
4) में

24. 1) बैलों
2) भैंसों
3) भेड़ों
4) बकरियों

Section- B (Qualitative Reasoning) Questions 25 to 42

(Questions 25-30) Read the following passage and answer the questions that follow:

The cleaner's name

During their last year at school, a teacher gave his students a questionnaire about Life Skills. One conscientious student had breezed through the questions until he read the last one: "What is the first name of the woman who cleans at your floor in the school?" Surely this was some kind of joke. He had seen the cleaner several times. She was tall, dark-haired and in her 50s, but how would he know her name? He handed in his paper, leaving the last question blank.

Just before class ended, the student asked if the last question was important. "Absolutely", said the teacher. "In your career, you will meet many people. All are significant. They deserve your attention and care, even if all you do is learn their name, smile and say "hello."

That afternoon, the student found the cleaner. "I wanted to thank you for the work you do," he said. "May I ask your name?"

.....

Q.25 The teacher gave the students this questionnaire "during their last year at school" because it tests skills that

- 1) will be learned after school ends.
- 2) were taught in the final school year.
- 3) are learned throughout all schooling.
- 4) universities and colleges will require.

Q.26 The student in the story was surprised by the last question because he assumed that

- 1) learning is only academic.
- 2) the woman was not a cleaner
- 3) there would be multiple choices.
- 4) he would know the cleaner's name.

Q.27 The final paragraph of the story shows that the student

- 1) put the theory into practice.
- 2) had difficulty finding the cleaner.
- 3) misunderstood the teacher's point.
- 4) wants to complete the questionnaire.

Q.28 The student in the story learned the importance of

- 1) tactics.
- 2) humility.
- 3) politeness.
- 4) lateral thinking.

Q.29 The teacher put the question about the cleaner on the questionnaire for the benefit of

- 1) the cleaner.
- 2) the whole class.
- 3) this particular student.
- 4) the teacher him/herself.

Q.30 The text is best described as a

- 1) moral tale.
- 2) urban legend.
- 3) children's story.
- 4) humorous anecdote.

(Questions 31-36) Read the following two scenarios and answer the questions that follow:

Scenario 1

Sheena lives with her extended family. She aspires to be a doctor. She likes to devote more and more time to her studies but when she returns home from school her grandmother wants her to get involved in household chores. Whenever she sits down to study she is made to get up on the pretext of one thing or the other. Her parents find themselves helpless as they feel they shouldn't argue with elders. Her grades have started going down.

Scenario 2

Yash is fascinated by cars and hopes to be an automobile engineer one day. He wants to opt for science but his businessman father feels that he should opt for commerce and take care of the family hotel and restaurant business when he grows up. He is good at mathematics and science but lacks concentration and likes doing lots of things at the same time. His father feels that he won't be successful in life if he opts for science and is very upset with him.

.....

Q.31 Which of these words best describes the interpersonal relationships described in the first scenario?

- 1) positive
- 2) friendly
- 3) conflicting
- 4) supportive

Q.32 The words 'shouldn't argue with elders' is about which attribute?

- 1) love
- 2) trust
- 3) respect
- 4) confidence

Q. 33 Which of the following strategies could resolve the issues for everyone in both scenarios?

- 1) being obedient
- 2) changing aspirations
- 3) communicating openly
- 4) devoting more time to study

Q.34 The second scenario clearly states that

- 1) Yash will take over the family business.
- 2) The father values commerce as a career.
- 3) Yash will become an automobile engineer.
- 4) A child must take over the family business.

Q. 35 What conclusion can be drawn from both scenarios?

- 1) There is only one path to a successful life.
- 2) Students should be able to do what they want.
- 3) To achieve their goals students need to work harder.
- 4) Children and their parents may have different points of view.

Q. 36 What conclusion can be drawn from scenario 1?

- 1) Sheena will become a doctor.
- 2) Sheena's parents want her to do household chores.
- 3) The grandmother has too many household chores to do.
- 4) The grandmother values household chores above study.

Q.37 There are two rules for making words from the following grid:

1. Words can only use each letter once.
2. Consecutive letters in a word must border each other, including diagonals.

¹ E	² E	³ G	⁴ R
⁵ R	⁶ N	⁷ S	⁸ E
⁹ I	¹⁰ T	¹¹ P	¹² O
¹³ E	¹⁴ D	¹⁵ N	¹⁶ E

Which of the following words obeys the rules for making words?

- 1) green
- 2) spore
- 3) rinse
- 4) tides

(Questions 38 and 39) Read the given statements and answer the questions that follow

- A. Many hands make light work.
- B. Two heads are better than one.
- C. Too many cooks spoil the broth.
- D. A problem shared is a problem halved.

Q.38 Which two sayings express opposite sentiments?

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

Q.39 Which saying encourages people to look to others for emotional support?

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

Q.40 According to Wikipedia, ‘nominative determinism’ is a comparatively recent term for the theory that a person's name can have a significant role in determining key aspects of their job, profession or even character.

Which of the following would **not** be an example of nominative determinism?

1. Will Street – wedding photographer
2. Usain Bolt – Olympic track gold medallist
3. Alan Heavens – professor of astrophysics
4. Sarah Blizzard – television weather presenter

Q.41 Which of the following statements expresses the ideal relationship between the two categories; ‘politicians’ and ‘people with integrity’?

- 1) All politicians are people with integrity.
- 2) All people with integrity are politicians.
- 3) Some people with integrity are politicians.
- 4) Some politicians are people with integrity.

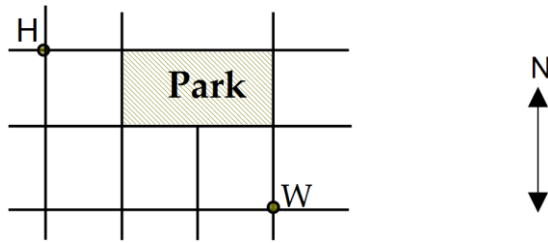
Q.42 If Ajit decided to lie to his parents about a poor test result, what is most likely to be the immediate effect of his decision?

- 1) His end of year report reveals the lie.
- 2) He is worried and doesn't sleep well.
- 3) He does not understand the next unit of his studies.
- 4) His parents learn about the lie when they have an interview with his teacher.

Section –C (Quantitative Reasoning) Questions 43 to 60

Q.43 Rajit likes to take a different route to work each day. He always walks alongside some part of the park, and only ever travels South or East.

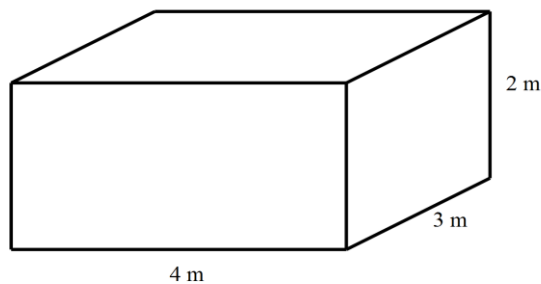
In the diagram below, the lines represent the streets in his area.



How many different routes are there by which Rajit can walk from home (H) to work (W)?

- 1) 3
- 2) 4
- 3) 6
- 4) 8

Q.44 Observe the dimensions of given fish tank carefully:



When it is half full, this fish tank contains 12 000 L of water.

If 6 000 L of water is added to the tank, how high will the water level rise?

- 1) 25 cm
- 2) 50 cm
- 3) 75 cm
- 4) 100 cm

Q.45 In a market in Delhi, the price of a bag of 8 apples was ₹180. On the same day in Varanasi, a market was selling 5 apples for ₹100. A 3 kg bag was priced at ₹380 in Kolkata that day. In Mumbai, apples were selling for ₹230 a dozen. The apples each weighed 150 g. Where were the apples the cheapest?

- 1) Delhi
- 2) Kolkata
- 3) Mumbai
- 4) Varanasi

Q.46 Deepa did a Mathematics test with a different design.

Each correct answer scored 8 marks, and each incorrect answer reduced the score by 4 marks. The test contained 30 questions, and after completing it Deepa had a score of zero.

How many questions did she answer correctly?

- 1) 8
- 2) 10
- 3) 12
- 4) 15

Q.47 In a test, Abha scored more than Bodhi, and Chatur scored less than Abha. Who had the lowest score?

- 1) Abha
- 2) Bodhi
- 3) Chatur
- 4) Not enough information provided.

Q.48 A florist made as many identical bunches of flowers as she possibly could, using a total of 100 carnations, 150 tulips and 200 lilies.

How many flowers did she use in each bunch?

- 1) 5
- 2) 9
- 3) 10
- 4) 20

Q.49 Vikhil has an appointment near the train station in the city at 10.30 am. To get to the city, Vikhil needs to catch a bus and then a train. The bus leaves from Vikhil's stop every 10 minutes from 9.00am. The bus trip to the train station takes 25 minutes. From 9.30 am the train leaves for the city every 20 minutes. The train takes 15 minutes to get to the city. If Vikhil wants to arrive as close as possible to the appointment time, what is the latest bus he could catch?

- 1) 9.10 am
- 2) 9.20 am
- 3) 9.30 am
- 4) 9.40 am

Q.50 Hydroponics is used to grow plants in water that contains nutrients. Sourav has a hydroponic vegetable garden with four levels.

Onions are growing immediately above tomatoes.

Capsicums are immediately below chillies.

Potatoes are immediately below tomatoes.

Chillies are not on the top level.

Only one level has two vegetables growing on it.

Which two vegetables are growing on the same level?

- 1) onions and chillies
- 2) potatoes and chillies
- 3) tomatoes and chillies
- 4) potatoes and capsicums

Q.51 For a project in Science, Indira measured the outside temperature at 2pm for six consecutive days. In her table below, the data for Wednesday cannot be seen.

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Temperature ($^{\circ}\text{C}$)	12 $^{\circ}\text{C}$	15 $^{\circ}\text{C}$		23 $^{\circ}\text{C}$	24 $^{\circ}\text{C}$	19 $^{\circ}\text{C}$

When compared with the temperatures for the other five days, the temperature for Wednesday differs by 1 $^{\circ}\text{C}$, 5 $^{\circ}\text{C}$, 6 $^{\circ}\text{C}$, 3 $^{\circ}\text{C}$ and 6 $^{\circ}\text{C}$, but not necessarily in that order.

What was the temperature for Wednesday?

- 1) 13 $^{\circ}\text{C}$
- 2) 18 $^{\circ}\text{C}$
- 3) 20 $^{\circ}\text{C}$
- 4) 25 $^{\circ}\text{C}$

Q.52 Ajay bought a pack of 10 blank DVDs.

He received two discounts.

The marked price of all DVDs was discounted by 20%.

Then, when he went to pay, ₹30 - which was equivalent to 5% of the marked price - was also taken off.

How much change did Ajay get if he paid with a ₹500 note?

- 1) ₹20
- 2) ₹50
- 3) ₹120
- 4) ₹150

(Questions 53 to 56) Read the following passage and answer the questions that follow:

The Pendulum Swing

A child moving backwards and forwards on a swing, the timing mechanism of a Grandfather clock and a weight swung to and fro on the end of a string are all examples of pendulums – devices first studied by the scientist Galileo Galilei in 1581. He noticed that, although all of the lanterns suspended from long chains in a cathedral swung backwards and forwards, they did so at different rates. He started to wonder what had the biggest effect on the period (the time taken for a lantern to make one complete swing forward and backward) – the length of the chain, the mass of the lantern or how far back the lantern was first moved before it started to swing (called its amplitude). As a scientist, he performed hundreds of experiments until he found out that all swinging objects or pendulums followed the same rules: firstly, pendulums that had the same length had the same period regardless of amplitude or the size of the mass at their end and, secondly, that the square of the period in seconds was proportional to the length of the pendulum.

Q.53 In Galileo's experiments to determine how the length of the pendulum affects its period, the independent variable would have been the pendulum's

- 1) time.
- 2) mass.
- 3) length.
- 4) amplitude.

Q.54 While investigating the effect of a pendulum's mass on its period, the pendulum string breaks when you are only half way through collecting your 50 pieces of data. Which course of action is the most likely to produce unreliable results?

- 1) Knotting the string back together and continuing to collect data.
- 2) Using only the data that you collected before the string broke.
- 3) Starting the experiment over again with a new pendulum string.
- 4) Starting the experiment again using the shortened pendulum string.

Q.55 Pendulum A swings twice during the time that pendulum B swings once. What is the relationship between their lengths?

- 1) Pendulum A is twice as long as pendulum B.
- 2) Pendulum B is twice as long as pendulum A.
- 3) Pendulum A is four times longer than pendulum B.
- 4) Pendulum B is four times longer than pendulum A.

Q.56 Two pendulums, of different lengths are pulled back and released at the same time. If one has a period of 2 seconds and the other 3 seconds, how many times in a minute will both pendulums be back at their respective release points at the same time?

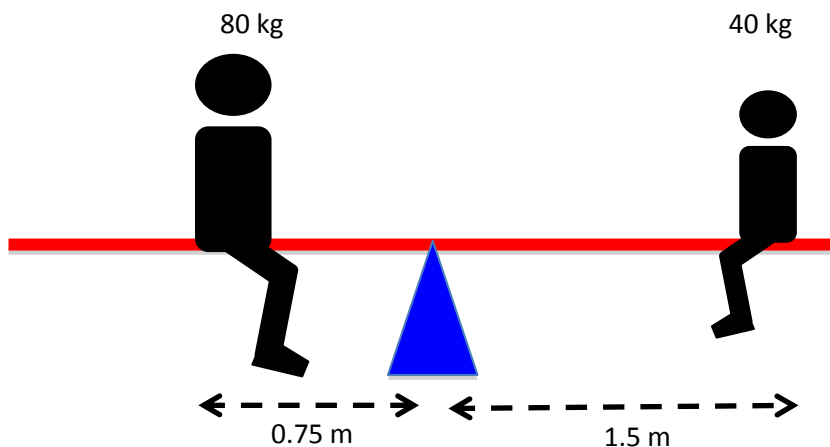
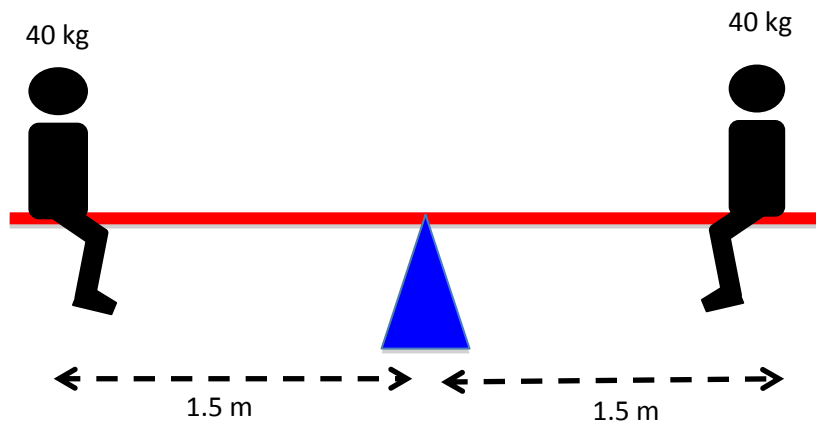
- 1) 10
- 2) 12
- 3) 15
- 4) 40

(Questions 57-60) Use the following information and answer the questions that follow:

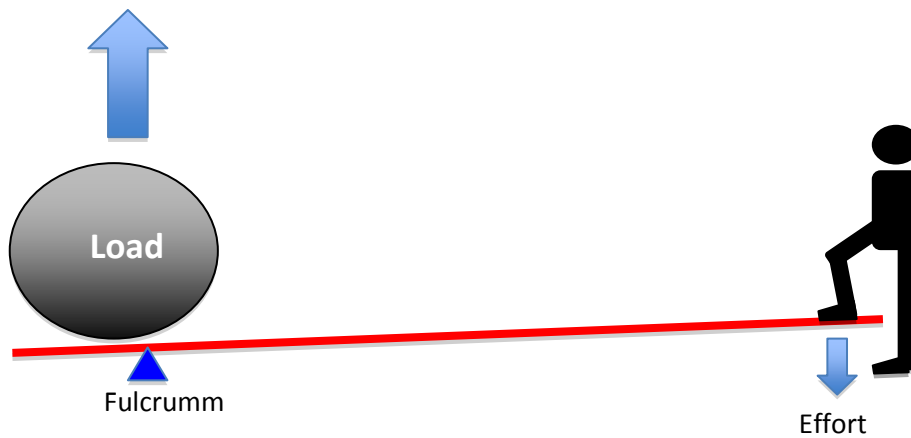
Using levers

The lever is a simple machine that allows an effort force to lift a load by means of a fulcrum or turning point. A seesaw in a playground is an example of a lever, with the riders at either end taking turns to be the load or to apply the effort force. If the riders have the similar weights, the seesaw works well.

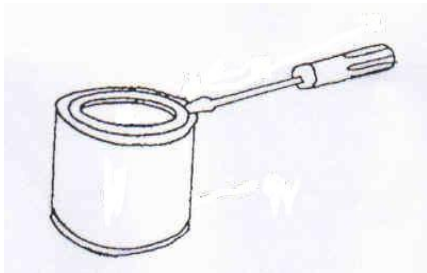
If the difference between the weights of the riders is very large, however, the seesaw can only work properly if the larger person slides closer to the fulcrum. In general, the seesaw functions at its best when the **product** of the weight and the distance from the fulcrum equals the same value for each rider. This is shown in the diagrams below.



This same lever principle also allows us to lift very heavy loads with little effort provided that the lever we use is long enough and the fulcrum is placed close to the load.



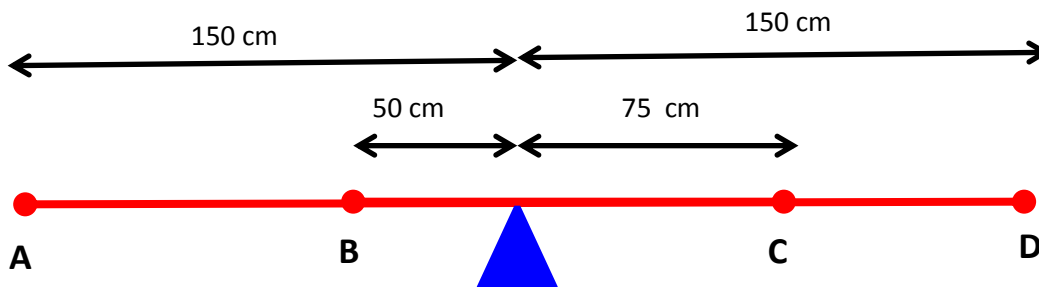
Q.57 When using a screwdriver to open the lid of a can of paint, a lever action is used.



In this situation, the fulcrum of the lever is the

- 1) lid of the paint can.
- 2) rim of the paint can.
- 3) tip of the screwdriver.
- 4) the handle of the screwdriver.

Q.58 A 60 kg woman wants to ride on a playground seesaw with her 20 kg child. Which combination of the positions shown in the table below would provide the most balanced ride?



	Mother's position	Child's position
1)	A	C
2)	D	B

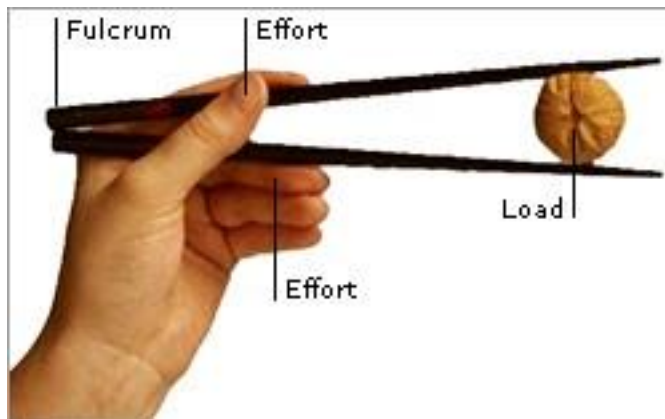
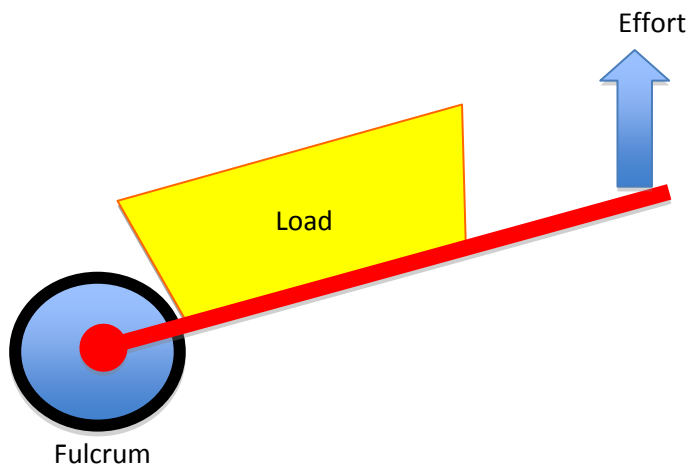
3)	B	C
4)	B	D

Q.59 A farmer uses a 2 m long lever to lift large rocks from the ground of his field. He places a fulcrum 20 cm from the rock end of the lever and then stands on the other end, levering out the rock.

If the farmer weighs 100 kg, what is the heaviest mass of rock that he can lift using this method?

- 1) 200 kg
- 2) 900 kg
- 3) 1800 kg
- 4) 2000 kg

Q.60 Here are two other examples of levers:



Which of the following statements is true?

- 1) Not all levers have a fulcrum.
- 2) The effort force is usually smaller than the load.
- 3) The fulcrum must be between the load and the effort force.
- 4) The effort force and the load need to be the same distance from the fulcrum.