



**NATIONAL OFFICERS ACADEMY**  
**Final Mock Exams CSS-2024**  
**February 2024 (Final Mock)**  
**GENERAL KNOWLEDGE-I**  
**GENERAL SCIENCE AND ABILITY**

<b>TIME ALLOWED: THREE HOURS</b>	<b>PART-I (MCQS)</b>	<b>MAXIMUM MARKS = 20</b>
<b>PART-I(MCQS): MAXIMUM 30 INUTES</b>	<b>PART-II</b>	<b>MAXIMUM MARKS = 80</b>

**NOTE:**

- i. Part-II is to be attempted on the separate Answer Book.**
- ii. Attempt ONLY FOUR questions from PART-II by selecting TWO questions from EACH SECTION. ALL questions carry EQUAL marks.**

**PART-II**  
**SECTION-I**

Q. No. 2

- a. On 18<sup>th</sup> December 2023 Volcano was erupted in Iceland after series of small earthquakes, discuss how Volcanoes are erupted?
- b. What is Big Bang and Big Crunch? How age of the universe is determined?
- c. Discuss any five sources of Renewable Energy.
- d. 820 km of optical fiber is laid down between Khunjerab Pass and city of Rawalpindi under CPEC, how optical fibers work?

Q. No. 3

- a. 2023 was the hottest year according to Asian Development Bank. What are major hurdles in developing countries to tackle the impacts of global warming? Highlight in accordance with COP-28.
- b. Write a note on Balanced Diet.
- c. Machine learning is the subset of Artificial Intelligence. How it has revolutionized the today's world?
- d. Distinguish RAM and ROM of Computers.

Q. No. 4

- a. What are the methods employed in Solid Waste Management?
- b. How does a Human Heart work in blood circulation?
- c. What is Myopia and Hyperopia? Enlist the major parts of Human Eye.
- d. Write uses of each of the following:  
i) Microwave ii) Ultraviolet iii) X-Rays

Q. No. 5

- a. What are the different methods of food preservation?
- b. What is Milkyway? How Dark Matter is related to Galaxies? Give different parts of Galaxies.
- c. Distinguish Solar and Lunar eclipses.
- d. What are Nuclear Fission & Fusion? Explain ionic bond in table salt.

**SECTION-II**

Q. No. 6

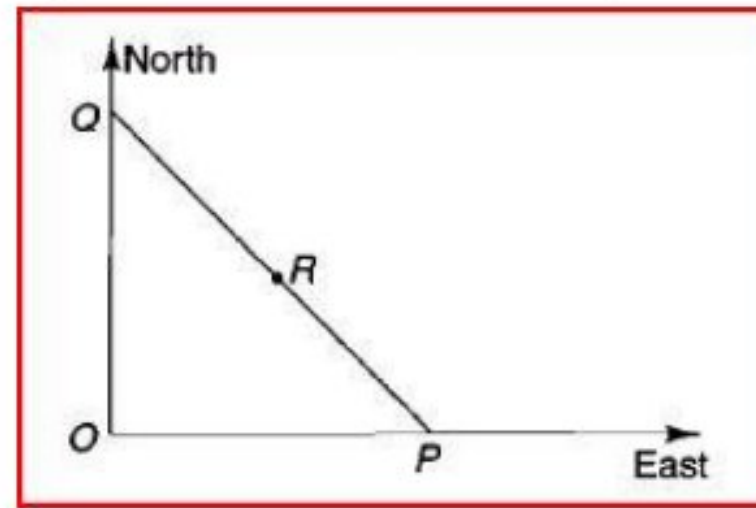
- a. Three candidates contested elections in a constituency of Islamabad and received votes 15000, 10000 and 8000 respectively. What is the percentage of total votes of the winning candidate?
- b. The ratios of angles of a triangle are 3:4:5 in total distribution. Find the each angle.
- c. In a sports meet, group of boys and girls are to be formed. Each group consists of 4 boys and 6 girls. How many boys are required, if 102 girls are available for such groupings?



- d. The ratio of present ages of A & B is 6:7. After 5-years this ratio would become 7:8. Find present ages of A and B.

Q. No. 7

- a. In the given figure, P is 300 km eastward of O and Q is 400 km North of O, R is exactly in the middle of Q and P, Find the distance between Q and R.



- b. Find the angles of perimeter of regular Pentagon with each side of 5cm.  
c. How IQ is determined by the formula if mental age is 11-years and person is 9-years old?  
d. The average age of three boys is 15 years if their ages are in the ratio 3:5:7. What is the age of the youngest boy?

Q. No. 8

- a. The sum of three consecutive odd numbers is 273. What are the three odd numbers?  
b. Find the missing number in the given series.  
(i) 4, 16, 36, 64, ?, 144. (ii) 30, 29, 27, ?, 20, 15 (iii) 1, 7, 15, 25, ?, 51 (iv) 0, 2, 6, 12, 20, 30, ? (v) 48, 24, 72, 35, 108, ?  
c. Find out the correct word from the given jumbled spellings.  
(i) THRSI (ii) GNDREA (iii) SCHAMOT (iv) ONLNDO (v) HIODALY  
d. Sara's mother is 6 times older than Sara, whereas her brother Ali is twice as old as Sara. In three years' time the sum of their ages will be 72. How old are Sara, Ali and their mother now?

\*\*\*\*\* We wish you Good Luck for CSS-2024\*\*\*\*\*



Date: \_\_\_\_\_

GSSA

Day: \_\_\_\_\_

Q4

a) What are the methods employed in Solid waste management?

A) The methods employed in Solid waste management include:

- 1 Landfill: This is most popular method where garbage is buried in the land, but it can take up a lot of space and pose dangers like the emission of explosive methane gas.
- 2 Incineration: involves burning waste at high temperatures to reduce it to incombustible matter.
- 3 Waste-to-energy: This method involves the conversion of non-recyclable waste into electricity and usable heat, helping to reduce carbon emissions.

(b) How does a Human Heart work in blood circulation?

A) The Human heart works as a pump, sending blood throughout the body to deliver O<sub>2</sub> and nutrients to the organ and tissues.

1 Blood Circulation

\* Oxygen-rich blood is pumped from the heart to the body through the arteries.

\* The blood returns to the heart through the veins.



Date: \_\_\_\_\_

Day: \_\_\_\_\_

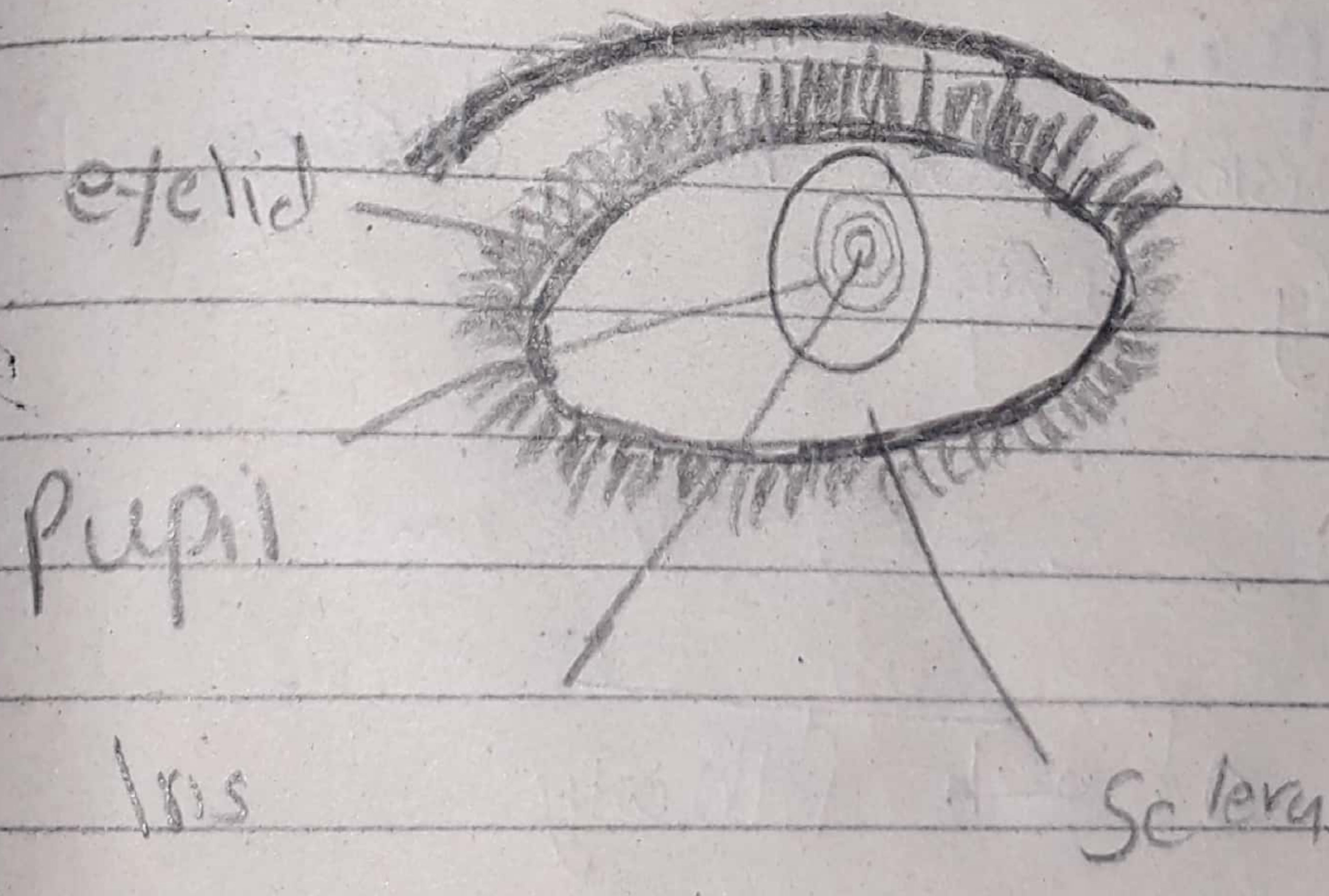
## Valves and Chambers:

The heart has four valves that control the direction of blood flow, ensuring that blood flows in one direction like a one-way traffic system.

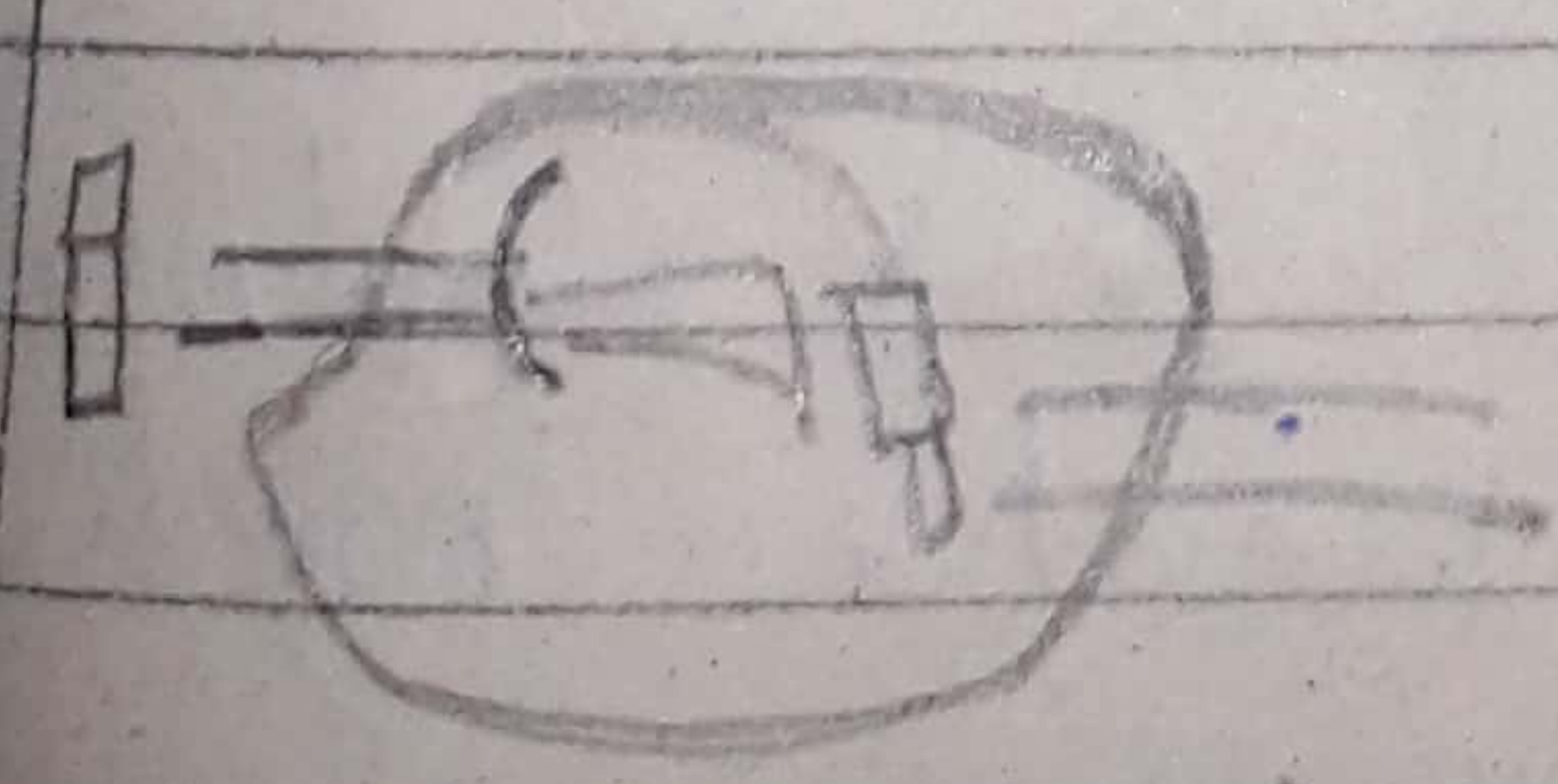
The blood enters the heart's right atrium and is pumped to the right ventricle. When the right ventricle pumps the blood to the lungs for oxygenation. After picking up oxygen, the blood travels back to the heart and is pumped to the lungs for heart and is pumped to the body's tissues through the aorta.

c. What is Myopia and Hyperopia?  
Enlist the major parts of Human Eye.

### Human eye:

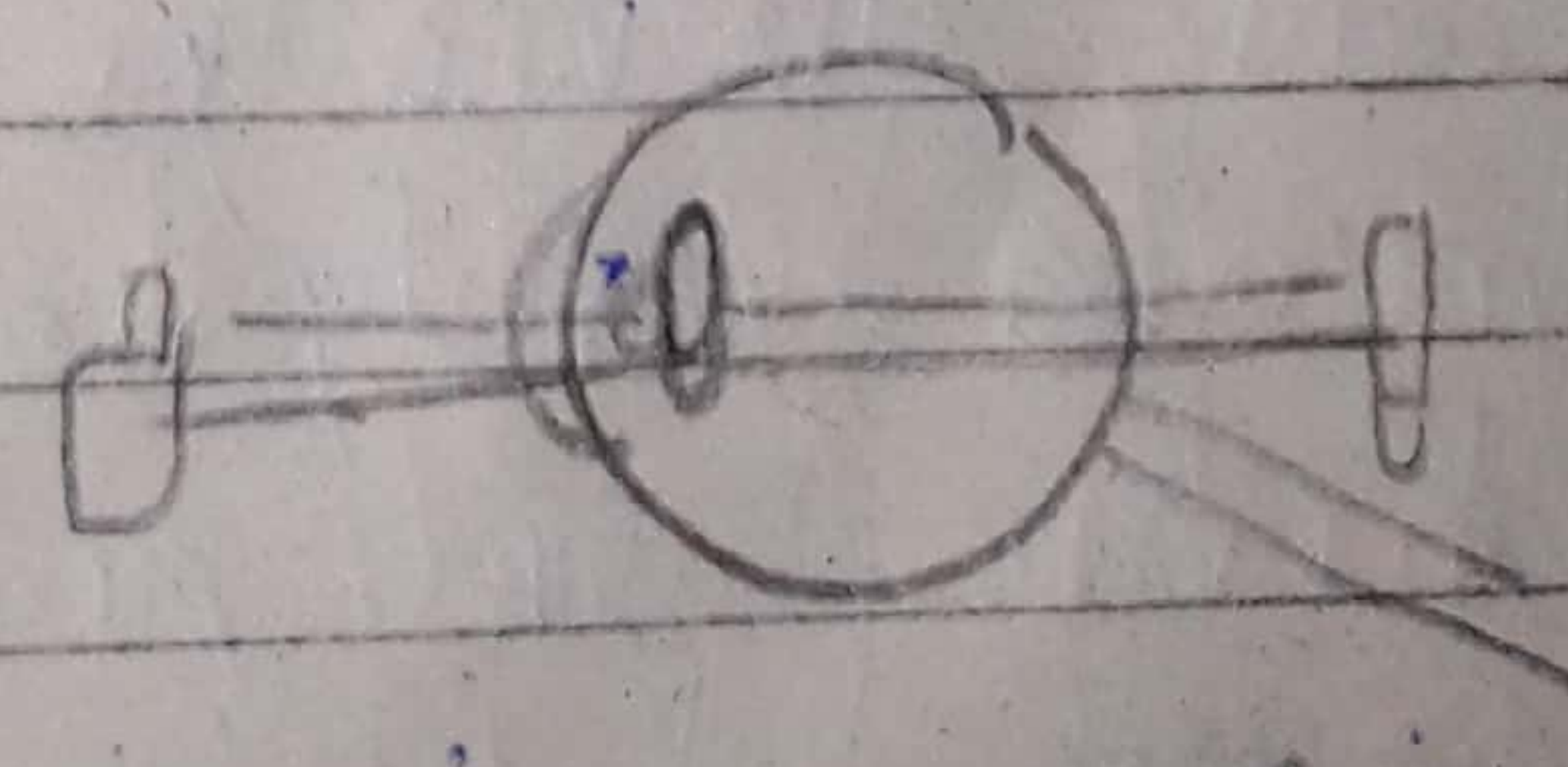


### Myopia



Lenses of Myopia

### Hyperopia



Lenses for Hyperopia



Date: \_\_\_\_\_

Day: \_\_\_\_\_

Ans

- 1 Myopia and hyperopia are two common vision problems that affect people's ability to see objects at different distances.
- 2 Myopia also known as nearsightedness while hyperopia also known as farsightedness.
- 3 Myopia occurs when the image of a distance object is focused in front of the retina while hyperopia when the image of a nearby object is focused behind the retina.

### Symptoms

### of myopia and hyperopia

#### 1 Myopia:

- 1 Blurry vision at a distance
- 2 Difficulty driving
- 3 Eye strain
- 4 Headaches

#### 2 Hyperopia:

- 1 Blurry vision at a near distance
- 2 Difficulty driving
- 3 Eye strain
- 4 Headaches

Write use of each following:

#### 1 Microwaves

Microwave ovens are commonly used for reheating previously cooked foods and cooking a variety of dishes. They heat food by passing microwave radiation through it causing dielectric heat. The microwave is common using is kitchen appliances.



Date: \_\_\_\_\_

Day: \_\_\_\_\_

Q5  
what are the 8 different methods of food presentation

Ans

Chilling

Freezing

sugaring

Salting

Canning

Vacuum

Freeze Drying

Q6  
What is Milk way

How Dark Matter is related to Galaxies  
Give different parts of Galaxies.

Ans

Milk way.

The milk way is the galaxy that contains our Solar system. it is barred spiral galaxy.

which means it has a bar of stars or across its center and large spiral arms extending from the bar.

The milky way is home to hundreds of stars including our sun, and is also composed of dust and gas. It is approximately 13.6 billion year old and the part of galaxy is known as Local Star.

Dark Matter

is related to galaxies

through the concept of dark matter

holes, in our modern galaxy understanding



Date: \_\_\_\_\_

of galaxy formation every galaxy is believed to form within a dark matter halo. These halos are vast invisible regions of mass that envelop galaxies providing the gravitational glue that holds ordinary matter together. Dark matter is not known to interact with ordinary matter and radiation except through gravity, making it difficult to detect in the laboratory.

Qc Di

Qc Distinguish Solar and Lunar eclipse

Ans

1. A solar eclipse occurs when the moon passes between the earth and the sun casting a shadow on the earth while a lunar eclipse occurs when the earth passes between sun and the moon casting a shadow on the moon.

2. Solar eclipses can be classified as total, annular or partial depending on the alignment of the sun, moon and earth.

3. In total solar eclipse, the moon completely covers the sun while annular eclipse the moon appears smaller than sun.

### Part II

Q8

a. The sum of three consecutive odd number is 273. What are the three odd number.

Ans

The three consecutive odd numbers are



Date: \_\_\_\_\_

Day: \_\_\_\_\_

Q. 89, 91, and 93 and their sum is  
indeed 273.

Q. b

Find missing number.

a) 4, 16, 36, 64, 100, 144

b) 30, 29, 27, 24, 20

c) 1, 7, 15, 25, 37, 51

d) 0, 2, 6, 12, 20, 30, 42

e) 48, 24, 72, 35, 108, 54

Q. Find out the correct word from the given  
jumbled spellings

1. THRSI

Shirt

2. GNDYEA

Garden

3. SFLAMOT

Matchos

4. ONLND

London

5. HIODaly

Holiday

