ANJIT

Educating for Transmission of Civilization

AIIMS-NEET-JEE-ICAR-TECH ACADEMY

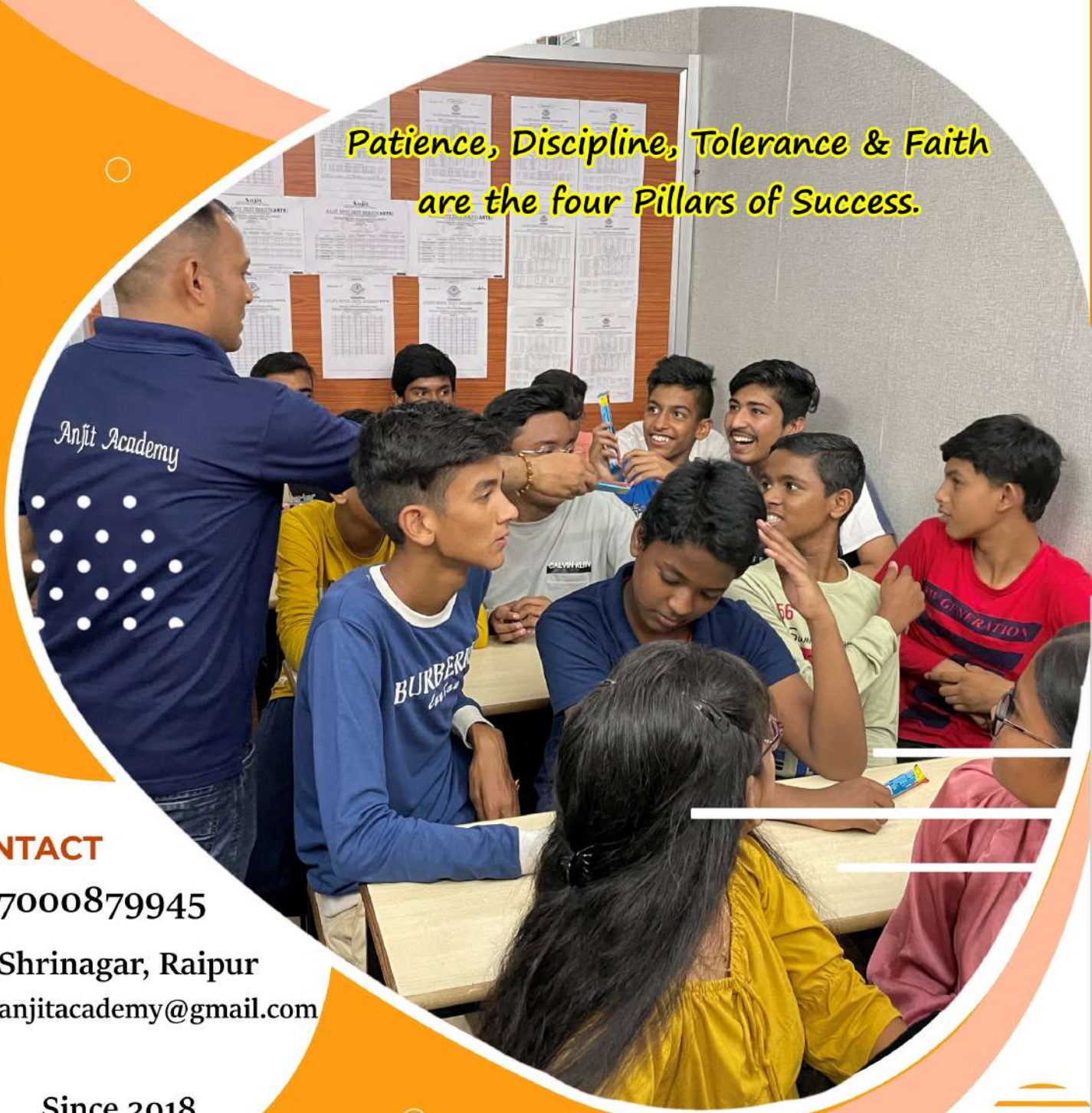
Super Easy Chemistry By

Er. Jitendra Gupta Sir

Half Yearly Paper_Class9

M.T : 90 min. | Date: | M.M : 70

Science : Chemistry | Physics | Biology



CONTACT

7000879945

Shrinagar, Raipur

anjitacademy@gmail.com

Since 2018

हमारा विश्वास...हर एक विद्यार्थी है खास !!

+91-7000879945

Half Yearly Examination for Class 9th

anjitacademy.com

Unit No.	Unit Name
Unit I	Matter in Our Surroundings
Unit II	Is Matter around Us Pure!
Unit III	The Fundamental Unit Of Life
Unit IV	Tissues
Unit V	Motion
Unit VI	Force and Laws Of Motion

General Instructions:

1. This question paper consists of 39 questions in 3 sections. Section A is Chemistry (25 marks), Section C is Physics (25 marks). and, Section B is Biology (20 marks)
2. All questions are compulsory. However, an internal choice is provided in some questions. A student is expected attempt only one of these questions.

Think Big…Think +ve…Think ANJIT

Section ' A ' __ Chemistry _ 25 marks

1 . Which of the following statements is not true about H_2SO_4? **[1]**

A. It is composed of 2 Hydrogen, 1 Sulphur, and 4 Oxygen atoms.

B. Its relative molecular mass is 98.

C. It is composed of one molecule of H_2, one atom of S, and two molecules of O_2.

D. Its relative molecular mass is 108.

a) B and C
b) All of these
c) A, B and D
d) C and D

2 . Which one is a physical change? **[1]**

a) Mixing NH_3 and HCl
b) Adding NaCl to water
c) Mixing $BaSO_4$ + NaCl
d) Burning magnesium in air

3 . Which of the two statements is true? **[1]**

Statement A: The temperature of the liquid becomes constant once it starts boiling.

Statement B: The pressure of air at sea level is 70 cm.

a) Both A and B are false
b) Both A and B
c) Statement B
d) Statement A

4 . Which of the following statements are true for pure substances? **[1]**

(i) Pure substances contain only one kind of particles.
(ii) Pure substances may be compounds or mixtures.
(iii) Pure substances have the same composition throughout.
(iv) Pure substances can be exemplified all elements other than nickel.

a). (i) and (ii).
b) (i) and (iii)
c) (iii) and (iv).
d) (ii) and (iii)

5. Name the process which occurs when a drop of dettol is added to water. **[1]**

6. Why do the doctors advise to put strips of wet cloth on the forehead of a person having high fever? **[1]**

7. Why do trees acquire more leavesduring summer? **[1]**

8. Cotton in solid but it floats on water. Why? **[1]**

9 . Complete the following table. **[2]**

Atomic Number	Mass Number	Number of Neutrons	Number of Protons	Number of Electrons	Name of the atomic Species
9	-	10	-	-	-
16	32	-	-	-	Sulphur

10. Name the methods used to separate these: **[2]**
(a) Butter made from curd. (b) Salt made from seawater (c) Camphor made from salt

11. Define latent heat of vaporization & diffusion; Explain with examples. **[2]**

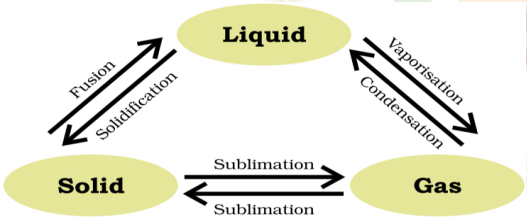
12. Convert the going temperature Celsius scale. **[2]**
(a) 300 K (b) 573 ^{0}F

13. A solution contains 80 g of common salt 640 g of water. calculate the concentration in terms of mass percentage of the solution. **[2]**

14. (a) Which of the following are matter?
Chair, smell, air, love, smell, hate, almonds thought, cold, cold-drink, smell of perfume. **[1+2]**
(b) Write the characteristics of Matter.

15. Read the following text carefully and answer the questions that follow: **[4]**

Matter around us exists in three different states–solid, liquid and gas. These states of matter arise due to the variation in the characteristics of the particles of matter. Solids have a tendency to maintain their shape when subjected to outside force. Solids may break under force but it is difficult to change their shape, so they are rigid. the difference in various states of matter is due to the difference in the distances between the constituent particles. Pressure and temperature determine the state of a substance, whether it will be solid, liquid or gas.



i. write the properties of solid state of matter? (1)

ii. How does solid gets converted directly into gaseous states of matter? (1)

iii. What is vaporization? (1)

iv. Give an example from which we can say that gas can directly converted into solid state of matter? (1)

Section ' B ' __ Physics_ 25 marks

The following questions consists of two statements — Assertion (A) and Reason (R). Answer the questions by selecting the appropriate option given below.

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

(b) Both (A) and (R) are true, but (R) is not the correct explanation of (A).

(c) (A) is true, but (R) is false.

(d) (A) is false, but (R) is true.

1. Assertion (A) The gravitational force varies on changing the mass of the object. [1]
Reason (R) The gravitational force between any two objects is directly proportional to the product of their masses and inversely proportional to the square of distance between them.

2. Assertion (A) Work is said to be done only when a force is applied on a body and the body is displaced in the direction of force. [1]
Reason (R) If there is no displacement, even if the force is applied, no work is done.

3. State first law of inertia with minimum 2 examples from your daily life? [2]

4. Define speed and velocity for the particle which is moving in curved path? with their s.i unit. [2]

5. Define acceleration and retardation? with their s.i unit. [2]

6. A 5 kg ball is thrown upward with a speed of 10 m/s attains a height of 10 m. [3]
(a) Find the potential energy when it reaches the highest point.
(b) Calculate the maximum potential energy, when it reaches the ground.
(c) A body is thrown up with kinetic energy of 10 J. If it attains a maximum height of 5 m, find the mass of the body.

7. A student was observing the motion of a stone of mass 5kg which is dropped from a height of 10 m.
(i) What is meant by law of conservation of energy? Explain with an example. [1]
(ii) Find the kinetic energy of the stone just before it touches the ground. (Take, g = 9.8 m/s2) [2]

8. Two objects A and B, have equal volumes but different masses. Object A is made of wood and object B is made of metal. Both are initially at rest on a frictionless horizontal surface. [3]
(a) Explain with reasons, which object has greater inertia and why?
(b) A constant horizontal force is applied to each object separately. Compare their accelerations and explain, how the difference in inertia affects their motion?

9. Attempt ANY two [2]
(a) State the law of conservation of energy. Give an example in which we observe a continuous change of one form of energy into another and vice-versa.
(b) Calculate the amount of work required to stop a car of 1000 kg moving with a speed of 72 km/h. An engine pulls train 1 km over a level track.
(c) Calculate the work done by the train given that the frictional resistance is 5×10^5 N.

10. Two spheres of mases 40 kg and 60 kg are placed 0.5 m apart (measured between their centers). [2]
Take, G = 6.67 x 10-11 Nm2 /kg2.
(a) Calculate the gravitational force between them. If the distance between them is doubled, find the new gravitational force.
(b) State the ratio of the initial force to the new force and explain the reason.

11. While catching a fast-moving cricket ball, a fielder in the ground gradually pulls his hands backwards with the moving ball. In doing so, the fielder increases the time during which the high velocity of the moving ball decreases to zero. Thus, the acceleration of the ball is decreased and therefore the impact of a catching the fast-moving ball (see figure) is also reduced. If the ball is stopped suddenly, then its high velocity decreases to zero in a very short interval of time. Thus, the rate of change of momentum of the ball will be large. Therefore, a large force would have to be applied for holding the catch that may hurt the palm of the fielder. [4]
Given reason
(i) Why a fast-moving cricket ball can cause more injuries to a cricketer than a moving tennis ball?
(ii) Why does a fielder pull his hands backwards, while catching a fast-moving cricket ball?

1. Where are proteins synthesized inside the cell? [1]
2. Name the types of simple tissues. [1]
3. What are the functions of areolar tissue? [1]
4. Give three features of cardiac muscles. [1]
5. What does a neuron look like? [1]
6. Which tissue makes up the husk of coconut? [1]

7. How many types of elements together make up the xylem tissue ? Name them. [2]
8. Differentiate between parenchyma, collenchyma and sclerenchyma on the basis of their cell wall. [2]
9. Diagrammatically show the difference between the three types of muscle fibres. [2]
10. Differentiate between striated, unstriated and cardiac muscles on the basis of their structure and site/location in the body. [2]
11. Draw a labelled diagram of a neuron. [2]

12. Name the following: [2]
    i. Tissue that forms inner lining of our mouth.
    ii. Tissue that connects muscle to bone in humans.
    iii. Tissue that transports food in plants.
    iv. Tissue that stores fat in our body.
    v. Connective tissue with a fluid matrix.
    vi. Tissue present in the brain.

13. Fill in the gaps in the following table illustrating differences between prokaryotic and eukaryotic cells. [2]

Prokaryotic Cell	Eukaryotic Cell
1. Size. Generally small (1 – 10 µm).	1. Size. Generally large (5 – 100 µm).
2. Nuclear Region_____and known as_____	2. Nuclear Region. Well defined and surrounded by a nuclear membrane.
3. Chromosomes. Single	3. More than one Chromosome
4. Membrane Bound Cell Organelles. Absent.	4. _____