

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

Class : X  
Subject : GENERAL SCIENCE

Time: 3Hrs  
Max marks: 80

**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.

**SECTION - A**

1. Identify the reducing agent in the following reaction.  
$$\text{ZnO} + \text{Zn} + \text{CO}$$
2. Which among the males and females are Homo gametic? Explain
3. Name the substances formed when gypsum is heated.
4. What are the functional units of kidney? Name their main parts.
5. Why does the sky appears in blue colour?
6. Write the female reproductive parts of flowering plants.
7. Why do we prefer convex mirror as a rear view mirror in vehicles?
8. Define resistance. And write the units of it.
9. Why did United Nations act of control production of CFC's used in refrigerators?
10. Find the focal length of a lens of power -2D. What type of lens is this?

**OR**

Find the focal length of a convex mirror whose radius of curvature is 30cm.

11. Out of the wires 'P' and 'Q' shown below which one has greater resistance



12. Draw a magnetic field lines due to a current through the circular loop.
13. The trait in an organism is influenced by  
a) Parental DNA    b) Maternal DNA    c) Neither Parental nor Maternal    d) Both Parental and Maternal DNA

14. You have two metallic wires of resistance  $12\Omega$  and  $6\Omega$ . How will you connect these wires to get effective resistance of  $4\Omega$ .
15. What is the role of acid in our stomach?
16. Where does actual gases exchange takes place in the lungs?
17. Which of the following are environmental friendly practices?
  - i) Carrying cloth bag for shopping
  - ii) Switching off unnecessary lights and fans.
  - iii) Walking to school instead of getting your parents to drop you on their scooter
  - iv) Disposable cups are made of sandy loam soils

a) i and ii   b) ii and iii   c) i,ii and iii   d) All
18. Write the properties of magnetic field lines
19. Write the SI unit Electric power.
20. Write the relationship between focal length and radius of curvature

### SECTION - B

21. Define contraception. Write two different methods of contraception.
22. Name any two elements of group one and write their electronic configuration? What similarity do you observe in their electronic configuration? Write the formula of oxide for any of the above said element.
23. Explain the following terms
  - i) Bio-magnification
  - ii) Double circulation
  - iii) Mal nutrition
24. Write the chemical formula of plaster of Paris. How is it prepared? How is it different from gypsum?
25. A concave lens has focal length of  $15\text{cm}$ . At what distance should the object from the lens be placed so that it forms an image at  $10\text{cm}$  from the lens? Also find the magnification produced by lens.
26. Read the following and answer any **Three** question 26 (i) to 26 (v)
 

Metals react with non-metals by losing or gaining electrons. They have a give and take relation between them. Ionic compounds are usually solid and hard in nature. They are generally soluble in water and insoluble in solvents like petrol, kerosene etc., the melting and boiling points of electrovalent compounds are high. In order to change the physical state of the electrovalent compounds (from solid to liquid to gas), a high temperature is needed to overcome the attractive forces.

  - (i) Which of the properties are not generally exhibited by ionic
    - a) Electrical conductivity in molten state
    - b) Electrical conductivity in solid state
    - c) High melting and boiling points
    - d) Solubility in water
  - (ii) Electrovalent compounds are usually solid and hard in nature. This is due to
    - a) Strong forces of attraction between the oppositely charged ions
    - b) Weak forces of attraction between the oppositely charged ions
    - c) Strong forces of attraction between the same charged ions.
    - d) Weak forces of attraction between the similarly charged ions.

- (iii) Transfer of one more valence electrons from a metal to non-metal takes place in case of
- Chemical bonding
  - Molecular bonding
  - Ionic bonding
  - Covalent bonding
- (iv) Magnesium oxide is formed by transferring electrons from magnesium atoms to oxygen atoms; the magnesium atom has the number of valence electrons as:
- Three
  - Four
  - One
  - Two

27. Atom of an element contains five electrons in its valence shell. This element is a major component of air. It exists as a diatomic molecule.
- Identify the element
  - Show the bond formation between two atoms of this element.
  - Write the nature of the bond between the two atoms

**(OR)**

Give reason, why the carbon compounds

- Generally, have low melting and boiling points
  - Do not conduct electricity in molten state.
28. a) How is the rainbow formed?  
b) Draw a labelled diagram to illustrate the formation of rainbow?
29. How much current will an electric bulb draw from 220V source, if the resistance of the bulb is  $1200\Omega$ ? If in place of bulb, a heater of resistance  $100\Omega$  is connected to the wires, calculate the current drawn by it.
30. State which of the following chemical reactions will take place or not, giving suitable reason for each.
- $\text{Zn(s)} + \text{CuSO}_4(\text{aq}) \rightarrow \text{ZnSO}_4(\text{aq}) + \text{Cu(s)}$
  - $\text{Fe(s)} + \text{ZnSO}_4(\text{aq}) \rightarrow \text{FeSO}_4(\text{aq}) + \text{Zn(s)}$

### SECTION - C

31. Describe the following:
- “Bishnoi” efforts towards conservation of forests
  - Mono-hybrid cross with chart
  - Male reproductive system diagram and its labeling
32. a) Define the following:
- Valency
  - Atomic size
- b) How do the valency and the atomic size of the element vary while going left to right along a period in the modern periodic table?
33. Oxygen-rich blood from the lungs comes to the thin-walled upper chamber of the heart on the left. The left upper chamber (A) then relaxes. If then contracts and the blood is allowed to enter the next chamber (B), as it expands. When the muscular left lower chamber of the heart contracts the blood is pumped out to the body via aorta. Deoxygenated blood reaches from the body to the upper chamber on the right side of the heart © and it expands. As this part contracts, the corresponding lower chamber (D) dilates. This transfer blood to right ventricle, which in turn pumps it to lungs for oxygenation.

- (i) In the human body, the blood enters the aorta of the circulatory system from the  
 a) Chamber A    b) Chamber B    c) Chamber C    d) Chamber D
- (ii) Name the chamber marked as 'C' and whether it will receive oxygenated blood or deoxygenated blood  
 a) Right atrium, deoxygenated blood  
 b) Right atrium, Oxygenated blood  
 c) Right Ventricle, deoxygenated blood  
 d) Right Ventricle, Oxygenated blood
- (iii) Name the chamber marked as 'B'  
 a) Right Artium    b) Left Artium    c) Right Ventricle    d) Left Ventricle
- (iv) Name the blood vessel that brings blood to chamber A  
 a) Pulmonary artery    b) Pulmonary vein    c) Vana cava    d) Aorta
- (v) What is the correct route of blood in human heart?  
 a) A → B → D → C → Lungs  
 b) A → B → LUNGS → C → D  
 c) C → D → B → A → LUNGS  
 d) C → D → LUNGS → A → B

34. Draw a schematic diagram of a circuit consisting of a battery of 3 cells of 2V each, a combination of three resistors of  $10\Omega$ ,  $20\Omega$ ,  $30\Omega$  connected in parallel, plug key and an ammeter, all connected in series. Use this circuit to find the value of the following:  
 i) Current through each resistor  
 ii) Total current in circuit  
 iii) Total effective resistance of the circuit

(OR)

- i) Why is the series arrangement not used for domestic circuits? Explain.  
 ii) Show how would you join three resistors, each of resistance  $9\Omega$  so that the equivalent resistance of the combination is (a)  $3\Omega$  (b)  $6\Omega$
35. Write an activity to show carbon dioxide gas is released when acids react with metal carbonates.
36. Experimentally verify the Ohm's law.