



Winmeen's

6th Science
1st Term Notes
Questions

New Book



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6th Science 1st Term Notes Questions – [New Book]

<u>1. Measurements</u>
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1. Measurements**1. Choose the correct answer:**

- The girth of a tree can be measured by
 - metre scale
 - metre rod
 - plastic ruler
 - measuring tape**
- The conversion of 7 m into cm gives
 - 700 cm
 - 7 cm
 - 700 cm**
 - 7000 cm
- Quantity that can be measured is called
 - physical quantity**
 - measurement
 - unit
 - motion
- Choose the correct one
 - km > mm > cm > m
 - km > mm > m > cm
 - km > m > cm > mm**
 - km > cm > m > mm
- While measuring length of an object using a ruler; the position of your eye should be
 - left side of the point.

- b) vertically above the point where the measurement is to be taken.
- c) right side of the point
- d) any where according to one's convenience
6. In which SI unit, you can measure your height?
- a) Kilogram b) Litre
- c) **Metre** d) Second
7. The distance between one end and the other end is called _____
- a) mass b) **length**
- c) time d) none
8. _____ is used to measure the accurate time of the activity.
- a) clock b) watch
- c) **stop clock** d) sundial
9. Five kilometer is equal to _____
- a) 500 cm b) 500 m
- c) **5000 m** d) 5000 cm
10. SI unit for volume is _____
- a) m^2 b) m
- c) **m^3** d) none
11. Twenty decimeter is equal to _____
- a) 2 km b) 20 cm
- c) **2 metre** d) 200 mm
12. _____ is used to measure mass.
- a) stop clock b) **beam balance**
- c) sundial d) graduated cylinder
13. The metric system of units was created by the _____ in 1790.

- a) Greek b) Australians
c) Russians d) **French**

14. The moon's gravitational pull is one _____ of the earth's pull.

- a) seventh b) sixth
c) fifth d) fourth

2. True or False

1. We can say that mass of an object is 126kg. - True
2. Length of one's chest can be measured by using metre scale. - False
3. Ten millimeters makes one centimeter. - True
4. A hand span is reliable measure of length. - False
5. The SI system of units is accepted everywhere in the world. - True
6. Kerosene is measured with the help of graduated cylinder. - True
7. Length is a fundamental quantity. - True
8. On moon, the gravitational force is greater than earth. - False

On moon the gravitational force is lesser than earth.

9. An electronic balance is a device used to find accurate mass. - True
10. Speedometer is a device used for indicating distance travelled by an automobile. - False

Odometer is a device used for indicating distance travelled by an automobile.

11. A ruler or scale used now a days to measure length was invented by William Bedwell. - True
12. Length, mass and time are some of the derived quantities. - False

Length, mass and time are some of the fundamental quantities.

13. Leaves and piece of paper are heavier things. - False

Leaves and piece of paper are lighter things.

14. National physical laboratory is located in delhi. - True

3. Fill in the blanks:

1. SI unit of length is symbolically represented as m
2. 500 gm = 0.5 kilogram.
3. Distance between Delhi and Chennai can be measured in kilometre
4. 1 m = 100 cm
5. 5 km = 5000 m
7. 10^{-3} is one millimetre
8. SI unit of time second
9. Cross view of reading for a measurement leads to error
10. Time is the one what a clock reads.
11. Mass is the amount of substance present in an object.
12. Average can be taken to get the final reading of the recordings of different students for a single measurement.
13. Length is a fundamental quantity.
14. Odometer shows the distance covered by an automobile.
15. A tailor uses tape to take measurements to stitch a cloth.
16. Liquids are measured with this physical quantity. Litre

4. Analogy:

1. Sugar: Beam balance, Lime juice?

Ans: Measuring jar

2. Height of a person: cm, length of your sharpened pencil lead?

Ans: mm (millimeter)

3. Milk : volume, vegetables?

Ans: mass

4. Potatoes : Kilogram; Water : Litre

5. Stop clock : accurate time; Electronic balance : accurate weight

6. Mass: Balance; :Length : measuring tape

7. Amount of water : mass; Gravitational pull: **weight**

5. a. Match the following:

Column A	Column B
1. Length of the fore arm	a) Metre
2. SI unit of length	b) Second
3. Nano	c) 10^3
4. SI Unit of time	d) 10^{-9}
5. Kilo	e) Cubit

Ans: 1-e; 2-a; 3-d; 4-b; 5-c

b. Match the following:

Prefix	Symbol
a) Centi	i) k
b) Nano	ii) c
c) Milli	iii) n
d) Kilo	iv) m

Ans: a-ii; b-iii; c-iv; d-i

6. Complete the given table:

Volume	<u>m³</u>
<u>Mass</u>	kg
Length of your little finger	<u>cm</u>
<u>Distance between two cities</u>	km

7. Arrange in increasing order of unit:

1 Metre, 1 Centimetre, 1 Kilometre, and 1 Millimetre.

Ans: 1 Millimetre < 1 Centimetre < 1 Metre < 1 Kilometre

8. Short Questions & Answers:

1. What is the full form of SI system?

Ans: International System of Units

2. Name any one instrument used for measuring mass.

Ans: Beam balance

3. Find the odd one out: Kilogram, Millimetre, Centimetre, Nanometre.

Ans: Kilogram

4. What is the SI unit of mass?

Ans: Kilogram

5. What are the two parts present in a measurement?

Ans: A number and the units.

6. Define measurement.

The comparison of an unknown quantity with some known quantity is known as measurement.

7. Define mass.

Mass is the measure of the amount of matter in an object.

8. The distance between two places is 43.65 km. Convert it into metre and cm.

(a) Convert km into metre

$$1 \text{ km} = 1000 \text{ m}$$

$$\begin{aligned} 43.65 \text{ km} &= 43.65 \times 1000 = 43650.00 = 43650 \\ &= 43650 \text{ m} \end{aligned}$$

(b) Convert km into cm.

$$1 \text{ km} = 1000 \text{ m}$$

$$1 \text{ m} = 100 \text{ cm}$$

$$1 \text{ km} = 1000 \times 100 \text{ cm}$$

$$1 \text{ km} = 100000 \text{ cm}$$

$$\begin{aligned} \therefore 43.65 \text{ km} &= 43.650 \times 100000 = 4365000.00 \\ &= 436500 \text{ cm} \end{aligned}$$

9. What are the rules to be followed to make accurate measurement with scale?

- (i) Take care to write the correct submultiple.
- (ii) Always keep the object in parallel to the scale.
- (iii) Start the measurement from '0' of the scale.

10. What are the materials needed to find the length of a banana?

A metre scale, a string or thread, sketch pen.

11. What formula is used to measure area of your class room?

My class room area = length x Breadth

12. Give an example of a device used to find the accurate measurement of weight.

Electronic balance

13. In earlier days, which instruments are used to measure time?

Sand clock and sundial

14. What are the clocks used to measure a smaller duration of time?

Electronic clock, stop watch

15. Who invented a ruler or scale?

William Bedwell

16. Which alloy is used to make the standard metre rod?

An alloy of platinum and iridium.

17. What is length?

The distance between one end and the other desired end is called as length.

18. Give some examples of larger length measures.

- i) Height of the building.
- ii) Length of a banner
- iii) Height of lamp post

19. List the SI unit of length, mass and time.

- i) Length is measured by metre (m).

ii) Mass is measured by kilogram (kg)

iii) Time is measured by second (s).

20. What is meant by parallax?

Parallax is a displacement or difference in the apparent position of an object view along two different lines of sight.

21. Differentiate of Mass and Weight.

Mass	Weight
Amount of matter in an object.	Gravitational pull experienced by the mass.
Measuring instrument is Beam balance.	Measuring instrument is Electronic balance.

22. Where are the electronic balances used?

Electronic balances are used in grocery shops and jewelries.

23. Hold a sheet paper in one hand and a book in other hand. Which hand feels heaviness? Why?

The hand, which holds the book, will feel heaviness. The mass of the book is more than that of a single sheet of paper. Therefore, the pull on the book is more than that of the paper. Hence our hand has to give more force to hold a book than a paper.

2. Forces and Motion

1. Choose the correct answer:

1. Unit of speed is

- a) m
- b) s
- c) kg
- d) m/s

2. Oscillatory motion among the following is

- a) Rotation of the earth about its axis.
- b) Revolution of the moon about the earth.
- c) To and fro movement of a vibrating string.
- d) All of these

3. The correct relation among the following is

- a) Speed = distance x time **b) Speed = distance / time**
c) Speed = time / distance d) Speed = 1 / (distance x time)

4. Gita rides with her father's bike to her uncle's house which is 40 km away from her home. She takes 40 minutes to reach there.

Statement 1: She travels with a speed of 1 km / minute.

Statement 2: She travels with a speed of 1 km/ hour.

- a) Statement 1 alone is correct.**
b) Statement 2 alone is correct
c) Both statement 1 and 2 are correct.
d) Neither statement 1 nor statement 2 is correct.

5. _____ is an ancient Indian astronomer.

- a) C.V.Raman **b) Aryabatta**
c) Usain Bolt d) Edison

6. People walking in a crowded street is example of _____ motion.

- a) linear b) circular
c) rotator **d) zigzag**

7. Identify the Periodic motion among the following:

- a) a horse running in a race **b) revolution of the moon around the earth**
c) a coconut falling from a tree d) paper flight moving

8. Usain Bolt crossed 100 metre in _____ seconds and made a world record.

- a) 9.58** b) 9.83
c) 9.85 d) 9.38

9. _____ are robots scaled down to microscopic size in order to put them into very small spaces to perform a function.

- a) Car robots b) Home robots

c) Game robots

d) Nano bots

10. A _____ is the fastest land animal.

a) Horse

b) Lion

c) Cheetah

d) Tiger

11. A cheetah can run with an average speed of _____

a) 112 km/h

b) 121 km/h

c) 211 km/h

d) 122 km/h

2. Find whether the following statements are true or false. If false give the correct answer:

1. To and fro motion is called oscillatory motion.

- True

2. Vibratory motion and rotator motion are periodic motion.

- False

Vibratory motion and oscillatory motion are periodic motions.

3. Vehicles moving with varying speeds are said to be in uniform motion.

- False

Vehicles moving with varying speeds are said to be in non-uniform motion.

(or)

Vehicles moving with uniform speeds are said to be in uniform motion.

4. Robots will replace human in future.

- False

Robots will not replace human in future.

5. Motion occurs when the object is pulled or pushed by an agency.

- True

6. Force executed by touching the body is called non - contact force.

- False

Force executed by touching the body is called contact force.

7. Gravity pushes the ripen coconut from the tree to the ground.

- False

Gravity pulls the ripen coconut from the tree to the ground.

8. Throwing paper aero plane is the best example of linear motion.

- False

Throwing paper aero plane is the best example of curvilinear motion.

9. The movement of a body about its own axis like a rotating top is liner motion.

- False




The movement of a body about its own axis like a rotating top is Rotatory motion.

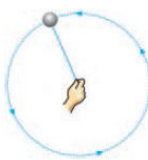

10. Motion repeated in equal intervals of time is called as periodic motion. - True

3. Fill in the blanks:

1. A bike moving on a staring road is an example of linear motion.
2. Gravitational force is a non contact force force/
3. Motion of a potter's wheel is an example of rotatory motion.
4. When an object covers equal distances in equal interval of time, it is said to be in uniform motion.
5. Forces are push or pull by an animate or inanimate agency.
6. Application of force in an object results in motion from a state of rest
7. Fast oscillations are referred to as vibrations
8. Motion repeated in equal intervals of time is called periodic motion
9. Robots are automatic machines.
10. The term Robots comes from a Czech word robota
11. Robotics is the study of robots in science.

4. Match the following

S.No	Column A		Column B
1		a)	Circular motion
2		b)	Oscillatory motion
3		c)	linear motion

4		d)	rotatory motion
5		e)	linear and rotator motion
Ans: 1- C; 2 -D; 3 – B; 4- A; 5- E			

5. Fill with examples:

Linear motion

Free fall objects

Curvilinear motion

Throwing ball

Self rotatory motion

Motion of wheel in a cart.

Circular motion

Athlete running around a track

Oscillatory motion

Flapping of elephants ear

Irregular motion

Playing foot ball

6. Analogy

1. Kicking a ball : contact form :: falling of lead : non contact force
2. Distance : metre :: speed : metre/ second
3. Circulatory motion: a spinning top :: oscillatory motion: swinging of a pendulum.

7. Give one word for the following statements:

1. The force which acts on an object without Physical contact with it.

Non contact force

2. A change in the position of an object with time.

Motion

3. The motion which repeats itself after a fixed interval of time.

Oscillatory motion

4. The motion of an object travels equal distances in equal intervals of time.

Uniform motion

5. A machine capable of carrying out a complex series of actions automatically.

Robots.

8. Short Questions & Answers**1. Define force.**

Forces are push or pull by an animate or inanimate agency.

2. Name different types of motion based on the path.

- i) Linear motion ii) Curvilinear motion
- iii) Circular motion iv) Rotatory motion
- v) Oscillatory motion vi) Zigzag (irregular) motion

3. If you are sitting in a moving car, will you be at rest or motion with respect to your friend sitting next to you?

I am in rest with respect to my friend, sitting inside the car.

4. Rotation of the earth is a periodic motion. Justify.

Motion repeated in equal intervals of time is called as periodic motion. The earth rotates on its axis once in 24 hours. The duration of time is fixed as 24 hours. Therefore the rotation of earth is a periodic motion.

5. Differentiate between rotational and curvilinear motion.

Sl.no	Rotational motion	Curvilinear motion
1.	A body moves along a circular path.	A body moves along a curved path.
2.	Without changing its position, about its own (fixed) axis.	Changes its position with motion.
3.	Eg. Rotation of a spinning top.	Eg. Throwing paper airplanes or paper darts.

6. A vehicle covers a distance of 400 km in 5 hours. Calculate its average speed.

Distance covered by the vehicle	=	400 km
Time taken	=	5 hours
Average Speed	=	$\frac{\text{distance covered}}{\text{time taken}} = \frac{400 \text{ km}}{5 \text{ hour}}$
	=	80 km/hr

7. What is motion? Classify different types of motion with examples.

Motion: Change of position of any object with respect to time is known as motion.

1. Based on path:

- | | |
|-------------------------------|-------------------------------------|
| i) Linear motion | eg. Parade of the soldiers. |
| ii) Curvilinear motion | eg. Paper flight moving. |
| iii) Circular motion | eg. Swirling stone tied to the rope |
| iv) Rotatory motion | eg. Rotating top |
| v) Oscillatory motion | eg. Clock pendulum |
| vi) Zigzag (irregular) motion | eg. Motion of a bee |

2. Based on duration:

- | | |
|-------------------------|--|
| i) Periodic motion | eg. Motion of a bob of simple pendulum |
| ii) Non periodic motion | eg. swaying of the branches of a tree. |

3. Based on speed:

- | | |
|------------------------|--|
| i) Uniform motion | eg. Hour hand of a clock |
| ii) Non-uniform motion | eg. Motion of a train, as it leaves a station. |

8. Define motion.

When there is a change of position of an object with respect to time, then it is called motion.

9. What is non-contact force?

The force applied without touching the object is known as non-contact force.

10. List out the types of forces on the basis of contact.

There are two types. I) Contact force ii) Non-contact force

11. Give the properties of force.

- i) Forces can change the state of a body from rest to motion or motion to rest.
- ii) Forces can change the shape of the body.

12. Define non-periodic motion.

When a motion is not in uniform interval, then such motion is called non-periodic motion.

13. Define Average speed.

The distance travelled by an object in unit time is called average speed.

$$\text{Average speed} = \frac{\text{distance covered}}{\text{time taken}}$$

14. List out the types of motion on the basis of speed.

There are two types: i) Uniform motion ii) Non-uniform motion

15. Define uniform motion.

If an object covers uniform distances in uniform intervals, then the motion of the objects is called uniform motion.

16. Why robots are used in many places?

Robots can perform mechanical and repetitive jobs faster, more accurately than human beings. It can also handle dangerous materials and explore distant planets.

17. What are the important parts of a robot?

Electronic sensors are a robot's eye and ears. These are the important parts.

18. What is nanobots?

Nanobots are robots scaled down to microscopic size in order to put them into very small places to perform a function.

19. What are the uses of future robots?

- i) It could be placed in the blood stream to perform surgical procedures.
- ii) It could target cancer cells and destroy them without touching healthy cells nearby.

20. Classify the following motions according to the path it takes.

- a) A coconut falling from a tree - **Linear motion**

- | | |
|--|----------------------|
| b) Heart beat | - Oscillatory motion |
| c) A stone thrown into the air at an angle | - Curvilinear motion |
| d) Movement of people in a bazaar | - Zigzag motion |
| e) Motion of a spinning top | - Rotatory motion |

21. Classify the following motions based on duration and speed.

- | | |
|--|-----------------------|
| a) Coconut falls to the ground | - Non-periodic motion |
| b) A cart pulled by a bullock | - Non-periodic motion |
| c) Train journey | - Non-uniform motion |
| d) A bouncing ball | - Periodic motion |
| e) Revolution of moon around the earth | - Uniform motion |

3. Matter around us

1. Choose the appropriate answer:

1. _____ is not made of matter.

- | | |
|---------------------|--------------|
| a) gold ring | b) iron nail |
| c) light ray | d) oil drop |

2. 200 ml of water is poured into a bowl of 400ml capacity. The volume of water now will be _____

- | | |
|------------------|-----------|
| a) 400 ml | b) 600 ml |
| c) 200 ml | d) 800 ml |

3. Seeds from water –melon can be removed by _____ method.

- | | |
|------------------------|----------------|
| a) hand picking | b) filtration |
| c) magnetic separation | d) decantation |

4. Lighter impurities like dust when mixed with rice or pulse can be removed by _____

- | | |
|----------------|---------------------|
| a) filtration | b) sedimentation |
| c) decantation | d) winnowing |

5. _____ is essential to perform winnowing activity.

- a) rain
b) soil
c) water
d) **air**
6. Filtration method is effective in separating _____ mixture.
a) solid-solid
b) **solid-liquid**
c) liquid-liquid
d) liquid-gas
7. From the following _____ is not a mixture.
a) coffee with milk
b) lemon juice
c) **water**
d) ice cream embedded with nuts
8. All the matter made of _____
a) particles
b) **atoms**
c) elements
d) mixture
9. A standard sheet of paper is about _____ atoms thick.
a) thousands
b) crores
c) lakhs
d) **million**
10. A drop of water contains about _____ water particles.
a) **10^{21}**
b) 10^{12}
c) 10^{22}
d) 10^{20}
11. One dot that you make with your pen has more than _____ lakh molecules.
a) one
b) **two**
c) four
d) three
12. _____ has definite shape and volume.
a) **solid**
b) liquid
c) gas
d) none
13. The space between _____ particles is the greatest one.
a) solid
b) liquid

c) gas

d) cold

14. For removing grains from stalks, _____ method is used.

a) winnowing

b) sieving

c) churning

d) threshing

15. Very tiny insoluble solid separated from a liquid is _____

a) winnowing

b) churning

c) sieving

d) filtration

16. _____ is a smallest particle.

a) molecule

b) element

c) atom

d) substance

17. We mix rice, dal, salt, chillies, pepper, ghee and other ingredients to make pongal. So pongal is also a _____

a) mixture

b) compound

c) element

d) matter

2. True or False, If False, give the correct statement:

1. Air is not compressible.

False – Air is highly compressible.

2. Liquid has no fixed volume but have fixed shape.

False – Liquids have fixed volume but have no fixed shape.

3. Particles in solids are free to move.

False – Particles of solid cannot move have freely (or) particles of liquid are free to move.

4. When pulses are washed with water before cooking, the water is separated from them by the process of filtration.

False- When pulses are washed with water before cooking, the water is separated from them by the process of decantation.

5. Strainer is a kind of sieve which is used to separate a liquid from solid. - **True**

6. Grain and husk can be separated by winnowing. - **True**

7. Air is a pure substance.

False – Air is a mixture of gases.

8. Butter from curds is separated by sedimentation.

False – Butter from curd is separated by Churning.

9. Gas like state of Matter that exists at extremely cold temperatures used in the field of cryogenics.

Ans: True

10. The particles in matter are extremely small and can be seen even with a powerful microscope.

Ans: False. The particles in matter are extremely small and cannot be seen even with a powerful microscope.

11. The Cow and Birds are nonliving things.

Ans: False. The Cow and Birds are living things.

12. The feather and paper Clip can float on the water.

Ans: True

13. The force of attraction between liquid particles is more than solid particles.

Ans: False. The force of attraction between liquid particles is less than solid particles.

14. Gases have neither a definite shape nor a definite volume.

Ans: True.

15. Water particles have no space between them.

Ans: False. Water particles have space between them.

16. Liquid is affected by gravity less than anything.

Ans: False. Liquid is effected by gravity more than anything.

3. Match the following:

a) Property	Example
1. Breaks easily (brittle)	a) Metal pan
2. Bends readily	b) Rubber band
3. Can be stretched easily	c) Cotton wool

4. Gets compressed easily d) Mud pot
 5. Gets heated readily e) Plastic wire

Ans: 1- d; 2- e; 3-b; 4-c; 5-a

B)

A	B	C
1) Separation of visible undesirable components	a) Water mixed with chalk powder	i) Magnetic separation
2) Separating of heavier and lighter components	b) Sand and water	ii) Decantation
3) Separation of insoluble impurities	c) Iron impurities	iii) Filtration
4. Separation of magnetic component from non-magnetic components.	d) rice and stone	iv) Hand picking
5. Separation of solids from liquids	e) Husk and paddy	v) winnowing

Ans: 1-d-iv; 2-e-v; 3-a-iii; 4-c- i; 5-b-ii

4. Fill in the blanks:

- Matter is made up of atoms
- In solids, the space between the particles is less than in liquids and gases
- Grains can be separated from their stalks by threshing
- Chillies are removed from 'upma' by hand picking method.
- The method employed to separate clay particles from water is filtration
- Among the following items: safety pins, pencil and rubber band, safety pins will get attracted to a magnet.
- Water obtained from tube wells is usually impure water.
- Stars including Sun are covered in plasma
- Tiny particles present in all matter are called as atoms and molecules

10. A **pure** substance is made up of only one kind of particles.
11. Purity of gold is expressed in terms of **carat**
12. **Wire mesh** is used to separate gravel from sand at a construction site.
13. **Decantation** process is done after sedimentation.
14. RO is a process for removing impurities from **water** to make it potable.
15. Turmeric powder is adulterated with a **bright yellow** chemical.
16. In most houses people use commercial water filter to remove impurities and also kill the harmful germ in water using **UV-rays**
17. The principle used in washing machines to squeeze out dirt from cloth is called **centrifugation**
18. **Gas** is not affected by gravity.
19. An example for a substance to be obtained in highly pure form is **gold from gold mines**

5. Complete the given analogy:

1. Solid: rigid :: gas : **flexibility**
2. Large inter-particle space : space : gas:: **Little inter-particle space** : solid
3. Solid : Definite shape :: **Liquid** : shape of the vessel
4. Husk-grains : winnowing :: saw dust-chalk piece : **Filtration**
5. Murukku from hot oil : **Filtration** : coffee powder residue from decoction: **Filtration**
6. Iron – sulphur mixture : **magnetic separation** :: Mustard seeds from Urad – dhal : rolling.
7. Bucket : Plastic :: Table : **wood**
8. Water: Liquid :: Apple : **Solid**
9. Made up of one kind of particles: Pure substance :: Chemical combination of two or more element : **Compound**
10. Mixture containing iron: Magnetic separation :: Muddy water : **Filtration**
11. Removal of Harmful germs : UV rays:: Removal of impurities from water: **RO process.**

6. Short Questions & answer:

1. Define the term matter.

Matter is defined as anything which occupies space and has mass.

2. How can husk or fine dust particles be separated from rice before cooking.

- i) The husk or fine dust particles can be separated from rice by washing the rice with water before cooking.
- ii) The lighter impurities float while heavier rice grains sink to the bottom. (it is sedimentation)
- iii) Then the water with the impurities is carefully poured away by decantation. Leaving clean rice at the bottom.

3. Why do we separate mixtures?

We separate mixtures

- i) To remove impurities or harmful components (eg. stones from rice)
- ii) To separate useful component from other components (eg. petrol from petroleum)
- iii) To obtain a substance in highly pure form (eg. gold from gold mines)

4. Give an example for mixture and justify your answer with reason.

Milk is an example for mixture.

It contains water, fat, protein etc. Since two or more compounds are mixed in a physical combination, milk is a mixture.

5. Define Sedimentation.

The settling down of heavier component of a mixture when allowed to remain undisturbed for some time is called sedimentation

6. Give the main difference between a pure substance and an impure substance.

Sl.no	Pure substance	Impure substance
1	It is made up of only one kind of particles.	It is made up of two or more toxic particles.
2.	Unadulterated	Adulterated

7. A rubber ball changes its shape on pressing. Can it be called a solid?

Yes. It has a definite shape and volume. Its particles cannot move freely. It conforms the solid properties.

8. Why do gases not have fixed shape?

- i) Gases possess more intermolecular space and less forces of attraction.
 - ii) They can move freely at any direction.
 - (iii) They have the property of filling the entire part of a container by taking the shape of the container.
- So, gases do not have fixed shape.

9. What method will you employ to separate cheese (paneer) from milk? Explain.

Filtration:

- i) Heat the milk.
- ii) Add lime juice or vinegar after few minutes.
- iii) Cheese will float on the liquid.
- iv) Use strainer to separate the cheese (paneer) from milk.

10. How can you separate a mixture of a large quantity of tiny bits of paper mixed with pulses /dal?

Bits of paper are separated from pulses / dal by winnowing. Bits of paper have less weight and get easily blown away by wind. The pulses /dal are heavier particles and will fall down closer.

11. What is meant by food adulteration?

Food adulteration is the process in which the quality of food is lowered either by the addition of inferior quality material or by extraction of valuable ingredient.

12. Mr. Raghu returns home on a hot summer day and wants to have buttermilk. Mrs. Raghu has only curds. What can she do to get buttermilk? Explain.

Method to prepare buttermilk from curd:

- i) Using a hand churner, the curd has to be blended well.
- ii) Two cups of chilled water is to be added after churning the curd.
- iii) The water is to be mixed well so there are no lumps.
- iv) Ingredients, such as chaat masala shall be added before serving the buttermilk.

13. Distinguish between properties of Solid, liquid, gas.

S.No.	Solid	Liquid	Gas
-------	-------	--------	-----

1.	Definite shape and volume	No definite shape, it attains the shape of the vessel.	It has neither a definite shape nor a definite volume.
2.	Incompressible	Compressible to a small extent.	Highly compressible.
3.	Little space between the particles.	Greater space between the particles.	Greater space between the particles.
4.	Particles cannot move freely.	Particles move freely.	Particles are in a continuous random motion.

14. Name the two microscopes which are used to identify the structure of atom.

- i) SEM - Scanning Electron Microscope
- ii) TEM - Tunnelling Electron Microscope

15. How matter is grouped on the basis of physical states?

Matter can be grouped into three states 1. Solid 2. Liquid 3. Gas

16. Give two examples for diffusion.

- i) Spread of a drop of ink in a glass of water.
- ii) Spread of the smell of an incense stick.

17. Define the term 'Diffusion'.

Diffusion is the tendency of particles to spread out in order to occupy the available space.

18. Define the term 'Liquefaction of gases'.

The process by which substances in their gaseous state are converted to the liquid state is called Liquefaction of gases.

19. How the substance of gaseous particles change to liquid state?

When Pressure on a gas is increased, its molecules come closer together, and its temperature is reduced, which removes enough energy to make it change from the gaseous to the liquid state.

20. Give any two characters of a pure substance.

- i) A pure substance is made up of only one kind of particles.
- ii) It may be elements or compounds.

21. Air is a mixture. Justify.

Air contains Oxygen, Nitrogen, Carbon dioxide, Water vapour, Noble gases etc. So it is a Mixture.

22. Give the characters of a mixture.

- i) Mixture is an impure substance and contains more than one kind of particles.
- ii) In the mixture, the components are mixed in any proportion.

23. What is meant by separation?

The process by which the components of mixture are isolated and removed from each other to get pure substance is called separation.

24. What are the steps involved in separation of sand, salt and water?

Sedimentation, decantation., filtration, evaporation, and condensation.

25. Give any two examples of adulterated food.

- i) Used tea leaves are used as adulterants in tea.
- ii) Small stones are mixed with rice.

4. The Living World of Plants

I. Choose the appropriate answer:

1. Pond is an example of _____ ecosystem.
a) Marine **b) fresh water**
c) deserts d) mountain
2. The important function of stomata is _____.
a) Conduction **b) Transpiration**
c) Photosynthesis d) Absorption
3. Organ of absorption is _____.
a) Root b) Stem
c) Leaf d) Flower
4. The habitat of water hyacinth is _____.
a) Aquatic b) Terrestrial

- c) Desert
d) Mountain
5. _____ is a natural science concerned with study of life and living organisms.
- a) chemistry
b) **biology**
c) zoology
d) physics
6. The underground part of the main axis of a plant is known as _____
- a) shoot
b) node
c) **root**
d) leaf
7. Main axis of the shoot system is called _____
- a) **stem**
b) root
c) leaf
d) buds
8. On the lower side of the leaf there are tiny pores or openings known as _____
- a) leaf base
b) mid rib
c) petiole
d) **stomata**
9. World habitat day is observed on first Monday of _____
- a) **October**
b) November
c) September
d) December
10. _____ is one of the first growing plant during active growth phase.
- a) mango
b) neem
c) hibiscus
d) **bamboo**
11. _____ is the longest river in the world.
- a) Sutlej
b) Yellow
c) **Nile**
d) Congo
12. Length of Nile river is _____
- a) 6560 km
b) **6650 km**
c) 6500 km
d) 5606 km

13. Air spaces in stems and petioles of _____ plant are useful for floating in water.

- a) lotus
- b) water lily
- c) water hyacinth
- d) agave

14. The first land plants are _____

- a) neem and pine
- b) hibiscus and lotus
- c) banyan and peepal
- d) mosses and liverworts

15. The _____ forest in South America produces half of the world's oxygen supply.

- a) Taiga
- b) Congo rain
- c) Amazon rain
- d) Dry deciduous

2. True or False

1. Plants can live without water.

Ans: False. Plants cannot live without water.

2. All plants have chlorophyll.

Ans: True

3. Plants have three parts: the root, the stem and leaves.

Ans: False. Plants have several parts: such as the root, the stem, the leaves, flowers, fruits and seeds.

4. Mountain is an example for fresh water habitat.

Ans: False. Rivers, ponds, lakes and pools are the examples for freshwater habitat. (or) Mountain is an example for Terrestrial habitat.

5. Root is modified into spines.

Ans: False. Leaves are modified into spines.

6. Green plants need sunlight.

Ans: True

7. The living world comprises of plants and animals.

Ans: True

8. Root has nodes and internodes.

Ans: False. Stem has nodes and internodes.

9. Tap root consists of a cluster of roots arising from the base of the stem.

Ans: False. Fibrous root consists of a cluster of roots arising from the base of the stem.

10. The buds at the axils of the leaves are called terminal buds.

Ans: False. The buds at the axils of the leaves are called auxiliary buds.

11. In case of sugarcane, food is stored in the stem region.

Ans: True

12. The longest river in India is the Ganges river.

Ans: True

13. The Amazon rain forest in Canada produces half of the world's oxygen supply.

Ans: False. The Amazon rain forests in South America produce half of the world's oxygen supply.

3. Fill in the blanks:

1. Earth's surface is covered by more than 70 % of water.
2. The driest places on earth are deserts
3. Fixation and absorption are the main functions of root
4. Primary organs of photosynthesis are leaves
5. Tap root system is present in dicotyledonous plants.
6. Plants can prepare food
7. Roots are positively geotropic in nature.
8. Mango plant is a dicotyledonous plant.
9. Carrot and beet root plants store food in their roots.
10. The aerial part of the plant body above the ground is known as shoot system
11. The part of the stem between two successive nodes is called internode
12. The flat portion of the leaf is called leaf lamina
13. The green colour of the leaf is due to the presence of green colour pigment called chlorophyll

14. **Victoria amazonica** plants leaves grow up to 3 metres across.
15. **Phytoplanktons** are free floating Algae.
16. **Thar** desert is called as Great Indian desert.
17. River Ganges is **2525** km long.
18. Marine plants perform about **40%** of all photosynthesis is that occurs on the planet.

4. Complete the given analogy

- | | |
|---|--------------------------------------|
| 1. Aerial part above the ground | : Shoot system |
| Underground part of the axis of a plant | : <u>Root system</u> |
| 2. Dicotyledonous plants | : Bean, mango |
| Monocotyledonous plants | : <u>Grass, paddy</u> |
| 3. Carrot, beetroot | : Store food in roots. |
| Sugarcane | : <u>Store food in shoot</u> |
| 4. Photosynthesis | : <u>Chlorophyll</u> |
| Transpiration | : Stomata |
| 5. Flowering plant | : Sunflower |
| Non-flowering plant | : <u>Riccia</u> |
| 6. Mango | : Angiosperm |
| Cycas | : <u>Gymnosperm</u> |
| 7. Water lily | : Fresh water habitat |
| Marine Algae | : <u>Marine water habitat</u> |
| 8. Rainfall 25-200 cm | : Forest habitat |
| Rainfall below 25 cm | : <u>Desert habitat</u> |
| 9. Sweet peas | : Tendril Climber |
| Clitoria | : <u>Twining</u> |
| 10. Leaves are modified into spines | : Opuntia |

Stem has sharp thorns

: Bougainvillea

5. Match the following:

- | | | |
|-------------------|---|--------------|
| 1. Mountain | - | a) Monocot |
| 2. Desert | - | b) Branches |
| 3. Stem | - | c) Dry place |
| 4. Photosynthesis | - | d) Himalayas |
| 5. Fibrous root | - | e) Leaves |

Ans: 1-d; 2-c; 3-b; 4-e; 5-a

6. Match the following:

- | | | |
|----------------------|---|---------------|
| 1. Tap root | - | a) Grass |
| 2. Aquatic plant | - | b) Teak tree |
| 3. Desert plant | - | c) Neem |
| 4. Grassland | - | d) Opuntia |
| 5. Terrestrial plant | - | e) Water lily |

Ans: 1-c; 2-e; 3-d; 4-a; 5-b

7. Arrange in correct sequence:

1. Leaves – Stem – Root – Flower

Ans: Root, Stem, Leaves, Flower

2. Transpiration – Conduction – Absorption – Fixation

Ans: Fixation, Absorption, Conduction, Transpiration

8. Short Questions & answer:

- 1. Classify the plants on the basis of their habitats.**

The two major habitats

- a) Auitic habitat b) Terrestrial habitat

- a) Auatic habitat classified into two. They are

i) Fresh water habitat ii) Marine water habitat

b) Terrestrial habitat classified into three.

i) Forest habitat ii) Grassland habitat iii) Desert habitat

2. Identify the desert plant from the following - Cactus, Hydrilla, Mango and Rose.

Desert plant - Cactus.

3. Define the term habitat.

A dwelling place of an animal, plant or other organism, to live and reproduce is called habitat.

4. Relate the terms leaves and photosynthesis.

The green leaves are essential for preparing food. Because it contains green pigment called chlorophyll. The preparation of food is known as photosynthesis. Photosynthesis is essential for plant growth.

5. Why do you call jasmine plant, a twiner?

Jasmine plant has weak stem. It cannot stand straight on its own. It must climb on any support to survive. So jasmine plant is called as twiner.

6. Compare the tap root and fibrous root systems.

S.no.	Tap root system	Fibrous root system
1.	Consists single root	Consists cluster of roots
2	It grows straight down in the ground.	It is thin and uniform in size.
3.	Seen in dicotyledonous plants.	Seen in monocotyledonous plants.

7. Distinguish between terrestrial and aquatic habitats.

S.no.	Terrestrial habitats	Aquatic habitats
1.	They are found on land.	They are found in water.
2	They include desert, grassland, forest, farms, towns and cities.	They include the areas permanently as well as occasionally covered by water.

3.	They are classified into 3 types such as Desert habitat, Grassland habitat and forest habitat.	They are classified into 2 types such as fresh water habitat and marine water habitat.
4.	Eg. Rubber tree, teak tree, neem tree.	Eg. Lily, lotus, marine algae, sea grasses.

8. What are the uses of plants'?

Plants are used as food. medicine. wood and shelter.

9. List the main part of flowering plant.

Flowering plant consists of two main parts. They are

- i) Root system
- ii) Shoot system

10. What are the properties of root?

- i) Root lies below the surface of the soil.
- ii) it does not have nodes and internodes.
- iii) It has a root cap at the tip.
- iv) Roots are positively geotropic in nature.

11. Give some examples of monocotyledonous plant and dicotyledonous plant,

Monocotyledonous plant – Grass, Paddy, Maize

Dicotyledonous plant – Bean, Mango, Neem

12. List the characters of shoot system.

- i) Shoot system is the actual part of the plant body above the ground.
- ii) It consists of stem, leaves, flowers and fruits.
- iii) It grows towards the sunlight.
- iv) It has nodes and internodes.

13. List the functions of leaves.

- i) The green leaves prepare food by the process of photosynthesis.
- ii) They help in respiration.

iii) They carry out transpiration.

14. Classify the plants on the basis of i) flower and ii) position of seed.

Base on Flower:

They are classified into i) Flowering plants ii) Non-flowering plants.

Based on the position of seed:

They are classified into i) Gymnosperms ii) Angiosperms

15. List the characters of aquatic plant.

In aquatic plants roots are very much reduced in size. Stem and leaves have chambers that allow to float in the water.

16. Give some examples of fresh water habitat and marine water habitat plants.

Fresh water habitat: Water hyacinth, water lily, lotus

Marine water habitat: Marine algae, sea grasses, marsh grass, phytoplankton's.

17. Name the part which is modified into tendril to sweet peas and bitter gourd?

In Sweet peas: Leaflets are modified.

In Bitter Gourd: Auxiliary buds are modified.

18. Define Thorns.

Leaves of some plants become wholly or partially modified into sharp pointed structures called thorns or spines.

19. Name the part which is modified into thorns or spines in Agave, Opuntia and Bougainvillea.

In Agave: The leaf apex and margins are modified into thorns.

In Opuntia: The leaves are modified into spines.

In Bougainvillea: The stem has sharp thorns.

5. Living World of Animals

1. Choose the appropriate Answer:

1. The study of living things or organisms is called _____

a) Psychology

b) Biology

c) Zoology

d) Botany

2. Which of the following are characteristics of living beings?

i) Respiration

ii) Reproduction

iii) Adaptation

iv) Excretion

Choose the correct sequence

a) I, iii and iv only

b) I, ii only

c) ii and iv only

d) i, iv, ii and iii

3. Lizards breathe through their _____

a) skin

b) gills

c) lungs

d) trachea

4. All animals need _____

a) food and water only

b) water only

c) air, food and water

d) food only

5. Which animal has the special organs of breathing called gills?

a) earthworm

b) fox

c) fish

d) frog

6. Choose the set that represents only biotic components of a habitat.

a) Tiger, deer, grass, soil

b) Rocks, soil, plants, air

c) Sand, turtle, crab, rocks

d) Aquatic plant, fish, frog, insects

7. Which of the following cannot be called as a habitat?

a) a desert with camels

b) a pond with fish and snails

c) cultivated land with grazing cattle.

d) A jungle with wild animals

8. Birds fly in the air with the help of _____

a) heavy and strong bones

b) Soft and thick bones

c) Hollow and light bones

d) Flat and thick bones

9. Paramecium moves from one place to other with the help of _____

- a) Pseudopodia
b) Flagella
c) foot
d) **Cilia**
10. Kangaroo rat lives in _____
a) Aquatic habitat
b) **Desert habitat**
c) Grassland habitat
d) Mountain habitat
11. Which is not a biotic community among the following
a) plants
b) birds
c) **air**
d) elephant
12. Polar bear and penguins dwell in _____
a) **cold region**
b) hot region
c) cold and hot region
d) forest region
13. Jurong Bird Park is located in _____
a) America
b) **Singapore**
c) Japan
d) Germany
14. Euglena moves with the help of _____
a) **Flagellum**
b) Cilia
c) Pseudopods
d) legs
15. Lizards walk with four legs and it is known as _____
a) Bipedal
b) Tripedal
c) Monopodal
d) **Quadrupedal**
16. Among the following, which Bird Sanctuary is located in Tamilnadu?
a) Kadalundi
b) Bharatpur
c) **Vedanthangal**
d) Sultanpur
17. Movement of animals to different location due to seasonal change is called _____
a) Hibernation
b) Aestivation

c) Migration**d) Adaptation**

18. _____ can live for many days without drinking water.

a) dog

b) elephant

c) cow

d) camel

19. Camel passes _____ amount of urine.

a) small

b) large

c) moderate

d) too large

2. Complete the following with appropriate word(s) :

1. Aquatic, deserts, mountains are called **habitats**

2. Based on the number of cells present, animals are classified into **unicellular** and **multicellular**

3. Tail of a bird acts as a rudder which helps to **control the direction of the movements**

4. Amoeba moves with the help of **Pseudopodia (false foot)**

5. Tropical rain forests, grasslands and deserts are known as **Habitats**

6. Some living things are made of a single cell, they are called **unicellular** organism.

7. The breathing organ of a fish is known as **gills**

8. The lizard **moves** on the ground with its claw on its feet.

9. Camel stores **fat** in its hump.

10. Living things are made of small units called **cells**

11. Organisms that are made of many cells are called **multi cellular organisms**

12. Unicellular organisms are small, usually **microscopic** nature, and cannot be seen with naked eyes.

13. All Amoeba **Contractile vacuoles** help in excretion.

14. The fish has fins for **swimming**

15. **Dinosaurs** have web in the toes and able to glide or parachute the air and make soft landings.

16. Birds have streamlined body covered with **feathers**

17. **Camel** is called the Ship of the Desert.

3. True or False, If False give the correct answer:

1. Habitat is a living or dwelling place of an organism.

Ans: True.

2. The geographical features and environmental conditions on earth remain same from one place to other.

Ans: False. The geographical features and environmental conditions on earth differ from one place to other.

3. Amoeba is a unicellular organism and moves with pseudopodia.

Ans: True.

4. Birds can see only one object at a time.

Ans: False. Birds can see two objects at a time. (Binocular vision)

5. Paramecium is a multicellular organism.

Ans: False. Paramecium is a unicellular organism.

6. Fishes are unicellular organism.

Ans: False. Fishes are multicellular organism.

7. In Amoeba, reproduction is by simple diffusion through the body surface.

Ans: False. In amoeba respiration is by simple diffusion through the body surface.

8. In unicellular organisms, the growth occurs by an increase in the size of the cell.

Ans: True.

9. The streamlined body shape of fish helps it to move through the water easily.

Ans: True

10. Some fishes have the capacity to rotate the head around the head joint.

Ans: False. Some lizards have the capacity to rotate the head around the head joint.

11. Movement of animals to different locations due to the season changes is said to be adaptation.

Ans: False. Movement of animals to different locations due to the season changes is said to be migration.

12. Spending the hot and dry period in an inactive state is known as Aestivation.

Ans: True

4. Match the following:

- | | | |
|------------------|---|---|
| 1. Polar bear | - | a) Strong hoovers for running, long hair to protect from cold |
| 2. Penguin | - | b) Strong and fast runner has sharp claws to catch prey. |
| 3. Mountain goat | - | c) Paddle to swim, walk with two legs. |
| 4. Lion | - | d) Thick skin for protection, white fur. |

Ans: 1-d; 2-c; 3-a; 4-b

- | | | |
|-----------|---|--|
| 1. Bird | - | a) Stores water in the body. |
| 2. Fish | - | b) Rotates its head around the head joint. |
| 3. Lizard | - | c) wings that are modified forelimbs |
| 4. Camel | - | d) gills as respiratory organ. |

Ans: 1-c; 2-d; 3-b; 4-a

5. Complete the given analogy:

1. Fish : water :: Elephant : **land**
2. Euglena : Flagellum :: **Cilia** : Paramecium
3. Euglena: unicellular organism :: **Man** :: multicellular organism
4. Fish respiratory organ : gills :: Birds breathing organ: **lungs**
5. Fins : fish :: Feather : **bird**
6. Turtle : Hibernation :: **Snail** : Aestivation
7. Beak : bird's mouth :: **Hump** : Fat stored in camel.

6. Short Questions & answers.

1. How do the birds catch their prey?

The birds catch their prey with the help of a pair of clawed feet.

2. Where can we see Camels in India?

We can see Camels in Rajasthan.

3. Name the locomotory organs of an Amoeba.

The locomotory organs of an Amoeba is pseudopodia.

4. What are the body parts of a snake?

Head, eyes, nostrils, mouth, belly, tail.

5. Which structure helps the bird to change its direction while flying in air?

The tail of the bird helps it to change the direction while flying in air.

6. Differentiate between Unicellular and Multicellular organisms

S.no.	Unicellular Organisms	Multicellular Organisms
1.	They are made up of single cell.	They are made up of many cells.
2.	They can perform all the functions of life.	Different cells perform different functions.
3.	They are very small (microscopic) in size.	They are mostly large in size. They are seen through naked eyes.
4.	They lack tissues, organs and organ systems.	They are composed of tissues, organs and organ systems.
5.	Growth occurs by an increase in the size of the cell.	Growth occurs by an increase in the number of cells by cell division
6.	Eg. Amoeba, paramecium, Euglena	Eg. Earthworm, fish, frogs, lizard and human beings.

7. Write the adaptive features of Polar bear and Penguin.

S.no.	Name of animal	Habitat	Adaptive features
1.	Polar bear	Polar region	Thick skin for protection, white fur
2.	Penguin	Polar region	Paddle to swim, walk with two legs.

8. Mention the feature that helps a bird to fly in the air?

- i) Birds have streamlined body covered with feathers.
- ii) The body shape provides maximum resistance to air.

- iii) They have a pair of wings that are modified forelimbs.
- iv) They have hollow and light bones.
- v) They have strong chest muscles which help them withstand the pressure of the air while flapping their wings during flight.

9. What are the different types of invertebrates?

- i) Sponges (Porifera)
- ii) Comb jellies (Ctenophora)
- iii) Hydras, jellyfishes, sea anemones, and corals (Cnidaria)
- iv) Starfishes, sea urchins, sea cucumbers (Echinodermata)
- v) Flatworms (Platyhelminthes)
- vi) Round or threadworms (Nematoda)
- vii) Earthworms and leeches (Annelida)
- viii) Insects and arachnids (Arthropoda)
- ix) Snails and octopuses (Mollusca)

10. Give some examples of unicellular and multicellular organism.

Unicellular : Amoeba, Paramecium, Euglena.

Multicellular: Fish, Frog, Lizard, Birds, Man.

11. List any two differences between Paramecium and Euglena.

S.no.	Paramecium	Euglena
1.	Its locomotory organ is cilia.	Its locomotory organ is flagellum.
2	Absence of chloroplast.	Presence of chloroplast.

12. Define Adaptation.

The presence of specific body features, for certain habits, which enable a plant or an animal to live in a particular habitat is called adaptation.

13. Mention the important adaptive features of fish.

Gills are the respiratory organ of fish. It helps to absorb oxygen dissolved in water for breathing and not from atmosphere. It is the adaptive feature of fish.

14. Which part protects the body of fish?

Most of the fishes have slippery scales all over the body. It protects the body of fish.

15. Define – Migration.

When an animal moves its location as the season changes it is said to be Migration.

16. Name any three bird sanctuaries in Tamil Nadu.

Vedanthangal, Kodyakkarai and Koondhankulam are the bird sanctuaries in Tamil Nadu.

17. Form which countries many birds migrate to our vedanthangal?

There are many birds from foreign countries like Siberia and Russia migrate to our Vedanthangal.

6. Health and Hygiene

1. Choose the appropriate answer:

- Our body needs _____ for muscle-building.
 - carbohydrate
 - fat
 - protein**
 - water
- Scurvy is caused due to the deficiency of _____.
 - Vitamin A
 - Vitamin B
 - Vitamin C**
 - Vitamin D
- Calcium is an example of a _____.
 - Carbohydrate
 - Fat
 - Protein
 - Minerals**
- We should include fruits and vegetable in our diet, because _____.
 - they are the best source of carbohydrates.
 - they are the best source of proteins.
 - they are rich in minerals and vitamins.**
 - they have high water content.
- Bacteria are very small _____ microorganism.

- a) Prokaryotic b) Eukaryotic
 - c) protozoa d) Acellular
6. _____ provides more energy than Carbohydrates.
- a) fat b) vitamin
 - c) protein d) water
7. _____ is the highly rich source of protein.
- a) nut b) gram
 - c) chicken d) soya bean
8. Among the Vitamins, which one is the water soluble vitamin?
- a) Vitamin A b) Vitamin B
 - c) Vitamin D d) Vitamin E
9. Beri Beri is caused due to the deficiency of _____
- a) Vitamin C b) Vitamin D
 - c) Vitamin K d) Vitamin B
10. _____ is made in our skin using sunlight.
- a) Vitamin D b) Vitamin C
 - c) Vitamin A d) Vitamin B
11. _____ are required for growth as well as for the regulation of normal body function.
- a) fats b) proteins
 - c) carbohydrates d) minerals
12. 80% of the world production of Moringa leaves is in _____
- a) China b) Germany
 - c) India d) Canada
13. Any human being should take minimum _____ of water everyday.
- a) 2 litres b) 3 litres

c) 8 litres

d) 6 litres

14. _____ is the bacterial disease and it transmits through contamination of wounds with the bacteria.

a) cholera

b) tetanus

c) typhoid

d) pneumonia

15. _____ is an cellular agent that replicates only inside the cells of the other living organism.

a) bacteria

b) protozoa

c) fungi

d) virus

2. True or False

1. There are three main nutrients present in food.

Ans: False. There are six main nutrients present in food.

2. Fats are used as an energy store by our body.

Ans: True

3. All bacteria have flagella.

Ans: False. Not all bacterial have flagella. Only, some bacterial have flagella.

4. Iron helps in the formation of hemoglobin.

Ans: True

5. Virus can grow and multiply outside host.

Ans: False. Virus can grow and multiply inside host.

6. Minerals are required for carrying out various biochemical reactions in our body.

Ans: False. Vitamins are required for carrying out various biochemical reactions in our body.

7. Night blindness is a disease due to deficiency of Vitamin A.

Ans: True.

8. Vitamin D abundantly found in orange and gooseberry.

Ans: False. Vitamin C abundantly found in orange and gooseberry.

9. Sun screen lotion reduces ability to produce Vitamin D. It leads to Vitamin D deficiency diseases.

Ans: True.

10. Iodine maintains strong bones, teeth and helps in clotting of blood.

Ans: False. Calcium maintains strong bones, teeth and helps in clotting of blood,

11. Moringa leaves are rich in the minerals potassium, calcium and iron.

Ans: True

3. Fill in the blanks:

1. Malnutrition leads to **deficiency disease**
2. Iodine deficiency leads to **goitre** in adults.
3. Vitamin D deficiency causes **rickets**
4. Typhoid is transmitted due to contamination of **food** and water.
5. Influenza is a **viral (virus)** disease.
6. We can obtain Carbohydrates in the form of **sugar, starch, dietary fibres**
7. Vitamins are called as **protective** food.
8. The vitamins A,D,E,K are **fat** soluble vitamins.
9. **Nervous weakness** is a disease, due to the deficiency of Vitamin E.
10. Moringa leaves contain powerful anti **oxidants**.
11. Skinny appearance and slow body growth are the symptoms of **Marasmus** disease.
12. **Physical exercise** is strengthening muscles and the cardiovascular system.
13. **Virus** can kill, damage or change the cells and make you sick.
14. Sun screen lotion reduces your skin's ability to produce **Vitamin D** by up to 95%.
15. Gooseberries contain nearly 20 times the vitamin C than orange.
16. India has the **Second** highest number of obese children in the world.

4. Complete the Analogy.

1. Rice: Carbohydrate :: Pulses: **Protein**
2. Vitamin D: Rickets :: Vitamin C: **Scurvy**

3. Iodine: Goitre :: Iron: Anaemia
4. Cholera: Bacteria :: Smallpox: Virus
5. Polio: Virus :: Tetanus: Bacteria
6. Kwashiorkar : Diarrhea :: Marasmus : Slow body growth
7. Synthesis of thyroid hormone : Iodine :: Formation of hemoglobin: iron
8. Fish oil : Vitamin D :: Vegetable oil : Vitamin E
9. Vitamin K: Clotting of blood :: Vitamin E : Fertility
10. Protein : Soya bean :: Fat : Meat

5. Match the following:

1. Vitamin A - a) Rickets
2. Vitamin B - b) Night blindness
3. Vitamin C - c) Sterility
4. Vitamin D - d) Beriberi
5. Vitamin E - e) Scurvy

Ans: 1-b; 2-d; 3-e; 4-a; 5-c

b. Match the following:

1. Carbohydrate - a) Carrying out various biochemical reactions.
2. Proteins - b) Regulation of normal body function.
3. Vitamins - c) energy giving component.
4. Minerals - d) Body building food.

Ans: 1-c; 2-d; 3-a; 4-b

- | c) | Disease | Symptoms |
|----|-------------------|---------------------------|
| 1. | Clotting of blood | - a) Nervous weakness |
| 2. | Infertility | - b) Bleeding gums |
| 3. | Scurvy | - c) Weak, flexible bones |

4. Beri Beri - d) Profuse bleeding after a small injury.
5. Rickets - e) Sterility

Ans: 1-d; 2-e; 3-b; 4-a; 5-c

6. Short Questions & Answer:

1. Write two examples for each of the following.

a) Food items rich in fat. b) Vitamin deficiency diseases.

a) Food items rich in fat, meat, fish, egg yolk, milk.

b) Vitamin deficiency diseases: Night-blindness, Beri Beri, Scurvy, Rickets.

2. Differentiate between carbohydrate and protein.

S.no.	Carbohydrate	Protein
1.	Energy giving component of the food.	It is body building foods.
2	The sources of carbohydrate are nuts, fruits, rice and maize.	The Sources of proteins are pulses, soyabean, nuts, egg and fish.

3. Define the term "Balanced diet".

A diet which contains sufficient amount of various nutrients to ensure good health is called as Balanced diet.

4. Why should the fruits and vegetables not to be washed after cutting?

We should not wash the fruits and vegetables after cutting because the minerals and proteins in the fruits and vegetables will also be washed away.

5. Write any two viral diseases.

Common cold, small pox, polio are the viral diseases.

6. What is the main feature of a microorganism?

Microorganism will be seen with the help of microscope. They are very small in size.

7. Tabulate the vitamins and their corresponding deficiency diseases.

Sl.No.	Property	Deficiency diseases
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1	Vitamin A	Night blindness
2.	Vitamin B	Beri Beri
3.	Vitamin C	Scurvy
4.	Vitamin D	Rickets
5.	Vitamin E	Sterility
6.	Vitamin K	Weakness of bones and teeth.

8. Classify food items according to the major nutrient content in it

Sl.No.	Food items	Major Nutrients
1	Egg	Vitamins and proteins
2.	Banana	Vitamins and Minerals
3.	Fish	Fat and minerals
4.	Apple	Vitamins and carbohydrates
5.	Orange	Vitamins and minerals
6.	Cooked grains	Vitamins and fat
7.	Meat	Vitamins and fat
8.	Fruit Juice	Vitamins and water
9.	Potato	Vitamins and carbohydrate
10.	Sugar	Carbohydrate

9. Define Nutrients.

Chemical constituents of food which give us energy, help to build our body and protect us from diseases are called Nutrients.

10. What are the nutrients obtained from food?

1) Carbohydrate 2) Proteins 3) Fats 4) Vitamins 5) Minerals d) Water

11. List out the types of vitamins.

Vitamins are classified with six major types. They are vitamin A,B,C,D,E and K.

In the type, Vitamin B and C are water soluble vitamins.

Vitamin A,D,E, K are fat soluble vitamins.

12. Sun Screen lotion is not good for our health. Justify.

Sun screen lotion reduces our skin's ability to produce vitamin D upto 95%. It may lead to Vitamin D deficiency. So it is not good for our health.

13. What are the food items that contain minerals?

Green leafy vegetables like spinach, pulses, eggs, milk, fish and fruits are the food items that contain minerals.

14. What are the nutrients present in the Moringa leave?

Moringa leaves are rich in Vitamin A, Vitamin C, Potassium, Calcium, Iron and Protein. It also contains powerful anti-oxidants.

15. How does Balanced diet help our body?

Balanced diet helps our body in the following ways:

- i) An increased capacity to work.
- ii) Good physical and mental health.
- iii) Increased capacity to resist diseases.
- iv) Help in proper growth of the body.

16. Give some mineral deficiency diseases.

Rickets, Osteomalatia, Cretinism in child, Goitre in adult, Anaemia are the mineral deficiency diseases.

17. How does Physical exercise help us?

Physical exercise helps us in the following ways.

- i) Increase in growth and development.
- ii) Strengthening muscles and the cardiovascular system.
- iii) Developing athletic skills.
- iv) Weight loss or maintenance and enjoyment.

18. How are the following bacterial diseases transmitted?

i) Cholera ii) Tetanus iii) Typhoid iv) Tuberculosis

<u>Disease</u>	<u>Mode of Transmission</u>
i) Cholera	Contaminated water
ii) Tetanus	Contamination of wounds with the bacteria.
iii) Typhoid	Contaminated food or water
iv) Tuberculosis	Inhalation of airborne droplets from a sneeze or cough.

19. Name the countries which import Moringa leaves.

China, United States, German, Canada, South Korea and European countries import Moringa leaves.

20. Define health.

Health is a state of complete physical, mental and social well being and not merely absence of diseases. Eating a healthy diet keeps us physically and mentally fit.

21. Name the four major groups of Microbes.

Microbes divided into four major groups. They are Bacteria, Virus, Protozoa, Fungi.

22. Define Disease.

Disease is a definite pathological process having a characteristic set of signs and symptoms.

23. What is Retrovirus?

A virus that contains R.N.A instead of D.N.A is called a Retrovirus.

7. Computer – An Introduction

1. Choose the correct answer:

- Who is the father of Computer?
 - a) martin Luther King
 - b) Graham Bell
 - c) Charlie Chaplin
 - d) Charles Babbage
- Which of the following is another form of computer?
 - a) Blackboard
 - b) Mobile
 - c) Radio
 - d) Book
- When was the first computer introduced?

- a) 1980 b) 1947
- c) **1946** d) 1985
4. Who is the computer's first programmer?
- a) Lady Wellington b) **Augusta ado Lovelace**
- c) Mary Curie d) Mary Comb
5. Pick out the odd one.
- a) Calculator b) Abacus
- c) **Flash card** d) Laptop

2. Fill in the blanks:

1. Data is **unprocessed** information.
2. World's first general purpose computer is **Abacus**
3. Information is **processed** data.
4. Fifth generation computer had **artificial** intelligence.
5. **Analog Computer** is the device that uses Index number.
6. **Smart Phone** is also computer.
7. Computers are available in **different shapes**
8. **Laptops and tablets** are different types of computers.

3. State True or False

1. Computer is an Electronic device.

Ans: True

2. Sir Isaac Newton invented Computer.

Ans: False. Charles Babbage invented computer.

3. Computer can do calculations fast.

Ans: True

4. Match the following:

1. First generation computer - a) Artificial Intelligence
2. Second generation computer - b) Integrated Circuit
3. Third generation computer - c) Vacuum tubes
4. Fourth generation computer - d) Transistor
5. Fifth generation computer - e) Micro processor

Ans: 1-c; 2-d; 3-b; 4-e; 5-a

5. Short Questions & Answers:

1. What is a computer?

Computer is an electronic device that process the data and information according to our needs. We can save the data and convert it into information.

2. Who are the pioneers/forerunners of computer?

Charles Babbage and Augusta Ada Lovelace are the pioneers/forerunners of computer.

3. Write a short note on Data.

Data is the information that has to be processed. Generally, data are in the form of numbers, alphabet and images.

4. Name any four input devices.

Keyboard, Mouse, Scanner and Web camera etc.

5. Differentiate Hardware and Software.

Sl.No	Hardware	Software
1	It is available in the computer.	It is used to run a particular program.
2	It helps the software to work.	It is used for painting, playing in the computer.

6. Explain in detail the Applications of computer.

- i) Computer is used in textile shops for billing purpose.
- ii) It is used in railway station for issuing tickets.

iii) It is used in the banks for multi purpose.

iv) It is used in the ATMs.

v) It is used in post office.

7. Mention the two types of software.

i) Operating software ii) Application software

8. Give any two examples of operating software.

Windows and Linux are operating software.

9. Mention any two output devices.

Printers and monitors are output devices.