GUJARAT SECONDARY AND HIGHER SECONDARY EDUCATION BOARD
GANDHINAGAR
Diagnostic test for standard-10

Subject	:-	**SCIENCE (11)**	**Total Marks**	:-	**80**
Medium	:-	**ENGLISH**	**Time**	:-	**3 Hours**

Section - A

Q-1 Choose the correct option from the options given below for the following statements. **(6)**

1. What physical state of matter it has a define shape?
   (A) Liquids and gases   (B) Liquid   (C) air   (D) solid   **1**

2. Which of the following substance acts as a pure substance?
   (A) Sodium chloride (B) Cold drink (C) Aerosol (D) Clay   **1**

3. Which of the following pair is not true?
   (A) Calcium-Ca (B) Silver-Ag (C) Gold-Au (D) Copper-Co   **1**

4. Most of the mass of an atom is contained in _____.
   (A) Protons (B) Electron (C) Center (D) Neutrons   **1**

5. Which of the following mixtures is not a solution?
   (A) Sea water   (B) air   (C) Soda water   (D) Coal   **1**

6. Which tissue is an involuntary muscle with linear stripes?
   (A) Skeletal muscle   (B) Smooth muscle   **1**
   (C) Heart muscle   (D) Fiber component muscle

Q-2 Fill in the blanks so that the following statements are true. **(6)**

1. _____ is not an animal of the arthropod group. (Ginga, Butterfly, Leech)   **1**

2. If an object moves at a constant speed of $10 \, m \, s^{-1}$ on a circular path with radius r, then the object moves _____. (Constant velocity, acceleration, constant acceleration)   **1**

3. When force is applied to an object, its _____ is not affected. (mass, shape, velocity).   **1**

4. The initial velocity of a free falling object is _____.(More, $9.8 \, m \, s^{-1}$, zero)   **1**

5. Sound waves cannot propagate from _____. (Glass, water, vacuum)   **1**

6. Tuberculosis is a disease caused by _____. (Viruses, parasites, bacteria)   **1**

Q-3 Write the following statements true or false. **(4)**

1. Influenza is a disease of the respiratory system.   **1**

2. During the day the wind speed is from land to sea.   **1**

3. Urea is a nitrogen nutrient.   **1**

4. Inertia is a scalar quantity.   **1**

Q-4 Answer the following questions as requested. **(8)**

1. Which diseases are more likely to be caused by breathing in polluted air?   **1**

2.	How do weeds affect plant growth?	1
3.	What is the largest source of energy for the earth?	1
4.	Nipa completes one cycle on a circular path with a circumference of 314 m. Find the displacement by Nipa?	1
5.	Which waves are transmitted by compressions and rarefaction?	1
6.	What transforms the spinal cord in vertebratesanimals.	1
7.	Which are the basic components of red blood cells?	1
8.	Give the full name of the ATP.	1

Section - B

- **Write the answer of any 9 questions in 40 to 50 words as requested. (2marks each)**

Q-5	What kind of characteristics of particles of matter have?	2
Q-6	What is a mixture? Give an example.	2
Q-7	Match the following.	2

Section I (element)	Part II (Sign)
(1)Phosphorus	(a) ⓘ
(2)Silver	(b) Ⓛ
(3) Iron	(c) ⊘
(4) Lead	(d) Ⓢ

Q-8	Give two points of difference between: Speed - Acceleration	2
Q-9	Give two points of difference between: Atomic number -Mass number	2
Q-10	State for the displacement whether the following situation is true or false. (a) It cannot be zero. (b) Its value is greater than the distance covered by the object.	2
Q-11	"When a carpet is hit with a stick, dust comes out of it." Explain.	2
Q-12	Give two points of difference: Force -Weight	2
Q-13	Thunder and lightning both occur simultaneously but thunder is heard a few seconds after lightning appears. Give a reason.	2
Q-14	Why is it not necessary to add nitrogenous fertilizer for the cultivation of pulses(leguminous)?	2
Q-15	Why do we need water for life?	2

Q-16 Explain the physical and chemical changes with two examples. 2

Section - C

- **Write the answer of any 6 questions in 60 to 80 words as requested. (3 marks each)**

Q-17 Write the chemical formulas of the following compounds. (1) Aluminum oxide (2) Calcium hydroxide (3) Sodium carbonate 3

Q-18 Explain the molecular pattern presented by Niels Bohr. 3

Q-19 Classify the following into element, compound and mixture.
(1) Sodium (2) Clay (3) Sugar solution (4) Calcium carbonate (5) Methane (6) Silver 3

Q-20 Write the formula for acceleration. When will you say a body is in,
(i) uniform acceleration? (ii) nonuniform acceleration? 3

Q-21 Explain reverberation and suggest ways to reduce / prevent it. 3

Q-22 Explain the nutrients of the plant. 3

Q-23 Explain the structure, specificity and function of mitochondria. 3

Q-24 State the two properties of solid, liquid and gaseous states. 3

Q-25 The formation of the centers of the X, Y, and Z atomic species is as follows.

	X	Y	Z
Protons	3	6	7
Neutrons	4	6	7

Calculate (i) Atomic number(ii) mass number.Of X, Y, and Z. 3

Section - D

- **Write the answer of any 5 questions in 90 to 120 words in detail. (4marks each)**

Q-26 Explain the factors affecting evaporation. 4

Q-27 Explain Rutherford's experiment with α-particle scattering. 4

Q-28 Write Newton's second law of motion and get the formula F = ma. 4

Q-29 Explain the universal law of gravity and get its mathematical form. 4

Q-30 Give reasons:
(1) Two friends on the moon cannot hear each other's voices.
(2) Echoes cannot be heard in a small room. 4

Q-31 Write a note on the carbon cycle. 4

Q-32 State the location of the neuron, its cell structure (with diagram) and function. 4

Q-33 What are infectious diseases? The spread of infectious diseases is widely discussed. 4

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