**Cruise steps primary school, YZ-campus, 2017**

**Quick Revision study by Integration method**

**For grade 8 students on GS**

**Complied by**

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**Review exercises** **about Symbolic Representation** **on GS**

* **Integrating Chapter 3 of grade 7 with Chapters 1, 2, 3 of grade 8**

1. **Symbols and Units of measurements**
2. Write the names and symbols of the units of the basic and derived units, respectively.
   1. Mass, time, temperature, length, electric current, Mole of substance,
   2. Density, volume, area, force, gravity, heat, pressure, power, work, astronomical unit
3. Complete the following table

|  |  |  |  |
| --- | --- | --- | --- |
| Prefix | Symbol | Name | Decimal representation |
| Kilo- |  |  |  |
| Centi- |  |  |  |
| Milli- |  |  |  |
| Micro- |  |  |  |
| Mega- |  |  |  |

1. Match the quantities in column A to their units in column B

Column A Column B

\_\_\_\_ 1. Mass A. K

\_\_\_\_ 2. Density B.Kgm/s2

\_\_\_\_3. Area C.m3

\_\_\_\_4. Force D.m2

\_\_\_\_ 5. Temperature E. Kg/m3

-------6. Electric current F. Kg

G. A

4. Given the units; m/s ,s, J, Kg, A, V, m, m3, N/m2, K, m/s2 and m2. Group these as basic units or derived units.

**B. Subatomic particles**

1. What is the **notation** of
2. Atomic symbol of a neutral atom?
3. Protons, electrons and neutrons, respectively?
4. Atomic number and mass number, respectively?
5. Complete the following table

|  |  |  |  |
| --- | --- | --- | --- |
| Particle name | Symbol | Symbolic charge | Actual mass |
| Electron |  |  |  |
| Proton |  |  |  |
| Neutron |  |  |  |

1. Complete the following table

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Atomic symbol | No. of protons | No. of electrons | No. of neutrons | Atomic number | Mass number |
| 11H |  |  |  |  |  |
| 2312Na |  |  |  |  |  |
| 3216S |  |  |  |  |  |
| 23892U |  |  |  |  |  |
| 3919K |  |  |  |  |  |
| 6429Cu |  |  |  |  |  |

1. Match the item under column A with designation items under column B.

Column A Column B

1. Atomic number A. A \_no. of p
2. Mass number B. e-
3. Atomic symbol C. p+
4. A proton charge D. Z
5. A neutron charge E. A
6. Number of neutrons F. AZX

G. n0

5. If an element contains 13 electrons, 14 neutrons then

i. What is its mass number?

ii. What its atomic number?

iii.What is the name of the element and its symbol

iv. Write its atomic symbol of the element

1. **Symbol of Elements, Formula of compounds and representation of chemical equations**
2. **What is symbol of element?**
3. **Write the chemical symbol of the following elements.**
4. **Hydrogen, nitrogen, iodine, sulphure, phosphorus, boron, carbon, uranium,**
5. **Helium, aluminum, chlorine, calcium, magnesium, zinc, neon, argon,**
6. **Sodium, copper, iron, lead, tin, silver, potassium, mercury, gold,**
7. **Write the correct names of the following symbols of elements?**
8. **B, Be, Br, Ba, Bi,**
9. **C, Ca, Ce, Cr, Cu, Cl, Cs, Cd, Co,**
10. **P, Pt, Po, Pd, Pb,**
11. **S, Si, Sr, Sc, Se, Sn, Sb,**
12. **Al. Ar, Ag, Au, As,**
13. **Mg, Hg, Ag,**
14. **Write the formula of**
15. **Monoatomic molecules such as; Helium, neon, argon, krypton, xezone,**
16. **Diatomic molecules like Hydrogen, oxygen, chlorine, iodine, bromine, fluorine,**
17. **Poly atomic molecules such as: Ozone, phosphorus, sulphur,**
18. **Poly atomic ions like, ammonium ion, hydroxide ion, hydrogen carbonate, carbonate, ion, sulphate ion, nitrite ion, phosphate ion,**
19. **Fill in the blank space by writing the formula of a compound**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Ions** | **Carbonate** | **Nitrate** | **Phosphate** | **Sulphate** | **Hydroxide** |
| **Ca2+** |  |  |  |  |  |
| **Al3+** |  |  |  |  |  |
| **Na+** |  |  |  |  |  |
| **Fe3+** |  |  |  |  |  |
| **NH4+** |  |  |  |  |  |
| **H+** |  |  |  |  |  |

1. Write the chemical formula for
2. Iron (III) Oxide iv. Silver oxide
3. Calcium Fluoride v. hydroxide
4. Magnesium Nitride vi. Ammonium nitrate
5. Write the correct formula for
6. Oxygen, oxygen molecule, oxygen triatomic
7. Nitrogen, nitrogen molecule, nitrogen dioxide, nitrite ion,
8. Sulphur, sulphur dioxide, sulphur trioxide, sulphite ion,
9. All of the followings formula/symbol is written wrongly. Rewrite the correct one
10. CO= for cobalt
11. mg= for magnesium
12. S= for sodium
13. The names of the following compounds are written wrongly. Rewrite the correct one
14. Al2O3-named as aluminum trioxide
15. FeO- name as iron oxide
16. Ca(HCO3)2 -named as calcium hydrogen bicarbonate
17. CO-named as carbon oxide
18. Convert the following word equations into their symbols/formula and balance them
19. Copper(II) oxide +sulfuric acid ⭢ copper(II) sulphate + water
20. Zinc + hydrochloric acid ⭢ zinc chloride + hydrogen
21. Calcium hydrogen carbonate ⭢ calcium oxide + carbon dioxide + water
22. Nitrogen + oxygen ⭢ nitrogen pent-oxide
23. Propane + oxygen ⭢ carbon dioxide + water +energy
24. Carbon dioxide +water+ uv ⭢ glucose + oxygen +water
25. Write the **electrical symbols** and their **functions** for
26. Cell
27. Battery
28. Light bulbs
29. Switch
30. Resistor
31. Ammeter
32. What is the formula for
33. Alkanes having carbon atoms; 1,3,5,7, 9,11
34. Alkenes contain carbon atoms 2,4,6,8,10
35. Alkynes having carbon atoms 2,3,4,5,6

**Properties, characteristics and changes of matter around us**

1. **Classification and Properties of nonliving matter**
2. **Define the followings by giving examples**
3. **Matter iv. Physical state of matter**
4. **Physical properties v. intrusive property of matter**
5. **Chemical properties vi. Extensive property**
6. **Give at least three examples of**
7. **Matter**
8. **Non-matter**
9. **Matter can be classified into two. What are they?**
10. **Write the properties of**
11. **Metals iii. Homogenous mixture**
12. **Compounds iv. Heterogeneous mixture**
13. **Write at least five major chemical properties of**
14. **Oxides**
15. **Acids**
16. **Bases**
17. **Salts**
18. **Classify the following oxides as acidic oxide, basic and neutral oxides**

**CaO, Na2O, CO2, H2O, CO, N2O3, BaO, SO3, CuO, NH4OH, P2O5, Li2O,**

1. **Write the common physical properties of**
2. **Alkanes**
3. **Alkenes**
4. **Alkynes**
5. **Homologue series**
6. **Classify each of the following as a pure compound or a mixture**

**(brass, milk, blood, rock salt, gold, sugar, silver, alcohol, honey, fats, air, dead sea, )**

1. **Give examples of compounds for;**
2. **Binary acids**
3. **Binary salts**
4. **Binary oxides**
5. **Write the formula formed when oxygen reacts with**
6. **Iron**
7. **Sodium**
8. **Hydrogen**
9. **Aluminum**
10. **Sulphure**
11. **Complete the following table of properties of solids, liquids and gases.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Properties** | **Gases** | **Liquids** | **Solids** |
| **Arrangement of particles** |  |  |  |
| **Motion of the particles** |  |  |  |
| **Compressibility** |  |  |  |
| **Volume and shape** |  |  |  |
| **Density** |  |  |  |
| **Pressure** |  |  |  |
| **Diffusion** |  |  |  |
| **Diagram** |  |  |  |

1. **Complete the properties of acids and bases**

|  |  |  |
| --- | --- | --- |
| **Properties** | **Acids** | **Bases** |
| **Litmus paper** |  |  |
| **Methyl orange** |  |  |
| **Phenolphthalein** |  |  |
| **Taste** |  |  |
| **Ions** |  |  |
| **Formation** |  |  |
| **Neutralization reaction** |  |  |
| **PHrange** |  |  |

**Changes around us**

1. **What is physical change? And give at least six examples of physical changes**
2. **What are chemical changes? Give at least six examples of chemical changes**
3. **List the agents that can bring a chemical changes?**
4. **What are the evidences for the formation a chemical changes?**
5. **List down the characteristics of**
6. **Chemical changes**
7. **Physical changes**
8. **List the harmful effects of**
9. **Physical changes**
10. **Chemical changes**
11. **Complete the following table by putting a tick(🗸) in each column with reasons**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name of activities** | **Chemical change** | **Physical change** | **Reason** |
| **Burning of magnesium ribbon** |  |  |  |
| **Fermentation of dough** |  |  |  |
| **Heating sugar** |  |  |  |
| **Change in color** |  |  |  |
| **Dissolving alcohol in water** |  |  |  |
| **Obtaining salt from seawater** |  |  |  |
| **Explosion of substance** |  |  |  |
| **Sponge of food** |  |  |  |
| **Photosynthesis** |  |  |  |
| **Melts of ice** |  |  |  |

1. **Seasonal change of earth**

**Due to the earth’s inclination, there are four seasonal changes. Indicate the occurrence of their months**

1. **Winter**
2. **Summer**
3. **Autumn**
4. **Spring**

**Separation techniques of mixtures**

|  |
| --- |
|  |

**Complete the following table**

|  |  |
| --- | --- |
| **Types of homogeneous mixture** | **Give at least three Common examples for each.** |
| **Gas in gas** |  |
| **Gas in liquid** |  |
| **Liquid in liquid** |  |
| **Solid in liquid** |  |
| **Solid in solid** |  |

1. **Consider the following separation method of mixtures.**

**(Evaporation, decantation, filtration, simple distillation, separatory funnel,)**

**Which method is used to separate the following mixtures?**

1. **To separate a soluble solid from a liquid in a solution**
2. **To separate two immiscible liquids)oil & water)**
3. **To obtain solid salt from salt solution**
4. **To separate a mixture of oil and water**
5. **To obtain pure water from muddy water**
6. **To separate a mixture of salt, sand and iron filings**
7. **Classifications and Characteristics of living matter.**
8. **List and describe the seven characteristics of living things**
9. **Fill the major characteristic of the following five kingdoms**

|  |  |  |
| --- | --- | --- |
| **Kingdom** | **Characteristics (at least four points)** | **Examples** |
| **Kingdom of animalia** |  |  |
| **Kingdom of plantae** |  |  |
| **Kngdom of Protista** |  |  |
| **Kingdom of monera (bacteria)** |  |  |
| **Kingdom of fungi** |  |  |

1. **Write the characteristics of the following plant kingdom**

|  |  |  |
| --- | --- | --- |
| **Plant kingdom** | **Characteristics** | **Examples** |
| **Bryophyte** |  |  |
| **Pteridophyta** |  |  |
| **Gymnosperms (confers plant)** |  |  |
| **Angiosperms(flowering plant)** |  |  |

1. **Fill in blank spaces for groups of Protista**

|  |  |  |
| --- | --- | --- |
| **Protista** | **Characteristics** | **Examples** |
| **Protozoans** |  |  |
| **Protophyta** |  |  |

1. **Fill the characteristics in the spaces provide in the table**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Kingdom** | **Eukaryotic or prokaryotic** | **Uni or multi Cellular** | **Non vascular or vascular** | **Reproduced by** | **No root, stem , leaves** |
| **Fungi** |  |  |  |  |  |
| **Monera** |  |  |  |  |  |
| **Protista** |  |  |  |  |  |
| **Gymnosperm** |  |  |  |  |  |
| **Angiosperm** |  |  |  |  |  |

* **Structure of substances**

**Integrating units 4, 6, of grade 7 with unit 2 of grade 8**

**A. Atomic structure or structure of substance**

1. **Define the following key terms/phrases**
2. **Atom**
3. **Electron shell**
4. **Nucleus of an atom**
5. **Subatomic particles**
6. **How is the structure of an atom described?**
7. **What are the particles found inside and outside the nucleus of an atom?**
8. **Draw the structure representation of an atom using its subatomic particles**
9. **Why the nucleus of an atom is positively charged?**
10. **Complete the table about the nature and location of subatomic particles**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Particle name** | **Symbol** | **Relative charge** | **Relative mass** | **Location** |
| **Electron** |  |  |  |  |
| **Proton** |  |  |  |  |
| **Neutron** |  |  |  |  |

1. **Draw the representation of the following atoms**
2. **Hydrogen**
3. **Helium**
4. **Carbon**
5. **Define the terms Molecule and compound**
6. **What is meant by**
7. **Molecules of elements**
8. **Molecules of compounds**
9. **Use a particle model diagram to represent**
10. **Oxygen molecule**
11. **Water molecule**
12. **Give at least four examples for the followings**
13. **Monoatomic molecules**
14. **Diatomic molecules**
15. **Polyatomic molecules**
16. **Why is the symbol and formula of monoatomic elements the same?**

**B. Animal cell and plant cell structure**

1. **What is a cell in an organism?**
2. **List the major functions of cell?**
3. **What is meant by structure of a cell?**
4. **List the four cell structure where all cells shared in common**
5. **Complete the following table about the types of organelles within a cell**

|  |  |  |
| --- | --- | --- |
| **Name of parts** | **Description** | **function** |
| **Cell wall** |  |  |
| **Cell membrane** |  |  |
| **Cytoplasm** |  |  |
| **Mitochondrion** |  |  |
| **Chloroplast** |  |  |
| **Ribosome** |  |  |

1. **Draw an animal cell and locate each part**
2. **Describe the nature of cell shape and size for**
3. **Plant cells**
4. **Animal cells**
5. **Microorganism(bacteria)**
6. **Explain the followings and give at least four examples for each**
7. **Unicellular organisms**
8. **Multicellular organisms**
9. **Give five examples for**
10. **Plant cells**
11. **Human being cells**
12. **Animal cells**
13. **What are organs? What are the organs found**
14. **In plants**
15. **In animals**
16. **What are the organ systems**
17. **In plants**
18. **In animals**
19. **Draw the structure of the following human body systems and label each part**
20. **Digestive system**
21. **Circulatory system**
22. **Female reproductive system**
23. **Respiratory system**

**C. Body Structure of insect**

1. **Do insects are vertebrates or invertebrates?**
2. **What is the class order of insects?**
3. **Give five insects found**
4. **In domestic**
5. **In forest areas**
6. **Complete the following table about the characteristics of specimen**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Specimen** | **No. of body parts** | **No. of limbs** | **Wings** | **Antenna** |  |
| **Grasshopper** |  |  |  |  |  |
| **Butterfly** |  |  |  |  |  |

**D. Structure of the Earth**

1. **What is the shape of the Earth?**
2. **Draw the external structure of the earth and locate the types of layers with altitude and range of temperature**
3. **Draw a pie graph for the composition of gases found in the atmosphere**
4. **Draw the internal structure of the earth and show or indicate each part**
5. **Complete the following table**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Layer of earth** | **Made of or consist of** | **Distance in km** | **Size** | **State of matter** |
| **The crust** |  |  |  |  |
| **Continental crust** |  |  |  |  |
| **Oceanic crust** |  |  |  |  |
| **The mantel** |  |  |  |  |
| **The upper mantel** |  |  |  |  |
| **The lower mantel** |  |  |  |  |
| **The core** |  |  |  |  |
| **The outer core** |  |  |  |  |
| **The inner core** |  |  |  |  |

1. **Explain how an Earth’s quack is formed?**

* **Systems in our surrounding**

1. **Earth’s Systems:**
2. **What is meant by earth’s system?**
3. **List the components of the earth system?**
4. **Draw the earth systems interactions and indicate each part**
5. **Complete the following table**

|  |  |  |  |
| --- | --- | --- | --- |
| **Earth spheres** | **Composition** | **States** | **Get energy** |
| **Geosphere** |  |  |  |
| **Hydrosphere** |  |  |  |
| **Biosphere** |  |  |  |
| **Atmosphere** |  |  |  |

1. **From the parts of earth spheres, which one**
2. **Is exposed to erosion and volcanic eruption?**
3. **Contains essential elements for life?**
4. **Holds all the three states of matter?**
5. **Contains all living things?**
6. **Human body systems**
7. **What are integumentary systems?**
8. **Complete the functions of integumentary components.**

|  |  |
| --- | --- |
| **Parts** | **Functions** |
| **Skin** |  |
| **Hair** |  |
| **Nail** |  |
| **Glands** |  |

1. **Complete the function of the layers of human skin**

|  |  |
| --- | --- |
| **Skin layer** | **Functions** |
| **Upper layer** |  |
| **Middle layer** |  |
| **Lower layer** |  |

1. **Complete the layers of hair shaft**

|  |  |
| --- | --- |
| **Layers of hair** | **Functions** |
| **Medulla** |  |
| **Cortex** |  |
| **Cuticle** |  |

1. **Complete the description of human nail**

|  |  |  |
| --- | --- | --- |
| **Human nail** | **Descriptions** | |
| **The nail plate** |  |
| **The nail bed** |  |
| **The cuticle** |  |
| **The nail folds** |  |
| **The lunula** |  |
| **The martrix** |  |

1. **Draw the human nail structure and indicate each part**

**Muscular system**

1. **What are muscular systems?**
2. **What are the functions of muscular system?**
3. **List the properties of muscle cell and explain them**
4. **Complete the descriptions of components of muscular structure of human**

|  |  |  |
| --- | --- | --- |
| **Components of muscular system** | **Descriptions** | **Examples** |
| **Skeletal muscles** |  |  |
| **Cardiac muscles** |  |  |
| **Smooth(non-striated) muscles** |  |  |

**Skeletal system**

1. **Distinguish the major structural components of human skeletal system?**
2. **Explain the main functions of human skeletal system?**
3. **Complete the following table**

|  |  |  |
| --- | --- | --- |
| **Types of bone** | **Description** | **Examples** |
| **Long bones** |  |  |
| **Short bones** |  |  |
| **Flat bones** |  |  |
| **Irregular bones** |  |  |

1. **Based on their positions, Bones can also divide into two parts. What are these?**
2. **Complete the following table**

|  |  |  |
| --- | --- | --- |
| **Axial skeleton** | **Descriptions** | **Examples** |
| **Skull** |  |  |
| **Hyoid** |  |  |
| **Vertebral column** |  |  |
| **Thoracic cage** |  |  |

1. **What are the main functions of appendicular skeleton?**
2. **Complete the following table**

|  |  |  |
| --- | --- | --- |
| **Appendicular skeleton** | **Descriptions** | **Position and examples** |
| **Shoulder bone** |  |  |
| **Limbs or appendage** |  |  |
| **Hip bones** |  |  |
| **Hind limbs** |  |  |

1. **Explain the functions of**
2. **Cartilage**
3. **Tendon**
4. **Ligament**
5. **Joints**
6. **Give examples for**
7. **Immovable joints**
8. **Movable joints**
9. **Give at least three examples for**
10. **Hinge joint**
11. **Ball and socket joint**

**Ecosystem**

1. **What is meant by an ecosystem?**
2. **What is an environment? What it composes of?**
3. **What are the components of ecosystem? Define them and give examples for each**
4. **What are the nonliving things that affect the ecosystem?**
5. **What will happen if the ecosystem is disorder?**
6. **What is the important of biotic and abiotic factor for ecosystems?**
7. **Explain how ecosystems are affected by nonliving things?**
8. **Nutrients cycles in our surrounding**
9. **What is a cycle?**
10. **What is meant by nutrient cycle?**
11. **Explain how each of the following cycle operate**
12. **Carbon cycle**
13. **Hydrogen cycle**
14. **Water cycle**
15. **Nitrogen cycle**
16. **Complete the following table**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Cycle type** | **Definition** | **Source formation** | **Major Steps** | **Movement diagram** |
| **Carbon cycle** | **.** |  |  |  |
| **Nitrogen cycle** |  |  |  |  |
| **Hydrogen cycle** |  |  |  |  |
| **Water cycle** |  |  |  |  |
| **Oxygen cycle** |  |  |  |  |

1. **List the main process in**
2. **Water cycle**
3. **Nitrogen cycle**
4. **Oxygen cycle**
5. **Which cycle is the most important**
6. **Throughout the biosphere?**
7. **For the growth of plants?**
8. **For photosynthesis process?**
9. **What are the main elements required for the growth of plants?**
10. **Rearrange the steps process for**
11. **Water process (condensation, precipitation, evaporation, transpiration,)**
12. **Nitrogen process( De-nitrification, nitrogen fixation, nitrification, ammonification, assimilation)**
13. **List the main important of nutrient cycle?**

* **Review exercises for grade 8 on** **chapter7 of grade** **7**

1. **Basic concepts of motion**
2. **What is motion of an object? Give different forms of motion of a body.**
3. **A body is moving with respect to the surface of the earth. Why?**
4. **A body sits on a chair,**
5. **is it at rest relative to the Sun?**
6. **Is it in motion relative to the Earth?**
7. **If a passenger is in aero-plane, then is he in motion or at rest relative to the ground?**
8. **Complete the following table regarding types of motions**

|  |  |  |
| --- | --- | --- |
| **Type of motion** | **Descriptions** | **Examples** |
| **Rectilinear motion** |  |  |
| **Curvilinear motion** |  |  |
| **Rotary motion** |  |  |
| **Vibratory motion** |  |  |

1. **List the measurable physical quantities for the motion of a body?**
2. **Justify the type of motion each of the following**
3. **A car is moving on a straight level road**
4. **Motion of a car around a circular square**
5. **A falling ball from a certain height**
6. **The pointer of the pointer or a watch**
7. **Motion of a wheel of a car**
8. **Motion of satellites around the earth**
9. **Motion of a body about an axis**
10. **Motion of a pendulum of a clock**
11. **Motion of objects suspended on a spring**
12. **Match the descriptions under column B with the types of motions under column A( note that there may be two answers)**

**Column A Column B**

**1. Circular motion A. a boat tossing up and down on a river**

**2. Curvilinear motion B. the motion of a minute hand of a wrist watches**

**3. Vibratory motion C. the movement of the Earth on its axis**

**4. Oscillatory motion D. motion of a basketball into the basket**

**5. Rotary motion E. the motion of the moon around the Earth**

**F. the motion of the neck head at 360 degrees**

**9. Differentiates the meaning of the following**

**i. Circular and curvilinear motion**

**ii. Rotary and rotational motion**

1. **Force, Gravitational force, Effects of force and measuring force**
2. **Define the following key words.**
3. **Force**
4. **Gravity**
5. **Gravitational force**
6. **Contact force**
7. **Write three examples for**
8. **Noncontact forces**
9. **Contact forces**
10. **What are the effects of a force when a force is applied on an object?**
11. **According to the definition of work in physics, in which of the following activities a work has done?**
12. **A boy pushes the wall of the classroom**
13. **A girl who walks holding a bag for two hours**
14. **A crane lifts 2000kg mass at constant velocity**
15. **A lecturer sits on a chair and talks for 2-hours for his audience.**
16. **A boy pushes a block of wood on horizontal surface as shown in figure.**

**What are the four forces acting on the block of wood?**

1. **What is the quantity that affects**
2. **Weight of a body**
3. **Conductivity of material**
4. **Give some examples of the effects of force acting on your daily life**
5. **What is Newton meter? Name the parts of a spring balance?**
6. **What is the instrument used to measure a force?**
7. **All of the followings are stated wrongly. Re-write the correct idea**
8. **Gravity is a push of an object**
9. **All bodies fall to earth with the same gravity.**
10. **The value of gravity is the same throughout the surface of Earth**
11. **Weight is the pulling of objects by the earth**
12. **The weight of a given body is the same everywhere.**
13. **Force is the mass of a body**
14. **A pull or push of an object is gravitational force**
15. **What make the value of gravity has a slight change from equator to the poles of the Earth?**
16. **The pulling of objects by the earth towards its center is----------------**
17. **Energy, Energy sources, forms and Conversion of energy**
18. **Define the following terms or phrases**
19. **Energy**
20. **Matter**
21. **Potential energy**
22. **Kinetic energy**
23. **What is the relationship between energy and matter? Give two examples**
24. **List all forms of energy**
25. **Is energy created, destroyed or transformed?**
26. **Generally, there two types of energies. What are these? Give some examples?**
27. **List all sources of energy**
28. **Complete the following table.**

|  |  |
| --- | --- |
| **Form of energy** | **Description** |
| **Sound energy** |  |
| **Light energy** |  |
| **Elastic energy** |  |
| **Heat energy** |  |
| **Chemical energy** |  |
| **Nuclear energy** |  |

1. **Complete the table**

|  |  |  |
| --- | --- | --- |
| **Original energy** | **Transducer** | **Energy transformed** |
| **Electrical energy** | **?** | **Sound energy** |
| **Mechanical energy** | **?** | **Electrical energy** |
| **Chemical energy** | **?** | **Mechanical energy** |
| **Chemical energy** | **?** | **Electrical energy** |

1. **Fill the black spaces with correct answers**
   1. **A motor converts electrical energy into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
   2. **A battery converts chemical energy into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
   3. **A generator converts mechanical energy into \_\_\_\_\_\_\_\_\_\_\_\_\_\_**
   4. **A microphone converts electrical energy into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
   5. **A light bulb emits energy in the form of \_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_**
2. **Match the item under column A with that of column B**

**Column A Column B**

1. **Light energy A. energy coming from vibrating source**
2. **Elastic energy B. energy spreading out from a hot object**
3. **Heat energy C. energy of an object that has been lifted**
4. **Sound energy D. energy of a stretched object**
5. **Gravitational potential energy E. energy spreading out from a bright object**

**F. energy of a moving object**

**11. Classify the followings source of energy as renewable or non-renewable resources**

**Petroleum, solar, geo-thermal, coal, nuclear, biomass, ocean energy, natural gas,**

**hydrocarbon gas liquids, hydropower, wind,**

**12. Complete the following table with correct answers**

|  |  |  |
| --- | --- | --- |
| **Factor** | **Renewable resource** | **Nonrenewable resource** |
| **Depletion** |  |  |
| **Environmental impact** |  |  |
| **Cost** |  |  |

1. **What is energy conservation?**
2. **List the strategies of conservation of energy?**
3. **What is the 3R’s rule to conserve energy? Define them?**
4. **List the steps used for saving energy**
5. **At home**
6. **In the office**
7. **Write the major factors of environmental degradation?**
8. **What are the major effects of environmental degradation?**
9. **List the solutions to the resource depletion problem?**
10. **Match the causes for resource depletion under column A with solutions under column B**

**Column A Column B**

1. **Waste A. education**
2. **Farming B. stop deforestation**
3. **Overpopulation C. reduce wastes**
4. **Erosion D. avoid plastics**
5. **Pollution E. recycle and reused**

**F. reduction in consumption**

**21. List all the cause of environmental degradation**

**22. Write the natural factors for the environmental degradation?**

**23. List all the human activities that causes the environmental degradation**

**24. What are the effects of fire blowing in our environment?**

* **Revision exercise on chapter 6 of grade 7**

**Instruction:** Attempt the following essay type questions on a separate answer sheets. Hints: you may refer to text books, or other reference books.

1. Justify the shape of the earth based on
2. Local assumptions
3. Global assumptions
4. Currently, list down the evidences that support the real shape of the earth
5. Complete the following dimension of the earth and show by drawing the earth shape

|  |  |
| --- | --- |
| Average distance from sun |  |
| Equatorial diameter |  |
| Earth’s radius |  |
| Polar diameter |  |
| Equatorial circumference |  |
| Polar circumference |  |
| The orbital of earth |  |
| Rotational period of earth |  |

1. What is astronomical unit? Is it basic unit or derived unit?
2. Draw the vertical structure (the outer zone) of the Earth’s atmosphere and locate their range of distance in km.
3. What is the abundance of the following gases found in the Erath’s atmosphere?
4. Oxygen
5. Carbon dioxide
6. Argon
7. Nitrogen
8. Complete the characteristics of the following layers of atmospheres

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Atmosphere | Chemical Composition | Altitude in km | Temperature | Reason for the temperature increase |
| Troposphere |  |  |  |  |
| Exosphere |  |  |  |  |
| Stratosphere |  |  |  |  |
| Mesosphere |  |  |  |  |
| Thermosphere |  |  |  |  |

1. What is the major use of ozone layer? In which layer of atmosphere is located?
2. Reason out for the followings ideas
3. In troposphere, temperature decreases
4. In stratosphere, temperature increases
5. In mesosphere temperature decreases
6. In thermosphere, temperature increases
7. What are the internal structures of the earth? Draw a diagram and show each part?
8. Complete the characteristics of the crust, mantel and core of the earth, respectively

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Inner zone of earth | Chemical composition | Thickness, km | Physical state of matter | Temperature( cold or hot) |
| Crust |  |  |  |  |
| Oceanic crust |  |  |  |  |
| Continental crust |  |  |  |  |
| Mantel |  |  |  |  |
| Upper mantel |  |  |  |  |
| Lower mantel |  |  |  |  |
| The core |  |  |  |  |
| Outer core |  |  |  |  |
| Inner core |  |  |  |  |

1. Define the following terms
2. Lithosphere iv. perihelion
3. Asthenosphere v. meridian
4. Aphelion vi. Axis
5. Describe the movements of the earth in terms of
6. Rotation of the Earth
7. Revolution of the Earth
8. List down all the effects of motion of the Earth
9. Write the basic differences between rotation and revolution of the Earth?
10. Why does the earth have four seasons? Name the seasons with their months occurrence
11. How many hours, minutes and seconds does the earth require to perform one complete rotation?
12. Define the following key terms
13. Earth system
14. Nutrient cycle
15. GPS
16. Laser radar
17. Complete the following components of the earth systems interactions

|  |  |
| --- | --- |
| Earths spheres | Chemical composition |
| Geosphere(Lithosphere) |  |
| Atmosphere |  |
| Hydrosphere |  |
| Biosphere |  |

1. Define the following key terms
2. Precipitation
3. Transpiration
4. Nitrification
5. Respiration
6. Explain the necessary steps for the following cycles and write their major important?
7. Carbon cycle iv. Oxygen cycle
8. Nitrogen cycle v. water cycle
9. Hydrogen vi.
10. What are the most abundance elements found (write its name and chemical symbol)
11. In the sun
12. In the core of the earth
13. In the mantel layer
14. In the atmosphere
15. In human body
16. What is meant by
17. “Big Bang” theory
18. Heliocentric theory of the universe?
19. What are the scientific works of the following scientists?
20. Galileo Galilei
21. Edmund Halley comet
22. Nicolas Copernicus
23. Explain how solar system is formed?
24. List the family of the solar system and show their position around the sun.
25. Classify the 8-planets as
26. Terrestrial (inner) plants
27. Jovian (outer) planet
28. Write their own major characteristics?
29. Complete the following table accordingly

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Name of planet | Distance from the sun | Temperature, 0C | No. of moons | size | Shape, color, | Period of rotation | Period of revolution |
| Mercury |  |  |  |  |  |  |  |
| Venus |  |  |  |  |  |  |  |
| Earth |  |  |  |  |  |  |  |
| Mars |  |  |  |  |  |  |  |
| Jupiter |  |  |  |  |  |  |  |
| Saturn |  |  |  |  |  |  |  |
| Uranus |  |  |  |  |  |  |  |
| Neptune |  |  |  |  |  |  |  |

1. Write the characteristics of
2. Asteroids
3. Comets
4. Meteors
5. List the points that makes the earth suitable for life
6. Explain the unique characteristics of the Earth?
7. What are the practical applications of artificial satellites?
8. What is the difference between the motion of satellites and planets?
9. Which planet
10. is the smallest, the largest, respectively
11. has no moon; has one moon,
12. rotates from east to west
13. Write five characteristics of the sun?

* **Integrating chapter 6 of grade** 7 **with chapter7 of grade 8**

**Instruction:** Deliver short and brief explanation for the following chapter review exercises.

1. Define the followings
2. Solar system v. Sound
3. Light vi. Heat
4. Incident ray vii. Electric current
5. Reflection viii. Magnetism
6. Write the **difference** between;
7. Giants and terrestrial planets
8. Asteroid and comets
9. Reflection and refraction
10. Light and sound
11. Real image and virtual image
12. Write at least four **properties** or characteristics for;
13. Light
14. Sound
15. Magnet
16. Heat
17. Image produced by a plane mirror
18. **Give scientific reasons** for the following questions.
19. Why do outer planets rotate faster?
20. Why is unable to see the moon during the day time?
21. Why is the moon considered as a satellite?
22. Why are the inner planets hotter than the outers?
23. What are the factors for which the Earth is suitable for life?
24. How is heat transferred?
25. Why is Pluto disagreed as one family of planets?
26. What does the solar family consist of?
27. Which phenomenon is responsible for the creation of rainbow?
28. In which medium that a sound propagate
29. Maximum
30. Minimum
31. Name the general mode of heat transfer in solids, liquids and gases?
32. Write the components of electric circuit with their functions?
33. State the two laws of reflection?
34. For the followings, write their uses or important?
35. Light
36. Sound
37. Artificial satellite
38. A bar magnet
39. A compass needle
40. Complete the following table

|  |  |  |
| --- | --- | --- |
| Materials | Definition | Examples |
| Opaque |  |  |
| Translucent |  |  |
| Transparent |  |  |

1. What is sound pollution? List the measures to be taken?
2. What is an echo? List the applications of echo?
3. Complete the following table accordingly

|  |  |  |
| --- | --- | --- |
| Substance | Description | Examples |
| Conductors |  |  |
| Insulators |  |  |
| Semi-conductors |  |  |

1. Complete the following

|  |  |  |
| --- | --- | --- |
| Electric Circuit | Circuit symbol | Description |
| Cell |  |  |
| Light bulb |  |  |
| Motor |  |  |
| Switch |  |  |
| Ammeter |  |  |
| Resistor |  |  |
| Fuse |  |  |

1. Put iron filings on a piece of paper. And bring a bar magnet near to the paper.
2. What do you observe?
3. Draw magnetic field of lines pointing

-Inside the magnet

-Outside the magnet

iii. In which parts of a magnet that magnetic field is strongest? Weakest?

1. What is a magnetic force?
2. For the following bar magnets, what do x and y represent?

x S s y z

1. Does our Earth planet have a magnetic property? How? Explain and draw its magnetic field lines
2. What does Bell experiment show?
3. What are the bands of colors produced by dispersion of white light in a prism?

List them in order of bending size

1. Why does light change its direction as it travels from air to water?
2. Put a ruler on beaker partially filled with water.

The ruler looks as if it is broken at the point where it enters

the water as shown in the figure. What does this show?

1. What is the factor that affect;
2. The need for vision
3. The hearing of sound
4. The heat flow
5. The direction of light
6. The fertility of soil
7. Explain how the followings are produced or created?
8. Sound
9. Electricity
10. Earth quack

* **Diseases from human body systems (grade 8 text)**

1. **Define what is disease?**
2. **What are the skin diseases?**
3. **List the causes of infections of diseases?**
4. **Complete the following table**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Skin diseases** | **Location** | **symptoms** | **Caused by** | **prevention** |
| **Acne** |  |  |  |  |
| **Rosacea** |  |  |  |  |
| **Eczema** |  |  |  |  |
| **Hives** |  |  |  |  |
| **Warts** |  |  |  |  |
| **Cold sore** |  |  |  |  |
| **Carbuncle** |  |  |  |  |
| **Blister** |  |  |  |  |
| **Actinic keratosis** |  |  |  |  |
| **Latex allergy** |  |  |  |  |
| **Chickenpox** |  |  |  |  |

1. **Define the following and give examples**
2. **Muscular dystrophy iii. Muscle fibers**
3. **Muscle strains iv. Muscle fatigue**
4. **List the human body parts where muscles become disorder?**
5. **List the effects of muscle disorder**
6. **Match the skeletal diseases under column A with the description in column B**

**Column A Column B**

1. **Fracture A. cancer of the body’s blood forming tissues**
2. **Leukemia B. partial or complete break in bones**
3. **Osteoarthritis C. involved in degradation of joints**
4. **Osteopenia D. are deformans and osteomalacia; bones loss**
5. **Osteoporosis E. bones become thin and lose their strength**
6. **Complete the following table**

|  |  |  |  |
| --- | --- | --- | --- |
| **Disease of digestive system** | **Causes** | **Symptoms** | **Prevention** |
| **Constipations** |  |  |  |
| **Diarrhea** |  |  |  |
| **Hemorrhoids** |  |  |  |
| **Gastritis** |  |  |  |
| **Peptic ulcer disease** |  |  |  |

1. **List the respiratory diseases**
2. **Complete the table**

|  |  |  |  |
| --- | --- | --- | --- |
| **Respiratory diseases** | **Main causes** | **Affected body parts** | **Prevention** |
| **Asthma** |  |  |  |
| **Sinusitis** |  |  |  |
| **Influenza** |  |  |  |
| **Chronic obstructive pulmonary disease** |  |  |  |
| **Bronchitis** |  |  |  |

1. **Complete the following table**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sexually transmitted diseases** | **Caused by** | **Affected areas of body** | **symptoms** | **preventions** |
| **HIV/AIDS** |  |  |  |  |
| **Gonorrhea** |  |  |  |  |
| **Chancroids** |  |  |  |  |
| **Syphilis** |  |  |  |  |

**Check points**

**Choose the correct answers from the given alternatives. Justify your answers.**

1. **Which type of disease involves in the degradation of joints?**
2. **Osteoarthritis c. Osteoporosis**
3. **Leukemia d. Osteopenia**
4. **An injury to a tendon the fibrous tissue that connects muscle to bone is------**
5. **Muscle strains c. muscle elasticity**
6. **Muscle dystrophy d. muscle contractility**
7. **All of the followings are usually transmitted diseases except**
8. **AIDS b. Syphilis c. Gonorrhea d. Chickenpox**
9. **Abebe’s father used to suffer from blood clotting problem. Abebe also suffers from the same case. What is the most cause of their problem?**
10. **Leukemia c. Hemophilia**
11. **Varicose vein d. Elephantiasis**
12. **Which of the following disease is caused by fungus?**
13. **Small box c. Mumps**
14. **Ring worm d. Tuberculosis**
15. **From the following transmitted disease one is not caused by bacteria?**
16. **AIDS b. Syphilis c. Chancroid d. Gonorrhea**
17. **Peristalsis is mainly caused by-------**
18. **Smooth muscle c. Skeletal muscle**
19. **Cardiac muscle d. none**
20. **Which one of the following cannot be caused by obesity?**
21. **Heart disease c. Diabetes**
22. **High blood pressure d. none**
23. **Which one of the following can result from smoking cigarette?**
24. **Lung cancer c. Chronic bronchitis**
25. **Emphysema d. Giving birth to smaller babies**
26. **Which of the following disease that the bones become fragile and prone to fracture?**
27. **Osteoporosis c. Leukemia**
28. **Osteoarthritis d. Osteeopenia**
29. **All of the followings will affect the human circulation system except?**
30. **Blood pressure c. hypertension**
31. **Strokes d. smoking cigarette**
32. **When does a stroke occur?**
33. **when blood stops flowing to part of the heart**
34. **when the blood supply to part of brain is interrupted**
35. **when the heart muscle is unable to pump enough blood**
36. **when the heart muscle is injured**
37. **If a person has lack of fiber food and do not drink enough water, then he is exposed to which of the following disease?**
38. **Diarrhea b. Gastritis c. Constipations d. Hemorrhoids**
39. **Which of the following disease attacks the respiratory system of nose, throat and lungs?**
40. **Asthma b. Influenza c. Sinusitis d. COVID-19**

* **Diseases due to environmental pollution (Subunits 5.2,3 and 7.3 of grade 8 text)**

1. **What is environmental pollution? What are its effects on human health?**
2. **List those pollutant substances?**
3. **List those**
4. **Water borne diseases created by human activities?**
5. **Air borne diseases that affect our health?**
6. **What are the effects of sound pollution on human health?**
7. **Complete the following table, the first column has done for you. Do the rest**

|  |  |  |  |
| --- | --- | --- | --- |
| **Pollution** | **Factors, causes type** | **Effects on health** | **Preventions** |
| **Water** | **-toxic chemicals(Hg, Pb)**  **-agricultural wastes**  **-domestic wastes(urine, faces, viruses and bacteria)** | **-Damage liver, kidney, nervous system**  **-stored on fats and body tissue**  **-cholera, typhoid,** | **-cover vegetation**  **-terracing**  **-formulating water policy** |
| **Air** |  |  |  |
| **Soil** |  |  |  |
| **Sound** |  |  |  |

1. **What is environmental degradation? Write its effects on human health?**

* **Scientific theories and Laws on GS text of Grade 7 and 8**

1. **Scientific theory**
2. **Describe the Particulate theory of matter?**
3. **List the postulates of particles of theory?**
4. **What is cell theory? Who proposed it? Write the four unified cell theories?**
5. **Identify the difference between discreteness theory and continuous theory**
6. **What is meant by “a Vital force theory”? Who disproved it?**
7. **Explain the so called “Big Bang” theory?**
8. **Elaborate the Heliocentric theory of the universe?**
9. **Scientific laws**
10. **State the following laws with examples, illustrations, diagrams,**
11. **The law of conservation of mass**
12. **The law of conservation of energy**
13. **The law of gravitational force of Earth**
14. **The law of reflection of light**
15. **The law of magnetism**
16. **The law of electric charges**
17. **Peoples of discoverer:**

**Match the scientists under column A with their contribution works under column B.**

**Column A Column B**

1. **Dr. Akililu Lemma A. discovered the elements polonium and radium**
2. **Isaac Newton B. develop the special relativity theory**
3. **Prof. of Gebisa Ejeta C. discovered the generation of electricity from magnetism**
4. **Michael Faraday D. discovered the treatment to schistosomiasis, snail**
5. **Dr. Tewolde Berhan G/Egziaber E. discovered the laws of motion and law of gravity**
6. **Albert Einstein F. A plant breeder, geneticist**
7. **Robert Hooke G. worked in biodiversity and genetic resources**
8. **Galileo Galilei H. discovered moons of Jupiter and stars**
9. **Anton van Leeuwenhoek I. proposed that planets revolve around the sun**
10. **Nicolaus Copernicus J. proposed the unified cell theory**
11. **Matthias Schleiden K. designed a scientific system of naming organism.**
12. **Carl Linnaeus L. discovered cells in cork**

* **Concepts on listing order, path way,**

**Attempt the following Questions based on writing the Steps, correct order (descending or ascending) and explain on what base it is done?**

1. **Write the correct order in which light passes through a microscope**
2. **Write the steps of the scientific method**
3. **Write the alimentary canal or components of gut**
4. **Write the correct order of the incoming air pass to the breathing structures of human**
5. **Write the correct path way of**
6. **oxygenated blood flow**
7. **deoxygenated blood flow**
8. **Write the levels of biological organization in the correct order from simplest to complex level**
9. **Write the sequence of scientific category of organisms from general to specific**
10. **In the food chain, write the specific trophic level that each organism may occupy**
11. **Write the correct position of planets in solar system in order of increasing distance from the sun**
12. **Write the path way that human sperm flow after entering the vagina**
13. **Write the correct order from upper to lower layer of the atmosphere**
14. **List in the order of appearance of the colors of the visible spectrum. (VIB\_GYOR)**

**Good study;** **enjoy it!!**