

* Choose The Right Answer From The Given Options.

[19]

1. Which of the following is not a standard unit of measuring length?

- (A) millimetre (B) centimetre (C) kilometre (D) Hand - span

Ans. : (D) Hand - span

2. Which tool is used to measure longer lengths like the height of a room?

- (A) Ruler (B) Measuring tape (C) Compass (D) Handspan

Ans. : (B) Measuring tape

3. Which unit would you use to measure the thickness of a coin?

- (A) Metre (B) Kilogram (C) Millimetre (D) Kilometre

Ans. : (C) Millimetre

4. Each metre (m) is divided into 100 equal divisions, called

- (A) millimetre (B) centimetre (C) decimetre (D) kilometre

Ans. : (B) centimetre

5. A ball rolling on the ground represents

- (A) rectilinear motion (B) rotational motion
(C) Both (a) and (b) (D) None of the above

Ans. : (C) Both (a) and (b)

6. Which type of motion is exhibited by a swinging pendulum?

- (A) Linear motion (B) Circular motion
(C) Oscillatory motion (D) Rotational motion

Ans. : (C) Oscillatory motion

7. We measure the length of a room in the unit

- (A) kilometre (B) metre (C) both (a) and (b) (D) milimetre

Ans. : (B) metre

8. What do we use to measure curved lengths?

- (A) Thread (B) Wood (C) Sand (D) Paper

Ans.: (A) Thread

9. How will you measure a length of Almirah in the absence of measuring scale?

- (A) Ruler (B) Measuring tape (C) Handspan (D) None of these

Ans. : (C) Handspan

10. The girth of a tree can be measured by using a



(A) plastic ruler

(B) measuring tape

(C) metre scale

(D) none of the above

Ans. : (B) measuring tape

11. The distance between two places is 1525 m . This distance is equal to

(A) 15.25 km

(B) 152.5 km

(C) 1.525 km

(D) 0.1525 km

Ans. : (C) 1.525 km

12. A metre scale can measure lengths accurately upto

(A) 1 m

(B) 1 km

(C) 1 mm

(D) 1 cm

Ans. : (C) 1 mm

13. Which one of the following is the smallest unit of length ?

(A) mm

(B) cm

(C) km

(D) m

Ans.: (A) mm

14. We measure the length of a room in the unit

(A) metre

(B) kilometre

(C) millimetre

(D) centimetre

Ans.: (A) metre

15. Each metre (m) is divided into 100 equal divisions, called

(A) decimetre

(B) kilometre

(C) centimetre

(D) millimetre

Ans. : (C) centimetre

16. Which one of the following types of motion will not be exhibited by the moon around the earth ?

(A) rotational motion

(B) circular motion

(C) rectilinear motion

(D) periodic motion

Ans. : (C) rectilinear motion

17. The tip of the seconds hand of a clock is coloured red. Which of the following types of motion will be exhibited by the red coloured tip of the second's hand of this clock?

(A) Rotational and periodic motion

(B) Rotational and circular motion

(C) Periodic and circular motion

(D) Circular and rectilinear motion

Ans. : (C) Periodic and circular motion

18. Which of the following types of motion are possessed by a merry-go-round at the same time ?

(A) Rotational and rectilinear motion



- (B) Rectilinear and periodic motion
- (C) Periodic and rotational motion
- (D) Circular and rotational motion.

Ans. : (D) Circular and rotational motion.

19. Which of the following types of motion are possessed by a football rolling on the ground ?

- (A) Rotational and rectilinear motion
- (B) Rectilinear and circular motion
- (C) Rotational and circular motion
- (D) Rotational and periodic motion

Ans.: (A) Rotational and rectilinear motion

* a statement of Assertion (A) is followed by a statement of Reason (R). Choose the correct option. [10]

20. Assertion (A): For measurements we use International System of Units.
Reason (R): kg is the SI unit of length.

- (A) Both (A) and (R) are true and (R) is the correct explanation of (A).
- (B) Both (A) and (R) are true and (R) is not the correct explanation of (A).
- (C) (A) is true but (R) is false.
- (D) (A) is false but (R) is true.

Ans. : (C) (A) is true but (R) is false.

21. Assertion (A): For measuring the length (L) of an object choose a appropriate device.

Reason (R): We can measure the length (L) of a curved line directly by using a meter scale.

- (A) Both (A) and (R) are true and (R) is the correct explanation of (A).
- (B) Both (A) and (R) are true and (R) is not the correct explanation of (A).
- (C) (A) is true but (R) is false.
- (D) (A) is false but (R) is true.

Ans. : (C) (A) is true but (R) is false.

22. Assertion (A): The objects which are move along a straight line are known as rectilinear motion.

Reason (R): The objects which are moving in a circular form are called 'circular motion' of that object.

- (A) Both (A) and (R) are true and (R) is the correct explanation of (A).
- (B) Both (A) and (R) are true and (R) is not the correct explanation of (A).

(C) (A) is true but (R) is false.

(D) (A) is false but (R) is true.

Ans. : (B) Both (A) and (R) are true and (R) is not the correct explanation of (A).

23. Assertion (A): A branch of a tree moving 'to and fro', motion of a child on a swing and strings of a guitar are the example of periodic motion.

Reason (R): The motion in which an object repeats it's motion after same time is known as periodic motion.

(A) Both (A) and (R) are true and (R) is the correct explanation of (A).

(B) Both (A) and (R) are true and (R) is not the correct explanation of (A).

(C) (A) is true but (R) is false.

(D) (A) is false but (R) is true.

Ans.: (A) Both (A) and (R) are true and (R) is the correct explanation of (A).

24. Assertion (A): The unit of any physical quantity which is acceptable to all of the people as basic unit is called standard unit.

Reason (R): SI units is the set of units used to maintain uniformity all over the world.

(A) Both (A) and (R) are true and (R) is the correct explanation of (A).

(B) Both (A) and (R) are true and (R) is not the correct explanation of (A).

(C) (A) is true but (R) is false.

(D) (A) is false but (R) is true.

Ans. : (B) Both (A) and (R) are true and (R) is not the correct explanation of (A).

25. Assertion (A) : International system of units (S.I. unit) are now being used.

Reason : Cubit, hand span vary from person to person.

(A) Both (A) and (R) are true and (R) is the correct explanation of (A).

(B) Both (A) and (R) are true and (R) is not the correct explanation of (A).

(C) (A) is true but (R) is false.

(D) (A) is false but (R) is true.

Ans.: (A) Both (A) and (R) are true and (R) is the correct explanation of (A).

26. Assertion (A) : Motion of a sprinter running on a straight track is rectilinear motion.

Reason : Rectilinear motion takes place in a fixed direction.

(A) Both (A) and (R) are true and (R) is the correct explanation of (A).

(B) Both (A) and (R) are true and (R) is not the correct explanation of (A).

(C) (A) is true but (R) is false.

(D) (A) is false but (R) is true.



Ans.: (A) Both (A) and (R) are true and (R) is the correct explanation of (A).

27. Assertion (A) : When an object moves along a circular path, it is called circular motion.

Reason : The movement of moon around the earth is circular motion.

(A) Both (A) and (R) are true and (R) is the correct explanation of (A).

(B) Both (A) and (R) are true and (R) is not the correct explanation of (A).

(C) (A) is true but (R) is false.

(D) (A) is false but (R) is true.

Ans. : (B) Both (A) and (R) are true and (R) is not the correct explanation of (A).

28. Assertion (A) : The movement of all the planets around the sun is circular motion.

Reason : Motion of a boy sliding down a slope is circular.

(A) Both (A) and (R) are true and (R) is the correct explanation of (A).

(B) Both (A) and (R) are true and (R) is not the correct explanation of (A).

(C) (A) is true but (R) is false.

(D) (A) is false but (R) is true.

Ans. : (C) (A) is true but (R) is false.

29. Assertion (A) : When an object moves along a circular path, it is called rectilinear motion.

Reason: Rectilinear motion takes place in a fixed direction.

(A) Both (A) and (R) are true and (R) is the correct explanation of (A).

(B) Both (A) and (R) are true and (R) is not the correct explanation of (A).

(C) (A) is true but (R) is false.

(D) (A) is false but (R) is true.

Ans. : (D) (A) is false but (R) is true.

*** Fill In The Blanks With Correct Alternative.**

[25]

30. A _____ is used for measuring the length of table.

Ans. : measuring tape/ruler

31. 2000 cm is equal to _____ m.

Ans. : 20

32. The length of a curved line can be measured by using a _____ .

Ans. : thread or measuring tape

33. The motion of moon around earth is _____ motion.

Ans. : periodic

34. A plucked string of a sitar executes _____ motion.

Ans. : periodic/oscillatory

35. Motion that _____ itself after same period of time is called periodic motion.

Ans. : repeats

36. The earth moving in its orbit shows _____ as well as _____ motion.

Ans. : circular, rotational

37. The basic unit of length in the metric system is the _____.

Ans. : metre

38. 10 m is equal to _____ cm.

Ans. : 1000

39. Circular motion involves movement around a _____ point.

Ans. : centre

40. 1 cm = _____ mm.

Ans. : 10

41. 1 km = _____ m.

Ans. : 1000

42. We can use a _____ to measure the size of our chest.

Ans. : measuring tape

43. Motion of blade of an electric fan is an example of _____ motion.

Ans. : circular

44. Motion of pendulum of a clock is an example of _____ motion.

Ans. : oscillatory

45. The rotational motion of the earth is _____.

Ans. : periodic

46. While reading the scale, the eye should be placed _____ above the scale mark being read.

Ans. : vertically

47. Every measurement consists of a number and a _____ .

Ans. : unit

48. A falling stone exhibits _____ motion.

Ans. : rectilinear

49. The S.I. unit of measuring length is _____.

Ans. : metre

50. A ruler is a short scale marked in _____ and _____ .



Ans. : centimetres, millimetres

51. The scale should be placed _____ to the side of the object being measured.

Ans. : parallel

52. The change in position of an object with time is called _____.

Ans. : motion

53. A _____ is used for measuring the waistline of a person.

Ans. : measuring tape

54. An athlete running a 100 m race along a straight track is said to undergo _____ motion.

Ans. : rectilinear

*** State Whether The Sentences Are True Or False.[1 Marks Each] [28]**

55. The motion of a car moving on a straight road is an example of linear motion.

Ans. : True

56. Any object which is changing its position with respect to a reference point with time is said to be in motion.

Ans. : True

57. 1 km = 100 cm

Ans. : False

58. The SI unit of distance is cm.

Ans. : false

59. The motion of a spinning top is linear motion.

Ans. : false

60. The motion of a body falling freely under gravity is linear motion.

Ans. : true

61. A ruler/metre rod can be used for measuring a curved line.

Ans. : false

62. Linear motion occurs when an object moves in a curved path.

Ans. : false

63. A ruler is used to measure longer lengths like the height of a building.

Ans. : false

64. A rotating fan is an example of rotational motion.

Ans. : true

65. Motion of a wheel of a car is rectilinear as well as circular motion.



Ans. : true

66. A cloth merchant uses a metre rod to measure the length of cloth.

Ans. : true

67. A child swinging on a swing shows rectilinear motion.

Ans. : false

68. The object which does not change its position with time is said to be at rest.

Ans. : true

69. A motion which takes place along a curved path is called circular motion.

Ans. : true

70. The needle of a swing machine is random motion.

Ans. : false

71. Metre is the unit of length in SI system.

Ans. : true

72. A flying bird in the sky is at rest.

Ans. : false

73. An object is said to be in motion if its position changes with respect to a referent point with time.

Ans. : true

74. The motion of a spinning top is rotational motion.

Ans. : true

75. The S.I. unit of distance is kilometre.

Ans. : false

76. The motion which repeats itself after regular interval of time, is called periodic motion.

Ans. : true

77. A sewing machine exhibits two types of motion at the same time rotational as well as periodic motion.

Ans. : true

78. The movement of earth around the sun is an example of pendulum.

Ans. : true

79. The swinging of pendulum of a pendulum.

Ans. : false

80. Clock is a rectilinear motion.

Ans. : false

81. A ball rolling on the ground has two types of motion : rotational as well as rectilinear motion.

Ans. : true

82. Rectilinear motion is not exhibited by the earth moving around the sun.

Ans. : true

*** Answer The Following Questions In One Sentence.[1 Marks Each]**

[27]

83. What is the SI unit of length?

Ans. : Metre

84. How many centimetres are there in a metre?

Ans. : 100

85. How many millimetres are there in a centimetre?

Ans. : 10

86. What body part do you and your friends use to measure the table?

Ans. : Handspan

87. What flexible tool can be used to measure the girth of a tree?

Ans. : Tape

88. What is the unit used to measure long distances between different cities?

Ans. : Kilometre

89. What type of motion is exhibited by a swing?

Ans. : Oscillatory

90. What is the smallest value that can be measured using a typical 15-cm scale?

Ans. : Millimetre

91. Which ancient Indian unit of measurement is mentioned as still being used by traditional craftspeople?

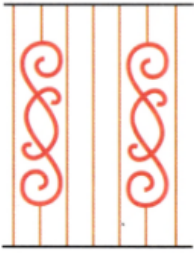
Ans. : Angula

92. What is the reference point used by a traveller to determine how close she/he is to Delhi?

Ans. : Delhi

93. The photograph given in figure shows a section of a grille made up of straight and curved iron bars. How would you measure the length of the bars of this

section, so that the payment could be made to the contractor?



Ans. : To measure the length of bars of grille, straight part of iron bar is measured directly with measuring tape and curved part firstly measured with thread, then after measuring tape is used to measure the length of thread.

94. Search for the different scales or measuring tapes at your home and school. Find out the smallest value that can be measured using each of these scales. Record your observations in a tabular form.

Ans. :

Different scales or measuring tapes	Smallest value measured
1. A plastic scale from pencil box	1 mm
2. A steel ruler	1 mm
3. Tailor's measuring tape	1 mm
4. Steel measuring tape	1 m

95. Take a tumbler or a bottle. Measure the length of the curved part of the base of tumbler or bottle and record it.

Ans. : Measuring curved part of Tumbler/Bottle

Method 1 Take a tailor's measuring tape to measure the length of the curved part of the base of tumbler or bottle.

Method 2 Run a thread along the curved part of the base of tumbler or bottle. And the length of the thread used can be further measured from a scale.

96. Observe different objects around you. It is easier to express the lengths of some objects in mm, some in cm and some in m. Make a list of three objects in each category and enter them in the table given below

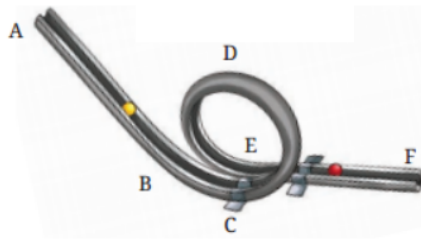
Size	Objects
mm	
cm	
m	

Ans. :

Size	Objects
mm	Height of a lunch box lid
cm	Length of a pencil
m	Length of a desk



97. A roller coaster track is made in the shape shown in given figure. A ball starts from point A and escapes through point F. Identify the types of motion of the ball on the roller coaster and corresponding portions of the track.



Ans. : A to B - Linear motion
B to C - Oscillatory motion
C to E - Circular motion
E to F - Linear motion

98. Tasneem wants to make a metre scale by herself. She considers the following materials for it - plywood, paper, cloth, stretchable rubber and steel. Which of these, she should not use and why?

Ans. : She should not use stretchable rubber because it can stretch and deform during measurements which give inaccurate measurements.

99. Think, design and develop a card game on conversion of units of length to play with your friends.

Ans. : Make cards with different units of length (e.g. km, m, cm, mm). Ask the players to draw cards one by one and convert the units correctly to win points. Add some more challenges to the game.

100. Express the height of a person (1.65 metres) in centimetres and millimetres.

Ans. : Height in centimetres: $1.65 \text{ metres} \times 100 = 165 \text{ centimetres}$.
Height in millimetres: $1.65 \text{ meters} \times 1000 = 1650 \text{ millimetres}$.

101. The distance between Radha's home and her school is 3250 metres. Express this distance in kilometres.

Ans. : The distance is 3.25 kilometres (since 1 kilometre =1000 metres).

102. What is the SI unit of length?

Ans. : The SI unit of length is metre (m).

103. Given below are the lengths. Arrange them in their decreasing magnitude.
10 cm, 10 mm, 10 km, 10 m

Ans. : 10 km, 10 m, 10 cm, 10 mm

104. What is full form of SI unit?

Ans. : International System of Units.

105. How many centimetres are equivalent to 1 inch?



Ans. : 2.54 cm.

106. How many millimetre (mm) a metre has?

Ans. : 1000 mm

107. What is rectilinear motion?

Ans. : When an object moves along a straight line, the motion is said to be rectilinear motion.

108. Give one example of periodic motion.

Ans. : Motion of a pendulum or motion of a child on a swing.

109. What is the term for a stationary object or point used as a reference for measuring distance?

Ans. : Reference point

*** Answer The Following Questions In Short.[2 Marks Each]**

[46]

110. Why is it important to use standard units of measurement in everyday life?

Ans. : It is important to use standard units of measurement in everyday life to ensure consistency, accuracy, and reliability. Standard units allow for clear communication and comparison of measurements, which is important in fields such as science, engineering, and trade. Without standard units, measurements would vary widely depending on the person taking the measurements. It leads to confusion and errors.

111. How the measurements using body parts to measure length were considered inconsistent?

Ans. : It was observed that using body parts to measure length was inconsistent by comparing the handspans, foot spans or strides etc.. Each person's handspan resulted in a different measurement, demonstrating that body parts vary in size from person to person. This observation highlighted the need for standard units.

112. Describe the process of using a thread to measure the length of a curved line.

Ans. : To measure the length of a curved line using a thread, we first place the thread along the entire length of the curve, ensuring it follows the shape precisely. After marking the endpoints on the thread, we straighten the thread and measure it against a straight ruler or measuring tape. This method gives accurate measurement of curves, which cannot be measured with rigid straight scales.

113. Explain the significance of the International System of Units (SI) and its impact on global measurements.

Ans. : The International System of Units (SI) is significant because it provides a standard set of measurement units used globally, facilitating international trade, scientific studies, and technological development. By using SI units, countries can

ensure that measurements are consistent and comparable, reducing misunderstandings and errors. The SI system includes base units like the metre (for length), kilogram (for weight), and second (for time), which are fundamental to various scientific and practical applications.

114. Write the correct techniques for measuring length accurately. Explain why are they important?

Ans. : Correct techniques for measuring length include placing the scale in contact with the object, aligning the scale properly along the object's length, and positioning the eye directly above the measurement mark to avoid parallax errors. These techniques are important to ensure accuracy and consistency in measurements. For example, measuring a pencil with a broken scale requires starting from a full mark and subtracting the initial reading to obtain the correct length.

115. Discuss the historical units of measurement used in India and their relevance in modern times.

Ans. : Historical measurement units used in India, such as angula (finger width) and dhanusa (bow length), played a significant role in ancient architecture, town planning, and trade. These units are mentioned in ancient literature and are still used by traditional craftspeople like carpenters and tailors. Understanding these units provides insight into India's rich history of measurement and how it has evolved to incorporate modern standard units.

116. How does the concept of a reference point help in accurately describing the position of an object?

Ans. : The concept of a reference point is important for accurately describing the position of an object because it provides a fixed location from which measurements can be made. For example, when we see kilometre stones indicating distances from Delhi, Delhi acts as the reference point. Without a reference point, it would be difficult to determine precise locations and distances, which is essential for navigation, construction, and various scientific studies.

117. Describe an activity that demonstrates the difference between using body parts and standard units for measurement.

Ans. : An activity to demonstrate the difference between using body parts and standard units for measurement involves measuring the length of a classroom table using both methods. First, students can use their handspans and record the results, which will likely vary due to differences in hand size. Then, using a standard measuring tape or ruler, they can measure the table again, showing that standard units provide consistent and reliable measurements regardless of the measurer.

118. Why do people use standard units of measurement instead of body parts?

Ans. : People use standard units of measurement instead of body parts, because body parts vary in size from person to person, leading to inconsistent



measurements. Standard units ensure that measurements are uniform and accurate regardless of who performs the measurement.

119. What is the significance of the metre in the International System of Units?

Ans. : The metre is an important International System of Units as it is the base unit of length. It provides a consistent standard for measuring length, which is essential for scientific and everyday measurements.

120. How can you measure the length of a Curved line accurately?

Ans. : To measure the length of a curved line accurately, you can use a flexible measuring tape or a thread. Place the thread along the curve, then measure the length of the thread against a straight scale.

121. Explain the concept of a reference point in measuring distance.

Ans. : A reference point is a fixed object or location used to describe the position of another object. It helps in determining distances and positions accurately by providing a consistent point of comparison.

122. How does the position of the eye affect the accuracy of measuring with a scale?

Ans. : The position of the eye affects the accuracy of measuring with a scale because if the eye is not directly above the measurement mark, it can cause a parallax error. This error occurs when the measurement is viewed from an angle, leading to an incorrect reading.

123. Why are flexible measuring tapes preferred for measuring the girth of objects?

Ans. : Flexible measuring tapes are preferred for measuring the girth of objects because they can easily wrap around curved surfaces. This flexibility allows for accurate measurements of objects with irregular shapes.

124. What do you and your friends discover when you compare the handspans?

Ans. : We discover that our handspans are different in size, leading to varying measurements of the same object. This highlights the inconsistency of using body parts for measurement and the need for standard units.

125. How is oscillatory motion different from linear and circular motion?

Ans. : Oscillatory motion is different from linear and circular motion in that it involves an object moving to and fro about a fixed position. Linear motion involves movement along a straight path, while circular motion involves movement along a circular path.

126. Describe the process of measuring an object using a scale with broken ends.

Ans. : To measure an object using a scale with broken ends, you can start from a full mark on the scale instead of the zero mark. Measure the length from this point and subtract the initial reading to get the correct length.

127. How can you measure the distance between two places using a bicycle?



Ans. : To measure the distance between two places using a bicycle, attach a flexible metal strip to the wheel spoke to count the number of rotations. Measure the circumference of the wheel, multiply it by the number of rotations, and calculate the total distance travelled.

128. Three students measured the length of a corridor and reported their measurements. The values of their measurements were different. What could be the reason for difference in their measurements? (Mention any three)

Ans. : The reasons may be as follows

(i) Their scales of measurement may not be standard or they may be using different scales of measurement.

(ii) The length of the scale may not be proper, i.e. the length of scale may be shorter than the length they want to measure.

(iii) There may be some errors in the scale which they are using or they may not be using the correct method of observing the scale.

129. Suppose the distance between your school and home is 1.5 km. Express it in metres.

Ans. : $1 \text{ km} = 1000 \text{ m}$

$1.5 \text{ km} = 1.5 \times 1000 = 1500 \text{ m}$

130. Measure the height of your friend and express it in (i) metres (ii) centimetres and (iii) millimetres.

Ans. : Assume your friend's height is 4.5 feet.

(i) $4.5 \text{ feet} = 4.5 \times 0.3 = 1.35\text{m}$ (since, $1 \text{ foot} = 0.3\text{m}$)

(ii) $1.35\text{m} = 1.35 \times 100 = 135\text{cm}$ (since, $1\text{m} = 100\text{cm}$)

(iii) $135\text{cm} = 135 \times 10 = 1350\text{mm}$ (since, $1\text{cm} = 10\text{mm}$)

131. You are given a coin. Estimate how many coins are required to be placed one after the other lengthwise, without leaving any gap between them, to cover the whole length of the chosen side of a notebook. Verify your estimate by measuring the same side of the notebook and the size of the coin using a 15 cm scale.

Ans. : Take a notebook and place the coins one after the other lengthwise. The number of coins that you get by experimenting should be equal to the number of coins that can be calculated by the method given below:

Let's say, the length of a notebook measured by 15 cm scale = 20 cm or 200 mm and the height of one coin = 2 mm (measurements can vary).

No. of coins = Length of the notebook/Height of one coin = $200 \text{ mm} / 2 \text{ mm} = 100$ coins.

132. Give two examples each for linear, circular and oscillatory motion.

Ans. : **Linear motion** A bicycle going down a street having straight path, a falling apple.

Circular motion Revolution of the earth around the sun, motion of blades of a fan.

Oscillatory motion A simple pendulum, flapping of wings.

* Answer The Following Questions In Brief.

[3]

133. Some lengths are given in Column I of the table given below. Some units are given in Column II. Match the lengths with the units suitable for measuring those lengths.

Column I	Column II
Distance between Delhi and Lucknow	centimetre
Thickness of a coin	kilometre
Length of an eraser	metre
Length of school ground	millimetre

Ans. : Distance between Delhi and Lucknow - kilometre

Thickness of a coin - millimetre

Length of an eraser - centimetre

Length of school ground - metre

* Match the following.

[5]

134.

Column A	Column B
Q.1. 100 cm	A. Rectilinear motion and rotation motion
Q.2. 1 cm	B. 10 mm
Q.3. March-past of soldiers in a parade	C. Periodic motion
Q.4. The motion of blades of an electric fan	D. 1 m
Q.5. The motions of strings of a guitar	E. Rectilinear motion
	F. Circular motion

Ans. :

Column A	Column B
1. 100 cm	D. 1 m
2. 1 cm	B. 10 mm
3. March-past of soldiers in a parade	E. Rectilinear motion
4. The motion of blades of an electric fan	F. Circular motion
5. The motions of strings of a guitar	C. Periodic motion

