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 Science - I, II

Duration :- 2 hours

Name :- ..... Index No :-

Grade 9

**Part I**

• **Underline the most correct answer**

01) An example for micro-organisms is

- i. Bacteria      ii. Fungi      iii. Protozoa      iv. All the above

02) The parasitic protozoa that infect human red blood cell is

- i. Amoeba      ii. Euglena      iii. Paramecium      iv. Plasmodium

03) A = Bacteria – ability to spread wide range of environment

B = fungi – growth occurs on wet and damp substrates

C = Virus – having cellular organization

D = Algae - having unicellular or filament or thallus shape body structures

Out of the above descriptions, the **false** statement is

- i. A      ii. B      iii. C      iv. D

04) A free living Nitrogen fixing bacteria, directly added to the cultivation lands is

- i. Rhizobium      ii. Azotobacter      iii. Acetobacter      iv. Lactobacillus

05) The vaccine is **not** made from killed microbes

- i. Cholera      ii. Influenza      iii. Typhoid      iv. Diphtheria

06) The group of micro-organism that cause to Leishmaniasis is

- i. Virus      ii. Protozoa      iii. Fungi      iv. Bacteria

07) The correct statement about human eye is

- i. The eye fixed to the orbit by six eye muscles  
 ii. Light move into the eye through the iris  
 iii. Sclerotic layer is nourishing the eye  
 iv. The light sensitive rods and cone cells are located in retina

08) The part of the eye that refract light rays on to the retina is

- i. Eye lens      ii. Aqueous humor      iii. Vitreous humor      iv. All the above

09) The structure that understanding, formed inverted image on retina as upright one is

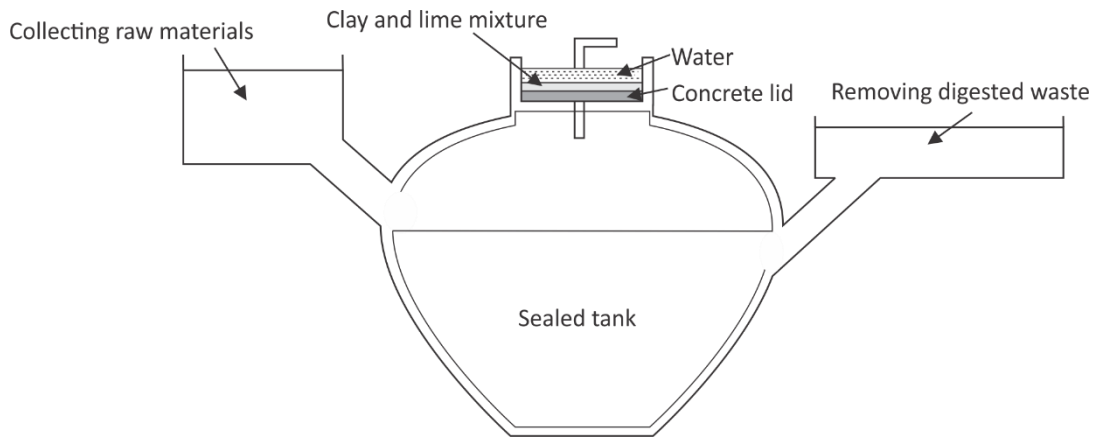
- i. Fovea      ii. Brain      iii. Optical area of the brain      iv. Optic nerve

- 10) The **false** statement about long sight is
- Inability to reduce curvature of the eye lens
  - Shortening of the eye ball
  - In this defect, the image formed behind the retina
  - This defect can be corrected by using a convex meniscus lens.
- 11) Animal that has binocular vision is
- Man
  - Cattle
  - Dog
  - All the above
- 12) The first part of the ear that gain sound related sensations is
- Tympanic membrane
  - Ossicles
  - Eustachian tube
  - External auditory canal
- 13) Given below are few statements about the structure and function of the human ear.
- Ossicles are vibrating and transmitting sound to the inner ear.
  - Semicircular canal helps to maintain body balance
  - The limits of hearing of ear is 20 Hz to 20000 Hz
- The correct statement / statements are
- A and B
  - B and C
  - A and C
  - All the above
- 14) The symbol of element that base on its Latin name is
- S
  - Al
  - Na
  - Zn
- 15) Under normal conditions, the element oxygen exists as
- As atom
  - A molecule
  - In compounds
  - Liquid state
- 16) The false statement about an atom is
- The central core is positively charged and is called the nucleus.
  - All space of atom is considering to decide its mass
  - An atom is made by sub atomic particles
  - Number of protons available in nucleus of different atoms are differ to each other
- 17) The compound not made by elements carbon and hydrogen is
- Hexane
  - Benzene
  - Ethen
  - Ethanol
- 18) The technic that use to separate components from crude oil is
- Vapourization
  - Fractional distillation
  - Steam distillation
  - Crystallization
- 19) Out of given mixtures, a homogeneous mixture is
- Sea water
  - Muddy water
  - Concrete
  - Ice cream
- 20) The instrument and SI unit of measuring force are respectively
- Spring balance and kg
  - Newton balance and N
  - Triple beam balance and g
  - Pan balance and kg

## Part II

The first question is compulsory and write another 3 questions.

(01) (A) The given sketch was drawn by group of student after investigating a biogas plant of a farm.



- i. What is the main component of biogas?
- ii. Write 2 materials use to produce biogas?
- iii. Write the name of micro-organisms that take part to produce biogas and write its specialty.
- iv. Why does fermentation tank has sealed?
- v. Has a paste of clay and lime mixture above the concrete lid and its filled with water. Write 2 advantages of it.

(B) If the statement is correct put (✓) and incorrect put (×).

- i. Growth and reproduction rates of micro-organisms higher than the other organism ( )
- ii. All algae that floats on water surface is considered as plankton ( )
- iii. Fungi Alternaria uses to control weed salvinia ( )
- iv. Bacteria, virus and fungi can be controlled by antibiotics ( )
- v. Bacteria available in curd or yoghurt culture converts lactose in to lactic acid ( )
- vi. Coconut fibres attached to each other by pectin ( )
- vii. Vectors are the animals that carry pathogens from one person to person ( )
- viii. Sun fly is considered as vector of Leishmaniasis ( )
- ix. Powdery mildew is a disease caused by a fungus. The leaves, stem, flowers and fruits of the plant are affected by this disease appearing white or gray colour powdery material ( )
- x. A cataract is a cloudiness or opacity in normally transparent crystalline lens of the eye ( )

(C) Complete the given table

| Sub atomic particle | Charge | Mass | Location in atom |
|---------------------|--------|------|------------------|
| Proton              |        |      |                  |
|                     | 0      | 1    |                  |
|                     | -1     |      |                  |

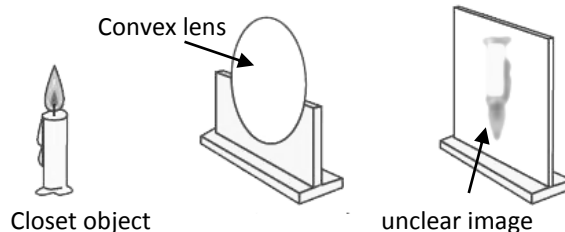
(02) (A)

1. Write the part of the eye that perform given functions
  - a. Providing blood to eye and nourishing it
  - b. Help to change curvature of the eye lens
  - c. Maintain shape of the eye ball
  - d. Form clear images on retina

(B) Draw a suitable ray diagrams to show refraction of parallel light rays through convex and concave lenses

(C) The given setup was arranged to show correction of one of eye disease

- What is the above eye defects?
- What is the other lens use to get clear image on to the screen?
- Write the place of the above lens should be kept to get clear image.
- Explain the way of correcting above eye defect.



(03) (A) Write the part of the human ear that shown given features

- A cartilaginous part that direct sound
- The tube that connect to the pharynx from middle ear
- Transmitting vibrations from tympanic membrane to the Ossicles
- Transmitting impulses to the optic neuron

(B)

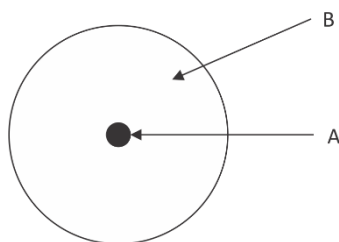
- Draw a sketch to show the range of binocular vision of human eye
- Write two advantage of binocular vision
- Write the information according to eye disease glaucoma
  - What is the main reason for glaucoma?
  - Write two damages cause to the eye due to glaucoma
  - Write a risky person liable to get this disease.

(C)

- Write the symbols of given elements
  - Carbon
  - Calcium
  - Copper
  - Magnesium
  - Silver
- Draw only two structure of the out of given molecules
 

|            |                   |
|------------|-------------------|
| 1. Water   | 3. Carbon dioxide |
| 2. Methane | 4. Ammonia        |

(04) (A) Given below is an atomic structure of an element



- Write the name of scientist that denoted the above atomic structure
- Describe briefly about the above atomic structure
- Name A and B of the above atomic structure
- What are the sub atomic particles in unit A?
- What is the subatomic particle in zone B?

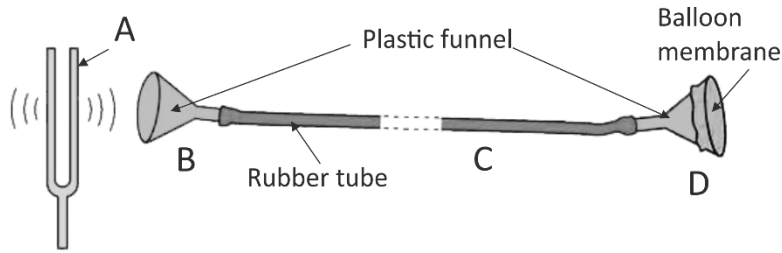
(B) Given symbol is illustrating the standard way of writing an element

Write the answer for given questions

- What is the atomic number
- What is the mass number
- Number of protons
- Number of neutrons
- Number of electrons



(C) Given setup demonstrate how a membrane is vibrated according to a sound



- i. Write the parts of the ear that denoted as B, C and D
- ii. What is the instrument A?
- iii. How to operate device A?
- iv. Write the observation of the above activity.

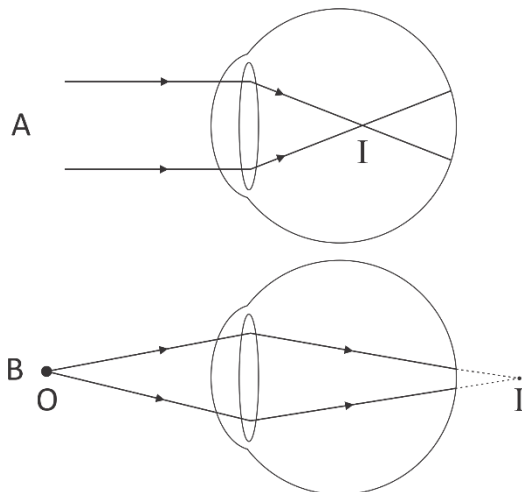
(05) (A) matter can be classified as pure and impure (non-pure) substances

1. Write 2 types of pure substances
2. Write 2 types of impure substances
3. Write main contents of given mixture
  - a. Air
  - b. Crude oil
4. Write the method of separating components of given mixtures
  - a. Rice and sand mixture
  - b. Extracting salt from sea water
  - c. Extracting oil from cinnamon leaves
  - d. Extracting components from crude oil

(B) Complete the given table

| Atomic number | Element | Number of protons | Number of Neutrons | Mass number |
|---------------|---------|-------------------|--------------------|-------------|
|               | N       |                   | 7                  | 14          |
| 8             | O       |                   |                    | 16          |
|               | F       | 9                 |                    | 19          |
| 11            | Na      |                   | 12                 |             |
| 17            | Cl      |                   | 18                 |             |
|               | Ca      | 20                | 20                 |             |

Given below are ray diagrams that shows one of main defects of the eye



- i. Name the defects A and B
- ii. Draw correction for one of the above eye disease