VIKRAMADITYA ACADEMY

Sainik School • Rashtriya Military School • RIMC Coaching

CLASS IX



ENTRANCE EXAM 2027

A COMPLETE BOOK FOR

GENERAL SCIENCE

RMS CET & **SAINIK SCHOOL (AISSEE)**

Strictly as per the Official Syllabus of RMS & Sainik School Society • English Medium

27	100%	Exam Facts	2700 MCQs
Chapters	Syllabus Covered	& Formulae	with Answer Keys

⚛ Physics
Force, Friction & Pressure • Sound • Light • Electricity • Heat • Stars & Solar System

⚗ Chemistry
Metals & Non-Metals • Fossil Fuels • Combustion • Synthetic Fibres • Acids, Bases & Salts

🌿 Biology
Cell • Reproduction • Adolescence & Hormones • Crop Production • Micro-organisms • Conservation

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Exam Pattern – Science in Class IX Entrance

Exam	Science Section	Questions	Marks	Other details
AISSEE - Sainik School (Class IX)	Section D – General Science	25	2 each = 50	Total paper 150 Q / 400 marks, 180 minutes, English medium only, no negative marking
RMS CET (Class IX)	Paper 2 – Science (with Mathematics)	50	1 each = 50	Paper 2: Maths 50 + Science 50 = 100 marks; 50% to qualify; Class VIII standard; English medium only

Source: AISSEE-2027 Information Bulletin (NTA), Appendix III; RMS CET Information Bulletin, Chapter 7 – Broader Syllabus for RMSs.

Official Syllabus – AISSEE (Sainik School) Class IX: General Science

Sl.	Topic	Sl.	Topic
1	Fossil Fuel: Coal and Petroleum	14	Micro-Organisms
2	Combustion and Flame	15	Some Natural Phenomenon
3	Cell Structure and Function	16	How to find calorific value of fuel?
4	Reproduction in Plants & Animals	17	Electroplating and Artificial Jewellery
5	Force, Friction and Pressure	18	Relation between types of friction
6	Sound and its basics	19	Cropping Seasons
7	Reflection and Dispersion of Light	20	Agricultural Practices
8	Metals and Non Metals	21	Conservation of Plants and Animals
9	Synthetic Fibers and Plastics	22	Biosphere Reserves, National Parks and Sanctuaries
10	Chemical Effects of Electric Current	23	Reaching the age of Adolescence
11	Stars and Solar Systems	24	Changes during Puberty
12	Pollution of Air and Water	25	Endocrine Glands and Hormones
13	Global Warming		

Official Syllabus – RMS CET Class IX: Science

Sl.	Topic	Sl.	Topic
1	Electric Current and its Effect	17	Reproduction in Plants and Animals
2	Forests : Our Lifeline	18	Reproduction in Organisms
3	Sound and Light	19	Transportation in Animals and Plants
4	Acids, Bases and Salts	20	Fossil Fuel : Coal and Petroleum

Sl.	Topic	Sl.	Topic
5	Coal and Petroleum	21	Cell Structure and Function
6	Combustion and Flame	22	Reflection and Dispersion of Light
7	Conservation of Plants and Animals	23	Metals and Non Metals
8	Crop Production and Management	24	Synthetic Fibers and Plastics
9	Force and Pressure	25	Chemical Effects of Electric Current
10	Friction	26	Global Warming
11	Heat	27	Some Natural Phenomenon
12	Micro Organisms : Friend and Foe	28	Electroplating and Artificial Jewellery
13	Motion and Time	29	Relation between types of Friction
14	Nutrition in Plants	30	Changes during Puberty
15	Physical and Chemical Changes	31	Endocrine Glands and Hormones
16	Reaching The Age of Adolescence		

RMS written test is generally of Class VIII standard (NCERT Class 6–8 science topics).

Syllabus at a Glance – Topic-wise Chapter Guide

Official Syllabus Topic	Exam (S = Sainik, R = RMS)	Chapter in this Book
Fossil Fuel: Coal and Petroleum / Coal and Petroleum	S, R	**Ch 14**
Combustion and Flame	S, R	**Ch 15**
How to find calorific value of fuel?	S	**Ch 15**
Cell Structure and Function	S, R	**Ch 18**
Reproduction in Animals	S, R	**Ch 23**
Reproduction in Plants / Reproduction in Organisms	S, R	**Ch 22**
Force and Pressure + Motion and Time	S, R	**Ch 1 • Ch 3**
Friction + Relation between types of friction	S, R	**Ch 1 • Ch 2**
Sound and its basics	S, R	**Ch 4**
Reflection and Dispersion of Light / Light	S, R	**Ch 5**
Metals and Non Metals	S, R	**Ch 13**
Synthetic Fibers and Plastics	S, R	**Ch 16**
Chemical Effects of Electric Current	S, R	**Ch 8**
Electroplating and Artificial Jewellery	S, R	**Ch 7 • Ch 8**
Electric Current and its Effect (heating, magnetic, fuse)	R	**Ch 7 • Ch 8**
Stars and Solar System	S	**Ch 10**
Pollution of Air and Water + Global Warming	S, R	**Ch 17**
Micro-Organisms: Friend and Foe	S, R	**Ch 19**
Some Natural Phenomenon	S, R	**Ch 9**
Cropping Seasons / Crop Production and Management	S, R	**Ch 25**
Agricultural Practices	S, R	**Ch 25**
Conservation of Plants and Animals	S, R	**Ch 26**
Biosphere Reserves, National Parks and Sanctuaries	S	**Ch 26**
Reaching the age of Adolescence + Changes during Puberty	S, R	**Ch 24**
Endocrine Glands and Hormones	S, R	**Ch 24**
Acids, Bases and Salts	R	**Ch 12**
Physical and Chemical Changes	R	**Ch 11**
Heat	R	**Ch 6**
Nutrition in Plants	R	**Ch 20**
Transportation in Animals and Plants	R	**Ch 21**
Forests: Our Lifeline	R	**Ch 27**

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UNIT 1

PHYSICS

Force and Pressure • Friction • Motion and Time • Sound • Light • Heat • Electric Current and its Effects (incl. Artificial Jewellery) • Chemical Effects of Electric Current • Some Natural Phenomena • Stars and the Solar System

CHAPTER 01

UNIT 1 • PHYSICS

Force and Pressure

RMS CET & Sainik School (AISSEE) – Class IX

Rest and Motion

- When the posⁿ of body doesn't change with time; body is said to be at rest.
- When the posⁿ of body changes with time; body is said to be in motion.

Motion based on path taken by objects

① Linear	② Circular	③ Curvilinear	④ Rotatory	⑤ Oscillatory	⑥ Zig-zag
In a line	In circle	Moving ahead but change dirⁿ	About own axis	Coming back to same posⁿ	Irregular

Motion based on speed

① Uniform	② Non-Uniform
Velocity remains constt. along line & covers equal disⁿ in equal time intervals.	Velocity remains variable & covers the same disⁿ in different time duration.

- **Distance:** Actual path travelled in a given time period. → Scalar → Always +ve.
- **Displacement:** Shortest distance from initial to final position. → Vector → Can be +ve, 0, –ve.
- **Speed:** Distance travelled by moving object in unit time interval. → Scalar
- **Velocity:** Displacement in unit time interval. → Vector
- **Acceleration:** Rate of change of velocity.

$$a = (v - u) / t$$

Force

- A push or pull on an object is called force.
- Vector quantity.
- SI Unit → Newton (N); CGS Unit → Dyne

$$1\ N = 10^5\ Dyne$$

- Force is due to an interaction of objects.
- Force is equal to product of mass & acceleration of body.

$$F = m \cdot a \quad (N = kg \times m/s^2)$$

Effect of Force

- ① A force can move a stationary object.
- ② A force can stop a moving object.
- ③ A force can change the speed of moving object.
- ④ A force can change the direction of moving object.

- ⑤ A force can change the shape & size of object.

Resultant (Net) Force

- (1) If two forces applied to an object act in same dirⁿ; then resultant force is equal to sum of two forces. (A + B)
- (2) If two forces applied to an object act in opposite dirⁿ; then resultant force is equal to diffⁿ of two forces. (A – B)
- (3) If two forces applied to an object are equal & opposite in dirⁿ; then net force is equal to zero (Nil).
- **One Kilogram force:** Force required to lift an object of mass 1 kg vertically upwards.

1 KgF = 9.8 N (≈ 10 N)

- Strength of force is expressed by: **Magnitude**.

Types of Forces

Forces → **① Contact → (A) Muscular (B) Mechanical (C) Frictional** →
② Non-Contact → (A) Magnetic (B) Electrostatic (C) Gravitational Force

1) Contact Force

- Force which comes into effect due to contact of surfaces of two bodies.
- Based on principal of action-reaction.
- 3 types:
- **A) Muscular:** Force resulting from the action of muscles. Ex – Pushing, Pulling, Throwing, Kicking, Lifting, Running, Jumping, Bending; Work done by animals also.
- **B) Mechanical:** Force exerted by a machine to do work. Ex – Engine of car, Wind mills, etc.
- **C) Frictional:** Force acting along the two surfaces in contact that opposes the motion of one object over the other is called frictional force. It always opposes the motion of moving object.

2) Non-Contact

- Force which comes into effect even when objects are not in physical contact with each other.
- 3 types:
- **A) Magnetic:** Force exerted by a magnet is called Magnetic F.
  - Repulsion: b/w like poles of two magnets.
  - Attraction: b/w unlike poles of two magnets.
- **B) Electrostatic:** Force exerted by an electrically charged object is called E.S. Force.
  - E.S. Force is uses in reducing air pollⁿ by removing dust, soot & fly ash particles from chimney's smoke.
- **C) Gravitational Force:** Force (Pull) exerted by objects possessing mass is called Gravitational force.
  - This is the force due to which earth & other planets keep revolving around the sun without leaving their place.
  - Gravitational Force (F) = m · g (g → gravity on Earth)
- **Gravity (g):** The force of attraction exerted by the earth on any object is called Gravity.

Pressure

- It is the force (thrust) acting per unit area (A).

$P = F / A$ 1 Bar = 10^5 Pa

- SI unit is Pascal (Pa) or N/m^2
- CGS unit is Dyne/cm^2
- **Factors:** (i) As force applied ↑ → Pressure will be greater. (ii) As Area ↑ → Pressure will be smaller.

Applications

- (1) School bags have wide straps.
- (2) Sharp knife cuts better than blunt knife.
- (3) Tip of a needle is sharp.
- (4) Tractors have broad tyre.
- (5) Foundations of buildings are made broad.
- (6) Railways tracks are laid on sleepers.
- (7) While man walking, pressure is more than pressure exerted while standing.

Pressure exerted by Liquids

- Pressure exerted by liquids on the base or walls of its container.

$P = \rho g d$ (ρ → density of liquid, g → Acc^n due to gravity, d → height of point)

- The diff^n b/w two liquid pressure is measured by **manometer** or U-Tube.
- **Factors:** (1) Pressure ↑ as depth of liquid ↑ (2) Pressure is equal at same depth. (3) Liquid exerts pressure on bottom & walls of container.
- **Applications:** (1) The wall of dam is made thicker at bottom. (2) Water supply tanks are usually placed at top of building.
- **Pascal's Law:** Pressure upon a point in a liquid is transmitted equally in all directions.

Pressure exerted by Gases

- Like liquids, gases also exerts pressure on the walls of container in which they are confined.

Atmospheric Pressure

- Pressure exerted by column of air per unit area of earth's surface is known as A.P.
- Measured by **Barometer** → invented by **E. Torricelli** → Fortin (with Hg), Aneroid (without Hg)
- Measured in "mm of mercury".

1 atm = 760 mm of mercury 1 atm = 1.013 bar ⇒ 1.013×10^5 N/m^2

- Atmospheric pressure is maximum at surface of earth & decrease as height ↑.
- **Applications:** (1) At high altitudes, atmospheric pressure is < than blood pressure → bleeding takes place. (2) Drinking straw. (3) Syringe (4) Dropper (5) Rubber Sucker (6) Astronauts wear special suit going to space. (7) Pen ink starts leaking at higher altitudes.

Magdeburg Experiment

- Otto Von Guericke; conducted it with two metallic hemisphere with smooth edges, & pumped out air from it create a vacuum. Even 16 horses (8 on each side) could not separate it.
- **Altimeter:** It measures change in pressure with height in aircrafts.

Upthrust or Buoyant Force

- An upward force exerted by water on a floating body is called buoyant force. This phenomena is called **buoyancy**.
- If Buoyant force > Weight → body will floats.
- If Buoyant force < Weight → body will sinks.

📌 **Remember – Important Exam Facts**

- Magdeburg hemispheres experiment was performed in 1654 by Otto von Guericke.

Practice Questions – 100 MCQs (RMS CET & Sainik School AISSEE pattern)

1. Which of the following is a contact force? **[RMS CET 2024]**
(a) Magnetic force (b) Gravitational force
(c) Electrostatic force (d) Muscular force

2. Two boys A and B are applying force on a block. If the block moves towards the boy A, which one of the following statements is correct? **[RMS CET 2022]**
(a) Magnitude of force applied by A is greater than that of B. (b) Magnitude of force applied by A is smaller than that of B.
(c) Net force on the block is towards B. (d) Magnitude of force applied by A is equal to that of B.

3. Which statement is correct about force? **[RMS CET 2025]**
(a) Forces applied need to be in same direction. (b) Force arises from interaction between two objects.
(c) Force is scalar. (d) Strength of force is expressed by magnitude only.

4. The upward force exerted by the liquid displaced by the body when it is placed inside the liquid is called **[RMS CET 2020]**
(a) Buoyant Force (b) Gravitational Force
(c) Centripetal Force (d) Electrostatic Force

5. When the hammer strikes the gong of an electric bell, which of the following force is responsible for the movement of hammer? **[RMS CET 2021]**
(a) Gravitational force alone (b) Magnetic force alone
(c) Electrostatic force alone (d) Frictional force alone

6. The action and reaction forces referred to in Newton's third law **[RMS CET 2022]**
(a) Must act on the same object (b) May act on different objects
(c) Must act on different objects (d) Need not be equal in magnitude but act in the same direction

7. Incorrect match: **[RMS CET 2025]**
(a) Frictional force - Rubbing your hands together to create heat (b) Muscular force - Chewing food
(c) Gravitational Force - Food going down in esophagus pipe (d) Electrostatic force - A comb attracting small paper

8. Two objects repel each other. This repulsion could be due to: **[RMS CET 2018]**
(a) Frictional force only (b) Electrostatic force only
(c) Magnetic force only (d) Either a magnetic or an electrostatic force

9. The unit of pressure is: **[RMS CET 2019]**
(a) Newton (b) Pascal
(c) Ohm (d) Meter

10. What is the name of instrument which is used to determine atmospheric pressure? **[RMS CET 2022]**
(a) Barometer (b) Altimeter
(c) Fathometer (d) Ammeter

11. The strength of the force is generally expressed in: **[RMS CET 2017]**
(a) Altitude (b) Horsepower
(c) Magnitude (d) Kilograms

12. Which of the following can exert a force on another object without contact? **[RMS CET 2017]**
(a) Wood (b) Pencil
(c) Magnet (d) Paper

13. 1 Newton is equal to: **[RMS CET 2019]**
(a) 10^2 dyne (b) 10^4 dyne
(c) 10^3 dyne (d) 10^5 dyne

14. 1 dyne (a unit of force in CGS system) equals to **[RMS CET 2022]**
(a) 10^3 g cm/s^2 (b) 10^{-3} g cm/s^2
(c) 10^5 kg m/s^2 (d) 10^{-5} kg m/s^2

15. The force acting per unit area of a surface is called: **[RMS CET 2017]**
(a) Gravity (b) Pressure
(c) Momentum (d) Magnitude

16. What is the cause of a change in the state of motion of a body? **[RMS CET 2018]**
(a) Pressure (b) Atmospheric pressure
(c) Friction (d) Force

17. Unit of pressure is **[RMS CET 2020]**
(a) Newton (b) Pascal
(c) Dyne (d) Joule

18. The atmosphere exerts enormous pressure on us. But, we don't feel it because **[RMS CET 2020]**
(a) Our blood exerts a pressure slightly more than that of the atmosphere (b) We are used to it.
(c) Our bones are very strong and can withstand the pressure. (d) The surface area of our head is very small.

19. The force of friction is high in: **[RMS CET 2017]**
(a) Smooth surface (b) Rough surface
(c) Glass surface (d) Flat with smooth

20. A man inside an artificial satellite feels weightlessness because the force of attraction due to earth is **[RMS CET 2020]**
(a) zero (b) balanced by the force of attraction due to moon
(c) equal to centripetal force (d) non-effective due to particular design of the satellite

21. Force of friction depends upon? **[RMS CET 2020]**
(a) Smoothness of surface
(b) Roughness of surface
(c) Inclination of surface
(d) All of above

22. Which of the following are non-contact forces? A. Magnetic force B. Gravitational force C. Electrostatic force D. Friction Choose the correct option from the codes given below.
(a) A, C and D
(b) A, B and D
(c) B, C and D
(d) A, B and C

23. Consider the following statements. A. A force can change the shape of an object. B. A force can only push, it cannot pull. Select the correct answer using the codes.
(a) Neither A nor B is correct
(b) Only B is correct
(c) Both A and B are correct
(d) Only A is correct

24. When two forces act on an object in opposite directions, the net force is the
(a) product of the two forces
(b) sum of the two forces
(c) difference of the two forces
(d) larger force only

25. Two boys push a box with forces of 60 N and 40 N in opposite directions. The box will
(a) not move at all
(b) move in the direction of the 60 N force with a net force of 20 N
(c) move in the direction of the 40 N force
(d) move with a net force of 100 N

26. Which of the following statements are correct? A. Force can change the direction of a moving object. B. Force is measured in newtons. C. Force always moves an object. Choose the correct option from the codes given below.
(a) A and B only
(b) A, B and C
(c) B and C only
(d) A and C only

27. The force that keeps us on the ground is
(a) Electrostatic force
(b) Magnetic force
(c) Gravitational force
(d) Muscular force

28. Which of the following is a non-contact force?
(a) Friction
(b) Magnetic force
(c) Muscular force
(d) Push of a hand

29. When two forces act on an object in the same direction, the resultant force is the
(a) sum of the two forces
(b) difference of the two forces
(c) product of the forces
(d) zero

30. A force of 200 N acts on an area of 0.5 m^2. The pressure exerted is
(a) 800 Pa
(b) 100 Pa
(c) 200 Pa
(d) 400 Pa

31. A force of 50 N acts on an area of 25 cm^2. The pressure exerted is
(a) 2000 Pa
(b) 2 Pa
(c) 200 Pa
(d) 20,000 Pa

32. Match List I with List II and choose the correct option. List I (Unit) List II (Quantity) A. Ampere I. Force B. Pascal II. Frequency C. Hertz III. Pressure D. Newton IV. Electric current Choose the correct option from the codes given below.
(a) A-IV, B-II, C-III, D-I
(b) A-III, B-IV, C-II, D-I
(c) A-IV, B-III, C-II, D-I
(d) A-IV, B-III, C-I, D-II

33. A diver going deeper into the sea experiences
(a) the same pressure as at the surface
(b) less pressure
(c) no pressure
(d) more pressure

34. Two forces of 25 N and 45 N act on a box in the same direction. The net force on the box is
(a) 112 N
(b) 20 N
(c) 45 N
(d) 70 N

35. Two forces of 45 N and 12 N act on a box in the same direction. The net force on the box is
(a) 57 N
(b) 33 N
(c) 45 N
(d) 54 N

36. A force of 192 N acts on an area of 0.8 m^2. The pressure exerted is
(a) 120 Pa
(b) 153.6 Pa
(c) 240 Pa
(d) 480 Pa

37. Two forces of 20 N and 15 N act on a box in opposite directions. The net force on the box is
(a) 5 N
(b) 35 N
(c) 20 N
(d) 15 N

38. The SI unit of pressure, pascal (Pa), is equal to
(a) 1 N/m^2
(b) 1 N/cm^2
(c) 1 kg/m^2
(d) 1 J/s

39. Two forces of 60 N and 10 N act on a box in opposite directions. The net force on the box is
(a) 50 N
(b) 70 N
(c) 60 N
(d) 10 N

40. A man pushes a wall but the wall does not move. The force he applies
(a) changes the colour of the wall
(b) moves the wall
(c) does not change the state of rest of the wall
(d) disappears

41. A push or a pull acting on an object is called
(a) force
(b) pressure
(c) energy
(d) power

42. A brick placed on its smallest face exerts
(a) equal pressure in all positions
(b) minimum pressure
(c) no pressure
(d) maximum pressure on the ground

43. We are not crushed by the large atmospheric pressure because
(a) the pressure inside our body is equal to it
(b) the air is very light
(c) we are very strong
(d) atmospheric pressure acts only on buildings

44. A force of 1 N acting on an area of 1 m² produces a pressure of
(a) 1 joule
(b) 1 newton
(c) 1 pascal
(d) 1 watt

45. Which of the following is an example of muscular force?
(a) Lifting a bucket of water
(b) A magnet attracting iron
(c) A falling apple
(d) Static charge on a comb

46. The rubber bulb of a dropper immersed in water is pressed and then released; water fills the dropper. This happens due to
(a) force of gravity
(b) atmospheric pressure
(c) magnetic force
(d) friction

47. A brick exerts maximum pressure on the ground when it is placed on its
(a) smallest face
(b) largest face
(c) any face, equally
(d) side face of medium size

48. The pressure exerted by a liquid increases with
(a) shape of the container
(b) decrease in depth
(c) width of the container
(d) depth

49. Atmospheric pressure is measured by a
(a) Barometer
(b) Thermometer
(c) Hygrometer
(d) Speedometer

50. Liquids exert pressure on
(a) the bottom and the walls of the container
(b) only the bottom of the container
(c) only the walls of the container
(d) no surface of the container

51. School bags are provided with wide straps because wide straps
(a) make the bag heavier
(b) increase the pressure on the shoulders
(c) make the bag look attractive
(d) reduce the pressure on the shoulders

52. A force can be measured with a
(a) Ammeter
(b) Thermometer
(c) Barometer
(d) Spring balance

53. A block of size 2 m × 1 m × 0.5 m weighs 1000 N. The pressure exerted by it when it rests on its smallest face is
(a) 1000 Pa
(b) 2000 Pa
(c) 500 Pa
(d) 4000 Pa

54. A brick weighing 30 N measures 20 cm × 10 cm × 5 cm. The maximum pressure it can exert on the ground is
(a) 3000 Pa
(b) 1500 Pa
(c) 6000 Pa
(d) 600 Pa

55. A box of weight 900 N exerts a pressure of 300 Pa on the floor. The area of the box in contact with the floor is
(a) 6 m²
(b) 270,000 m²
(c) 0.33 m²
(d) 3 m²

56. A box of weight 1200 N exerts a pressure of 150 Pa on the floor. The area of the box in contact with the floor is
(a) 8 m²
(b) 180,000 m²
(c) 0.12 m²
(d) 16 m²

57. Pressure exerted by a liquid at a point
(a) decreases with depth
(b) increases with depth
(c) is same at all depths
(d) is zero at the bottom

58. The force needed to keep an object sliding is
(a) more than the force to start it
(b) less than the force needed to start it moving
(c) equal to zero
(d) always very large

59. Atmospheric pressure at sea level is about
(a) 1,00,000 N/m²
(b) 100 N/m²
(c) 10 N/m²
(d) 1 N/m²

60. The SI unit of pressure is
(a) watt
(b) newton
(c) joule
(d) pascal

61. Which of the following works on the basis of atmospheric pressure?
(a) Sucking a drink through a straw
(b) A spring balance
(c) An electric bell
(d) A periscope

62. Railway tracks are laid on wide sleepers in order to
(a) make the train run faster
(b) increase the pressure on the ground
(c) reduce the pressure on the ground
(d) reduce friction

63. The strength of a force is expressed by its
(a) temperature
(b) colour
(c) shape
(d) magnitude

64. A force applied on an object can change its
(a) colour
(b) state of motion
(c) mass
(d) chemical nature

65. Water tanks are placed at a height in buildings so that
(a) birds cannot drink it
(b) water stays cold
(c) water flows with greater pressure
(d) it looks nice

66. Which of the following is an example of a force changing the shape of an object?
(a) A rolling ball stopping on its own
(b) Kneading dough
(c) A falling apple
(d) A magnet attracting a pin

67. A balloon filled with air and pressed from all sides bulges out because
(a) gases have no weight
(b) gases exert pressure on the walls of the container
(c) air is a liquid
(d) rubber is magnetic

68. Which of the following cannot be changed by applying a force?
(a) Direction of motion
(b) Shape of an object
(c) Speed of an object
(d) Mass of an object

69. The wall of a dam is made thicker at the bottom because
(a) it looks attractive
(b) it stores more water
(c) liquid pressure increases with depth
(d) water is lighter at the bottom

70. A sharp knife cuts better than a blunt knife because
(a) it exerts more pressure due to a smaller area
(b) it is heavier
(c) it has more friction
(d) it is made of steel

71. Atmospheric pressure is caused by
(a) the rotation of the Earth
(b) the heat of the Sun
(c) the weight of the column of air above us
(d) the Moon's gravity

72. When a rubber ball is pressed between the palms, its shape changes because
(a) it is heated
(b) a force is applied on it
(c) it gets charged
(d) it becomes magnetic

73. A body at rest remains at rest unless an unbalanced..... acts on it.
(a) colour
(b) force
(c) temperature
(d) sound

74. Pressure on the bottom of a vessel filled with water depends on the
(a) width of the vessel only
(b) height (depth) of the water column
(c) colour of the vessel
(d) shape of the vessel only

75. Muscular force is an example of
(a) non-contact force
(b) contact force
(c) magnetic force
(d) electrostatic force

76. The force with which the earth pulls objects towards itself is
(a) electrostatic force
(b) gravitational force
(c) magnetic force
(d) frictional force

77. When two forces act in opposite directions on an object, the net force is the
(a) zero always
(b) sum of the two forces
(c) product of the forces
(d) difference of the two forces

78. The upward force exerted by a liquid on an object immersed in it is
(a) gravity
(b) friction
(c) pressure only
(d) buoyant force (upthrust)

79. A body at rest remains at rest unless acted upon by an external force. This is
(a) Hooke's law
(b) Newton's second law
(c) Newton's first law
(d) Newton's third law

80. The force that pulls a falling apple to the ground is
(a) friction
(b) muscular force
(c) gravity
(d) magnetism

81. A body weighs 10 N in air and 6 N in water. The buoyant force on it is
(a) 6 N
(b) 10 N
(c) 16 N
(d) 4 N

82. A force of 100 N acts on an area of 2 m^2. The pressure is
(a) 200 Pa
(b) 98 Pa
(c) 50 Pa
(d) 102 Pa

83. Two forces acting in the same direction on a body give a net force equal to their
(a) ratio
(b) sum
(c) product
(d) difference

84. When we push a wall, it does not move because
(a) gravity stops it
(b) it is magnetic
(c) the wall exerts an equal and opposite force
(d) there is no force

85. A force of 20 N acts on an area of 4 m^2. The pressure is
(a) 24 Pa
(b) 16 Pa
(c) 5 Pa
(d) 80 Pa

86. A push or a pull on an object is called
(a) force
(b) work
(c) energy
(d) power

87. Pressure cookers cook food faster because
(a) increased pressure raises the boiling point of water
(b) they are made of steel
(c) they use less water
(d) they have thick walls

88. We do not feel crushed by atmospheric pressure because
(a) our body's internal pressure balances it
(b) it acts only on buildings
(c) it is very small
(d) air has no weight

89. Water comes out of the lowest hole of a bottle with the greatest force because
(a) air pushes it
(b) the hole is bigger
(c) pressure is greatest at the bottom
(d) water is lighter there

90. The force that keeps the planets moving around the sun is
(a) muscular force
(b) frictional force
(c) gravitational force
(d) magnetic force

91. A swimmer pushes water backward to move forward. This illustrates
(a) Pascal's law (b) Newton's first law
(c) Archimedes' principle (d) Newton's third law

92. Liquid pressure increases with
(a) height above surface (b) size of container only
(c) depth (d) colour

93. Newton's disc painted with seven colours appears ___ when rotated fast.
(a) white (b) red
(c) black (d) violet

94. A ship floats on water because
(a) the buoyant force equals its weight (b) it has no mass
(c) it is very light (d) water pushes it sideways

95. 'To every action there is an equal and opposite reaction' is Newton's
(a) third law (b) second law
(c) law of gravitation (d) first law

96. Blood pressure is measured by a
(a) stethoscope (b) manometer only
(c) sphygmomanometer (d) barometer

97. Root pressure helps in
(a) absorbing sunlight (b) pushing water up the stem
(c) storing starch (d) making food

98. Liquids exert pressure
(a) only upwards (b) in all directions
(c) only downwards (d) only sideways

99. Nails have pointed tips to
(a) increase area (b) look sharp
(c) decrease pressure (d) increase pressure

100. A brick exerts maximum pressure when placed on its
(a) edge always (b) any face equally
(c) smallest face (d) largest face

Answer Key – Chapter 1

1 (d)	**2** (b)	**3** (b)	**4** (a)	**5** (b)	**6** (c)	**7** (c)	**8** (d)	**9** (b)	**10** (a)
11 (c)	**12** (c)	**13** (d)	**14** (d)	**15** (b)	**16** (d)	**17** (b)	**18** (a)	**19** (b)	**20** (c)
21 (d)	**22** (d)	**23** (d)	**24** (c)	**25** (b)	**26** (a)	**27** (c)	**28** (b)	**29** (a)	**30** (d)
31 (d)	**32** (c)	**33** (d)	**34** (d)	**35** (a)	**36** (c)	**37** (a)	**38** (a)	**39** (a)	**40** (c)
41 (a)	**42** (d)	**43** (a)	**44** (c)	**45** (a)	**46** (b)	**47** (a)	**48** (d)	**49** (a)	**50** (a)
51 (d)	**52** (d)	**53** (b)	**54** (c)	**55** (d)	**56** (a)	**57** (b)	**58** (b)	**59** (a)	**60** (d)
61 (a)	**62** (c)	**63** (d)	**64** (b)	**65** (c)	**66** (b)	**67** (b)	**68** (d)	**69** (c)	**70** (a)
71 (c)	**72** (b)	**73** (b)	**74** (b)	**75** (b)	**76** (b)	**77** (d)	**78** (d)	**79** (c)	**80** (c)
81 (d)	**82** (c)	**83** (b)	**84** (c)	**85** (c)	**86** (a)	**87** (a)	**88** (a)	**89** (c)	**90** (c)
91 (d)	**92** (c)	**93** (a)	**94** (a)	**95** (a)	**96** (c)	**97** (b)	**98** (b)	**99** (d)	**100** (c)