

**GENIUS HIGH SCHOOL :: BHUVANAGIRI**  
**SUMMATIVE ASSESSMENT - II**

**Class : IX**  
**Subject : GENERAL SCIENCE**

**Time: 3Hrs**  
**Max marks: 80**

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**General Instructions:**

**Read the following instructions very carefully and strictly follow them :**

(i) This question paper comprises **three** sections–A, B, and C. There are **30** questions in the question paper. All questions are compulsory.

(ii) **Section A** : Question no. **1 to 20** all questions or part thereof are of **one** mark each. These questions comprise Multiple Choice Questions (MCQ)

(iii) **Section B** : Question no. **21 to 30** are short answer type questions, carrying **3** marks each. Answer to these questions should not exceed **50 to 60** words.

(iv) **Section C** : Question no. **31 to 36** are long answer type questions, carrying **5** marks each. Answer to these questions should not exceed **80 to 90** words.

(v) Answers should be brief and to the point. Also the above mentioned word limit be adhered to as far as possible.

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**SECTION - A**

1. Which organelle serves as a channel for transport of materials between cytoplasm and nucleus?
2. What is the nature of the displacement time graph of a body moving with constant acceleration?
3. Name any three diseases transmitted through vectors.
4. Name the S.I unit of Pressure .
5. Which organelle is involved in the formation of lysosomes?
6. The value of acceleration due to gravity on Earth is \_\_\_\_\_ .m/s<sup>2</sup>
7. How did Rutherford come to the conclusion that most of the space in an atom is empty?
8. Fill in the blanks:-
  - a) Ozone-Layer is getting depleted because of \_\_\_\_\_.
  - b) The two forms of oxygen found in the atmosphere are \_\_\_\_\_.
9. Why do isotopes of an element show similar chemical properties?
10. In which type of plants are Nitrogen fixing bacteria present.
11. Acid rain contains :-
  - a) oxides of carbon
  - b) oxides of carbon & sulphur
  - c) oxides of nitrogen
  - d) oxides of nitrogen & sulphur
12. Define the commercial unit of electrical energy.
13. What is momentum of an object of mass  $m$ , moving with a velocity  $v$ ?
14. A rocket is moving up with a velocity  $v$ . If the velocity of this rocket is suddenly tripled. What will be the ratio of two kinetic energies?
15. BCG vaccine is used to cure
  - a) Pneumonia
  - b) Polio
  - c) Tuberculosis
  - d) Amoebiasis
16. Write down the electron distribution of chlorine atom. How many electrons are there in L Shell (Atomic number of chlorine is 17)
17. What is mass percentage of a solution?
18. Name the solutions which show the Tyndall effects.
19. Is water a compound? Prove your answer.
20. Write the applications of Newton's third law of motion.

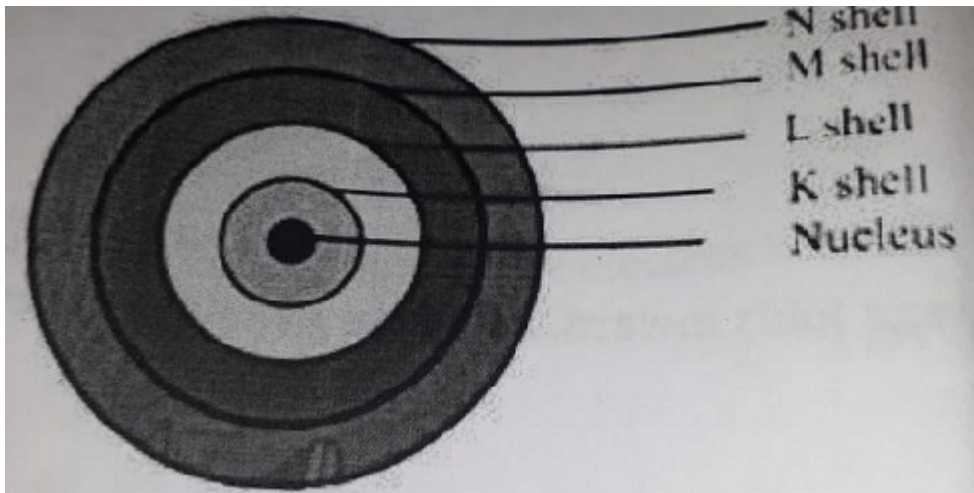
**SECTION - B**

21. Derive the expression for force with Newton's second law.
22. Naveen is suffering from respiratory disorder since long time. His daughter Sarika took him to doctor. After studying his case, the doctor came to know that Naveen was residing near a very busy road.
  - (i) What would be the possible reason for Naveen's respiratory disorder.
  - (ii) Which major pollutants are present in exhaust of vehicles.
  - (iii) Write the preventive measures that should be taken.

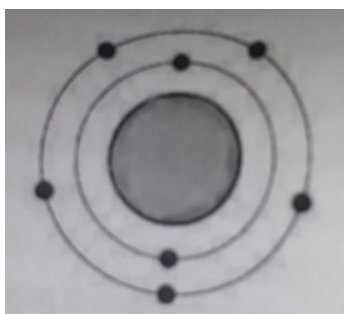
23. What is universal law of gravitation?  
 24. Calculate the number of molecules present in 4.4g of CO<sub>2</sub>.  
 [ At Mass: C=12, O=16u, N<sub>A</sub> = 6.02 x 10<sup>23</sup>mol<sup>-1</sup>

25. Read the passage and answer any four questions:

Only certain special orbits known as discrete orbits the electrons are allowed inside the atom. While revolving in discrete orbits the electrons do not radiate energy. Neutrons are present in the nucleus of all atoms, except hydrogen. In general, a neutron is represented as 'n'. The mass of an atom is therefore given by the sum of the masses of protons and neutrons present in the nucleus. The maximum number of electrons present in a shell is given by the formula 2n<sup>2</sup>, where 'n' is the orbit number or energy level index, 1, 2, 3,.... Electrons are not accommodated in a given shell unless the inner shells are filled.



- i) Who discovered a subatomic particle which had no charge and a mass nearly equal to that of a proton?  
 a) Ernest Rutherford    b) Thomson    c) J.Chadwick    d) Neils Bohr
- ii) The maximum number of electrons that can be accommodated in the outermost orbit is  
 a) 8    b) 9    c) 5    d) 2
- iii) Identify the element in the following figure:



- a) Oxygen    b) Nitrogen    c) Hydrogen    d) Sodium
- iv) The maximum number of electrons that can be accommodated in the outermost orbit is  
 a) 2,8,1    b) 2,8,2    c) 2,8,5    d) 2,7
- v) The total number of electrons that can be accommodated in the third orbit or M-shell is  
 a) 18    b) 17    c) 16    d) 15

- 26.(a) Draw a well labelled diagram of plant cell. How is it different from animal cell?  
 (b) Differentiate between rough and smooth endoplasmic reticulum.

27. Determine the mass by mass percentage concentration of a 100g salt solution which contains 20g salt.  
 28. Derive an expression for the potential energy of the body. Calculate P.E of body of mass 10 kg at a height of 10 m

29. Differentiate between  
 (a) Sclerenchyma and parenchyma tissues (draw their diagram also)  
 (b) Draw a well labelled diagram of various types of muscles found in human body.

30. a) State the law of Constant Proportion

b) In a compound Carbon and Oxygen react in a ratio 3:8 by mass to form carbon dioxide. What mass of oxygen is required to react completely with 9g Carbon?

### SECTION - C

31. Describe a method of separating Ammonium Chloride from the mixture of ammonium chloride and common salt.

32. Describe the structure and function of different types of epithelial tissues. Draw the diagram of each type of epithelial tissue.

33. Derive the equation:  $S = ut + \frac{1}{2} at^2$  graphically

**OR**

Derive the equation:  $v^2 - u^2 = 2as$  graphically

34. (a) What are the green house gases?

(b) Give a diagrammatic representation of Carbon cycle in nature.

35. Calculate the formula unit masses of ZnO, Na<sub>2</sub>O, K<sub>2</sub>CO<sub>3</sub>, given atomic masses of Zn = 65 u, Na = 23 u, K = 39 u, C = 12 u and O = 16 u.

36. a) Prove the law of conservation of energy for a stone moving vertically down.

b) A boy of mass 50kg runs a staircase of 45 steps in 9s. If the height of each step is 15cm, Find his power [g=10 ms<sup>-2</sup>]