


**Class: IX SECONDARY SCHOOL CERTIFICATE MODEL PAPER 2026**
**Time Allowed: 30 minutes**
**SUBJECT: PHYSICS**
**Q1: SECTION "A" (MULTIPLE CHOICE QUESTIONS)**
**Marks: 12**
**Note:** Attempt **ALL** questions from this section "A". Each question carries **ONE** mark.

- i. The branch of physics primarily concerned with the laws of motion and gravitation is:
 

A. Mechanics	B. Thermodynamics	C. Astrophysics	D. Geophysics
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- ii. The study of the properties of charges at rest and in motion is known as:
 

A. Mechanics	B. Atomic Physics	C. Magnetism	D. Electricity
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- iii. How many significant figures are there in 0.00000345?
 

A. One	B. Two	C. Three	D. Nine
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- iv. All objects in the universe are:
 

A. In motion	B. At rest	C. Oval in shape	D. None of the above
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- v. Which one is a scalar quantity?
 

A. Force	B. Time	C. Velocity	D. Acceleration
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- vi. The SI unit of torque (or moment) is:
 

A. Newton	B. Newton per second	C. Newton-second	D. Newton-metre
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- vii. Which of the following is inversely proportional to the mass of a body?
 

A. Acceleration	B. Force	C. Momentum	D. Torque
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- viii. Pressure is defined as:
 

A. Torque/Area	B. Area/Force	C. Force/Area	D. Area/Torque
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- ix. The maximum static friction is called:
 

A. Kinetic friction	B. Sliding friction	C. Static friction	D. Limiting friction
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- x. The unit of power is:
 

A. J/s	B. Watt	C. Both A and B	D. None of these
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- xi. During which process does a liquid become solid?
 

A. Boiling	B. Melting	C. Freezing	D. Condensing
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- xii. Matter is made up of tiny particles called:
 

A. Atoms	B. Molecules	C. Cells	D. Ions
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**(Practical Based Assessment)**
**Marks: 15**
**Q2:** Attempt **ALL** questions.

- i. A student is asked to determine the density of an irregularly shaped pebble. Which combination of laboratory instruments is essential for this experiment?
 

A. Vernier caliper and meter rule	B. Physical balance and measuring cylinder
C. Screw gauge and stopwatch	D. Spring balance and thermometer
- ii. While measuring the diameter of a wire using a screw gauge, Ali notes that the zero of the circular scale is below the index line of the main scale when the spindle and anvil are closed. This means the instrument has a:
 

A. Positive zero error	B. Negative zero error
C. No zero error	D. Systematic parallax error
- iii. A measuring cylinder contains water at the 50 mL mark. When a small stone is gently lowered into it via a thread, the water level rises to 75 mL. The volume of the stone is:
 

A. 125 cm <sup>3</sup>	B. 50 cm <sup>3</sup>	C. 25 cm <sup>3</sup>	D. 75 cm <sup>3</sup>
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- iv. A car is moving on a straight road. A fault causes it to drop oil exactly one drop per second. If a student observes that the distance between successive oil drops on the road is gradually increasing, what can be concluded?
 

A. The car is moving with a constant speed
B. The car is accelerating
C. The car is decelerating
D. The car is moving with uniform velocity
- v. Sara plots a speed-time graph of her bicycle ride on a straight path. The graph shows a horizontal line parallel to the time axis for 10 seconds. The area under this horizontal line represents:
 

A. Her acceleration	B. Her average speed
C. The distance she traveled	D. Her change in velocity
- vi. A student drops a ball from a high balcony and uses a stopwatch to time its fall. If air resistance is considered negligible, which value should be used for acceleration in their kinematic calculations?
 

A. 0 m/s <sup>2</sup>	B. 10 m/s <sup>2</sup> (acting upwards)
C. 10 m/s <sup>2</sup> (acting downwards)	D. -9.8 m/s <sup>2</sup> (acting horizontally)



- vii. In a laboratory crash test, a toy trolley with an attachable crumple zone collides with a wall. How does the crumple zone reduce the impact force on the trolley?
- By decreasing the total change in momentum
  - By increasing the time taken for the collision
  - By reducing the mass of the trolley
  - By increasing the final rebound velocity
- viii. A student slides a wooden block on a table using a spring balance. When she places a 500g mass on top of the block, the spring balance reads a higher pulling force.  
This demonstrates that sliding friction depends heavily on:
- Surface area of contact
  - Speed of the block
  - Normal reaction force (load)
  - Temperature of the surfaces
- ix. To loosen a highly tightened nut on a car wheel, a mechanic specifically chooses a long spanner instead of a short one. The long spanner is more effective because it:
- Reduces the friction inside the nut
  - Increases the physical force exerted by the mechanic's arm
  - Increases the perpendicular distance from the pivot, thus increasing the torque
  - Changes the direction of the force
- x. A student tries to balance a metre rule on a central wedge (pivot at 50 cm). If a 2 N weight is placed at the 20 cm mark (30 cm from the pivot), at what distance from the pivot on the opposite side should a 3 N weight be placed to achieve equilibrium?
- 10 cm
  - 20 cm
  - 30 cm
  - 45 cm
- xi. During a Hooke's Law experiment, a student plots an extension-load graph for a spring and notices that the straight line starts to curve steeply upwards past a certain weight. What does this curvature indicate?
- The spring constant has suddenly increased
  - The spring has passed its elastic limit and is deforming plastically
  - Friction is acting on the spring
  - The measurements of the weights are incorrect
- xii. A student observes a simulation of an artificial satellite remaining in a stable circular orbit around the Earth. What provides the necessary centripetal force to keep it in this orbit without flying off into space?
- Atmospheric air resistance
  - Magnetic force from the Earth's poles
  - Gravitational force between the Earth and the satellite
  - The forward thrust of the satellite's engines
- xiii. A sealed plastic syringe is filled with 10 cm<sup>3</sup> of air. When the plunger is pushed inwards, reducing the internal volume to 5 cm<sup>3</sup> while the temperature is kept constant, what happens to the gas pressure inside?
- It doubles
  - It halves
  - It remains constant
  - It drops to zero
- xiv. After taking a swim on a hot, dry day, a person feels a sudden cooling sensation as the water dries from their skin. Which thermodynamic principle explains this?
- Evaporation causes cooling because the highest-energy molecules escape
  - Condensation absorbs heat from the surrounding air
  - Water has a low specific heat capacity
  - Thermal expansion of the skin absorbs energy
- xv. A student sets up an experiment to heat crushed ice in a beaker and records the temperature every minute. During the specific time interval when the ice is actively melting into water, what will the temperature-time graph show?
- A steady, steep rise in temperature
  - A horizontal line (constant temperature)
  - A steady drop in temperature
  - A parabolic curve upwards

**END OF SECTION A**



Class: IX

SECONDARY SCHOOL CERTIFICATE MODEL PAPERS 2026

Time: 2 hours 30 minutes

SUBJECT: PHYSICS (SECTION "B" &amp; SECTION "C")

Total Marks 48

SECTION "B" (SHORT ANSWER QUESTIONS)

24 Marks

**Q3:** Answer any **EIGHT** questions from this section. Each question carries **THREE** marks.

- i. Define significant figures. Determine the number of significant figures in the following:
  - a. 1.33
  - b. 0.0012
  - c. 7.00
  - d. 0.00101
- ii. List three key differences between speed and velocity.
- iii. State Newton's second law of motion. Also, explain the relationship between the applied force and the acceleration produced in an object.
- iv. What is the moment of force? Write the formula for it.
- v. What is temperature? Provide the formulas to convert temperature between the following scales:
  - a. Celsius to Kelvin
  - b. Fahrenheit to Celsius
- vi. What is work? Derive the equation for work:  $W = F \cdot d \cdot \cos\theta$ .
- vii. What is the mass of a solid iron wrecking ball with a radius of 18 cm, if the density of iron is 7.8 gm/cm<sup>3</sup>?
- viii. A car is moving at a velocity of 30 m/s. When the brakes are applied, its velocity decreases at a rate of 6 m/s<sup>2</sup> (deceleration). Find the distance it will cover before coming to rest.
- ix. A gardener is pushing a lawnmower with a force of 80 N at an angle of 40° to the ground.
  - a. Find the horizontal component of the force.
  - b. Find the vertical component of the force.
- x. How much force is required to pull a spring by a distance of 30 cm, if the spring constant is 15 N/m?
- xi. Determine the gravitational force of attraction between Hamza and Ahmed, who are 50 meters apart. The mass of Hamza is 60 kg and Ahmed's mass is 70 kg. (Given:  $G = 6.673 \times 10^{-11} \text{ Nm}^2/\text{kg}^2$ )
- xii. A container holds 30 m<sup>3</sup> of air at a pressure of 150,000 Pa. If the volume changes to 10 m<sup>3</sup> by compressing the piston, what will the pressure of the gas become, assuming constant temperature?

**SECTION "C" (DETAILED ANSWER QUESTIONS)**
**24 Marks**
**Q4:** Answer any **FOUR** questions from this section. Each question carries **SIX** marks.

- i. Write two advantages and two disadvantages of friction. Describe two practical applications of friction in daily life.
- ii. What is fluid pressure? Derive an expression for pressure at a point in a liquid and discuss two factors affecting fluid pressure.
- iii. What is an artificial satellite? Derive the expression for the velocity of a satellite orbiting the Earth, given by:  $v = \sqrt{gh(R_e + h)}$
- iv. State Boyle's Law and explain its application in a real-life scenario (e.g., a bicycle pump).
- v. Define Kinetic Energy and Potential Energy. Derive the equation for Kinetic Energy:  
 $K.E = \frac{1}{2} m v^2$ .
- vi. What is Evaporation? Discuss the factors that affect the rate of evaporation.

**END OF PAPER**