



PHYSICS

BOOKS - LAKHMIR SINGH & MANJIT KAUR

FRICTION

Exercise

1. Name the force which always oppose motion.



Watch Video Solution

2. Why does a fast car slow down if its engine switched off ?



Watch Video Solution

3. Which type of surface produce least friction ?

A. Smooth surface

B. Rough surface

C. hard and rough surface

D. Both B and C

Answer: A



Watch Video Solution

4. Which type of surface produce too much friction ?

A. Smooth surface

B. Rough Surface

C. Soft and smooth surface

D. Both A and C

Answer: B



Watch Video Solution

5. What is the direction of force of friction acting on a moving object ?



Watch Video Solution

6. Name a device which is used to measure force acting on an object.

A. Anemometer

B. Spring Balance

C. Ammeter

D. Compass

Answer: B



Watch Video Solution

7. What is the spring balance ?



[Watch Video Solution](#)

8. Out of sliding friction, static friction and rolling friction :

Which one is the smallest ?



[Watch Video Solution](#)

9. Out of sliding friction, static friction and rolling friction :

which one is the largest ?



Watch Video Solution

10. Which type of friction comes into play when a book kept on cylindrical pencils is moved by pushing ?

- A. Rolling friction
- B. Static friction
- C. Sliding friction
- D. None of the above

Answer: A



Watch Video Solution

11. Why is it more difficult to walk properly on a well-polished floor ?



Watch Video Solution

12. Prove that the curves

$y_1 = f(x) (f(x) > 0)$ and $y_2 = f(x) \sin x$,

where $f(x)$ is a differentiable function, are tangent to each other at the common points.



[Watch Video Solution](#)

13. Which force is responsible for the wearing out of car tyres ?



[Watch Video Solution](#)

14. What prevents you from slipping every time you take a step forward ?



[Watch Video Solution](#)

15. Name the force which helps things to move and stop.



[Watch Video Solution](#)

16. What enables us to fix nails in a wall and knots to be tied ?



[Watch Video Solution](#)

17. What makes the steps of foot over-bridges and Railways Station to wear out slowly ?



Watch Video Solution

18. What is done to increase friction between the tyres and road ?



Watch Video Solution

19. Why do gymnasts apply a coarse substance to their hands ?



Watch Video Solution

20. Why do kabaddi players rub their hands with dry soil ?



Watch Video Solution

21. Name the device which is used between the hubs and axles of bicycle wheels to reduce friction



Watch Video Solution

22. What is the purpose of using ball bearings in machines ?



Watch Video Solution

23. Name any two machines in which bearings are used.



Watch Video Solution

24. The ovule is attached to the placenta by a stalk called



Watch Video Solution

25. Name one example from everyday life where wheels (or rollers) are used to reduce friction.



Watch Video Solution

26. Why does oiling the axles of bicycle make the bicycle move more easily ?



Watch Video Solution

27. State one way in which the friction between wheel and its axle can be reduced.



Watch Video Solution

28. Name two common lubricants.



Watch Video Solution

29. Why do we sprinkle fine powder on carrom board ?



Watch Video Solution

30. Which force gets reduced when the two surface in contact are polished to make them smooth ?

- A. Contact force
- B. Friction force
- C. Gravitational force
- D. Both A and B

Answer: B



[Watch Video Solution](#)

31. Why is the surface of a slide polished to make it smooth ?



[Watch Video Solution](#)

32. Name the force which increases when the two surface in contact are made more rough.



[Watch Video Solution](#)

33. What is the special name of frictional exerted by fluids (like air or water) ?



Watch Video Solution

34. What is the name of 'special shape' which is given fo objects moving through air (or water) to reduce drag ?



Watch Video Solution

35. Why are grooves provided in the soles of shoes ?



Watch Video Solution

36. Why are treads made in the surface of tyres ?



Watch Video Solution

37. Fill in the following blanks with suitable words :

Friction always opposes.....between the surface in contact with each other .

- A. Motion
- B. Shifting
- C. Tilting
- D. All of these

Answer: A



Watch Video Solution

38. Fill in the following blanks with suitable words :

Sliding friction is..... than the static friction.

A. Lesser

B. more

C. Smaller

D. Both A and C

Answer: D



Watch Video Solution

39. Fill in the following blanks with suitable words :

Friction produces.....

A. Heat

B.

C.

D.

Answer:



Watch Video Solution

40. Fill in the following blanks with suitable words :

Friction prevent out foot from.....over the ground.



Watch Video Solution

41. Fill in the following blanks with suitable words :

Sprinkling of powder on the carrom board.....friction.



Watch Video Solution

42. Fill in the following blanks with suitable words :

Ball bearings reduce friction because they.....rather than slide.





[Watch Video Solution](#)

43. Fill in the following blanks with suitable words :

The friction when something moves through a liquid or gas is called.....



[Watch Video Solution](#)

44. Fill in the following blanks with suitable words :

Cars and speedboats are.....to reduce drag.

A. Circular

B. Streamlined

C. Elliptical

D. Elongated

Answer: B



Watch Video Solution

45. Fill in the following blanks with suitable words :

Shapes that are designed to reduce air resistance are called.....shapes.

A. Circular

B. Elliptical

C. Streamlined

D. Elongated

Answer: C



Watch Video Solution

46. Fill in the following blanks with suitable words :

Object which can move quickly through the water have ashape.

A. Circular

B. Elliptical

C. Elongated

D. streamlined

Answer: D



Watch Video Solution

47. Fill in the following blanks with suitable words :

The shape of an aeroplane is similar to that of a.....in flight.



Watch Video Solution

48. When we try to push a heavy box kept on ground, it does not move at all. Which force is preventing this box to move forward ? Where does this force act ?



Watch Video Solution

49. Suppose your writing table (or desk) is tilted a little. A book kept on the table starts sliding down. Draw a diagram to show the

direction of force of friction acting on the book.



[Watch Video Solution](#)

50. Which will cause more friction : a rough surface or a smooth surface ? Why ?



[Watch Video Solution](#)

51. Explain why, sliding friction is less than static friction.



[Watch Video Solution](#)

52. What is meant by 'rolling friction' ?



[Watch Video Solution](#)

53. Iqbal has to push a lighter box and Seema has to push a similar heavier box on the same floor. Who will have to apply a larger force and why ?



[Watch Video Solution](#)

54. Why does a man slip when he steps on banana peel thrown on the road ?



Watch Video Solution

55. Car wheels often spin on icy roads. Explain why.



Watch Video Solution

56. Explain why :

a pencil will write on paper but not on glass.



Watch Video Solution

57. Explain why :

climbing a greasy pole is very difficult.



Watch Video Solution

58. Why does a matchstick light when we strike it on a rough surface ?



Watch Video Solution

59. Why is it difficult to light a matchstick by striking it on a smooth surface ?



Watch Video Solution

60. Can two different bulbs, similar in all respect act as coherent sources ? Give reasons for your answer.



Watch Video Solution

61. Why do brake pads of bicycles have to be replaced quite often ?



Watch Video Solution

62. A pencil eraser loses tiny pieces of rubber each time you use it. Why does this happen ?



Watch Video Solution

63. What happens when you rub your hands vigorously for a few seconds ? Why does this happen ?



Watch Video Solution

64. Explain how, friction enables us to walk without slipping.



Watch Video Solution

65. How does a bicycle stop when its brakes are applied ?



Watch Video Solution

66. Explain why, the soles of our shoes wear out gradually .



Watch Video Solution

67. Why do tyres of cars wear out gradually ?



Watch Video Solution

68. State two advantages and two disadvantages of friction.



[Watch Video Solution](#)

69. Explain why, sportsmen use shoes with spikes.



[Watch Video Solution](#)

70. How will you reduce friction between those machine parts which rub against each other ?
Give the simplest method.



[Watch Video Solution](#)

71. What is meant by lubrication ? Why is it important ?



Watch Video Solution

72. Explain why , wheels are so useful.



Watch Video Solution

73. Why are lubricants (oil or greses) applied to rubbing surface of machines ?



Watch Video Solution

74. Explain, how the use of oil reduces friction between two surface in contact with each other.



Watch Video Solution

75. Why are cars, aeroplanes and rockets streamlined ?



[Watch Video Solution](#)

76. The equation $(\cos p - 1)x^2 + \cos p \cdot x + \sin p = 0$ where x is a variable, has real roots. Then the interval of possible values of p is



[Watch Video Solution](#)

77. What are fluids ?



[Watch Video Solution](#)

78. Name two common fluids.



[Watch Video Solution](#)

79. Define friction. What are the factors affecting friction ? Explain with examples.



[Watch Video Solution](#)

80. What is the cause of friction ? Explain with the help of labelled diagram.



Watch Video Solution

81. Give a example to show that friction depends on the nature of two surface in contact.



Watch Video Solution

82. What is the difference between static friction and sliding friction ? For given pair of objects, which of the two is greater ?



Watch Video Solution

83. How can a very heavy machine be moved conveniently from one place to another in a factory ?(No crane is available for this purpose).



Watch Video Solution

84. What is drag ?



Watch Video Solution

85. The coordinates of A and B are



Watch Video Solution

86. How can you reduce the drag on something moving through the air ?



Watch Video Solution

87. What is meant by 'streamlined shape' ?



Watch Video Solution

88. The fast moving vehicles are given streamline shape . Why ?



Watch Video Solution

89. A boy runs his toy car on dry marble floor, wet marble floor, newspaper and towel spread on the floor. The force of friction acting on the car on different surface in increasing order will be :

A. Wet marble floor, Dry marble floor,
Newspaper, Towel

B. News paper, Towel, Dry marble floor,
Wetmarble floor

C. Towel, Newspaper, Dry marble floor, Wet marble floor

D. Wet marble floor, Dry marble floor, Towel, Newspaper

Answer: A



Watch Video Solution

90. Four children were asked to arrange forces due to rolling, static and sliding friction in a dreasing order. The correct arrangement is :

A. Rolling, Static, Sliding

B. Rolling, Sliding, Static

C. Static, Sliding, Rolling

D. Sliding, Static, Rolling

Answer: C



Watch Video Solution

91. A big wooden box is being pushed on the ground from east to west direction. The force

of friction due to ground will act on this box towards :

A. north direction

B. south direction

C. east direction

D. west direction

Answer: C



Watch Video Solution

92. A spring balance can be used to measure :

A. Mass of an object B. Force acting on an object

C. Density of an object D. Weight of an object

A. A and B

B. B and C

C. B and D

D. only D

Answer: C



Watch Video Solution

93. The friction between two surface does not depend on one of the following. This one is :

A. amount of surface area of the two objects which is in contact with each other

B. weight of the object which tends to move on the surface of other object

C. degree of smoothness of surface of two objects in in contact with each other

D. degree of roughness of surface of two objects in contact with each other

Answer: A



Watch Video Solution

94. If the sliding friction between two surface in found to be 8 N, then the static friction

between these two surface is most likely to be

:

A. 5 N

B. 10 N

C. 4 N

D. 2 N

Answer: A



Watch Video Solution

95. Which of the following is not an advantage of friction ?

A. it enables drawing to be made on paper

B. it enables fallen things to be picked up

C. it enables rubber pads to be rubbed off.

D. it enables vehicles to move on ground

Answer: A::B::D



Watch Video Solution

96. Which of the following statement is incorrect ?

A. static friction is greater than rolling friction

B. sliding friction is less than rolling friction

C. rolling friction is less than static friction

D. static friction is greater than sliding friction

Answer: B



Watch Video Solution

97. If the static friction between two surface X and Y is found to be 20 N, then the rolling between these two surfaces should most likely be :

A. 25N

B. 20 N

C. 5 N

D. 50 N

Answer: C



Watch Video Solution

98. If the static friction between two surface P and Q is measured to be 50 N, then the sliding friction between these two surface is most likely to be :

A. 75 N

B. 45 N

C. 55 N

D. 65 N

Answer: D



Watch Video Solution

99. Which of the following will produce the maximum friction ?

A. rubbing of sand paper on glazed paper

B. rubbing of sand paper on glass table top

C. rubbing of sand paper on aluminium
frame

D. rubbing of sand paper on sand paper

Answer: A



Watch Video Solution

100. Four similar cars having exactly the same mass are running at the same speed on the same road when breakes are applied at the same time. The cars come to stop covering

distance of 5 m, 5.5 m, 4.8 m and 5.2 m respectively. The friction between the brake pads and discs will be the maximum in the car which travels the distance of :

A. 5 m

B. 5.5 m

C. 4.8 m

D. 5.2 m

Answer: D



Watch Video Solution

101. The weight of an object can be measured by a :

- A. beam balance
- B. analytical balance
- C. spring balance
- D. physical balance

Answer: C



Watch Video Solution

102. A book is lying on the horizontal table top. If we tilt the table a little, then the book starts down slowly. This happens because :

A. sliding friction is greater than static friction

B. sliding friction is less than force of gravity

C. static friction is greater than sliding friction

D. force of gravity is less than sliding friction

Answer: B



Watch Video Solution

103. A body shape which offers very little resistance to the flow of air (or water) around it is called :

A. trimlined shape

B. steamlined shape

C. streaklined shape

D. streamlined shape

Answer: A::D



Watch Video Solution

104. Which of the following should be used to reduce friction on a carrom board ?

A. a lubricating oil

B. a dry lubricant

C. a layer of grease

D. fine white powder

Answer: D



Watch Video Solution

105. Which of the following does not have a streamlined shape ?

A. aeroplane

B. boat

C. bird

D. bus

Answer: d



Watch Video Solution

106. The partially decomposed organic matter is formed by a process called

A. brag

B. drab

C. drag

D. tread

Answer: A::D



Watch Video Solution

107. A person has applied some mustard oil on his hands. Which of the following objects will become most difficult for him to hold his hand ?

A. Earthen cup (kulhar)

B. thermocal tumbler

C. glass tumbler

D. wooden cup

Answer: A::B



Watch Video Solution

108. Ball bearing is a device which usually converts :

A. rolling friction into sliding friction

B. static friction into sliding friction

C. sliding friction into rolling friction

D. rolling friction into static friction

Answer: C



Watch Video Solution

109. When a pencil cell is released from a certain point on an inclined wooden board, it travels a distance of 35 cm on floor board, it

travels a distance of 20 cm on floor B before coming to rest. Which floor, A or B, offers greater friction ? Give reason for your answer.



[Watch Video Solution](#)

110. A car moving towards North. What will be the direction of force of friction acting on this car due to surface of road ?



[Watch Video Solution](#)

111. You spill bucket of soapy water on a marble floor accidentally. Would it make easier or more difficult for you walk on the floor ?
Why ?



Watch Video Solution

112. What kind of friction come into play :
when a block of wood kept on table moves slowly ?



Watch Video Solution

113. What kind of friction come into play :

when a block of wood kept on table just tends to move (or slip) ?



Watch Video Solution

114. What kind of friction come into play :

when a block of wood kept on cylindrical iron rods moves ?

A. Static friction

B. Rolling friction

C. Sliding friction

D.

Answer:



Watch Video Solution

115. Explain why, it is easier to drag a mat on floor when nobody is sitting on it but much more difficult to drag the same mat when a person is sitting on it.



Watch Video Solution