

**ANSWER 002**

<b>Structures</b>	<b>Functions</b>
Pancreas	-Produce digestive enzymes. -Produce endocrine glands( insulin and glucagon)
Muscles	-Help in locomotion/ movement. -Help in respiration. -Attachment of bones or fix joints. -Reserve glycogen. -Help in peristalsis. -Maintain blood movement in veins and arteries. -Maintain body posture and balanced. -Contraction of cardiac muscles.
Gills	-Used for gaseous exchange in aquatic organism.

**ANSWER 003**

<b>Structures</b>	<b>Organisms</b>
Antennae	Housefly
Flagella	Euglena
Spores	Fungus
Coiled shell	Snail

### **ANSWER 004**

- The cell surface membrane (pseudopodia) flows around and engulfs the food particle.
- Membrane forms a vesicle containing food particle.
- The vesicle (food vacuole) is digested by enzymes and the products of digestion diffuse to the cytoplasm out of food vacuole.

### **ANSWER 005**

- a)
- Have large surface area.
  - Thin membranes /walls
  - Moist surfaces.
  - Have dense capillary networks for continuous movement (good transport system)
  - Have permeable membrane/walls.
- b) Aerobic respiration has complete combustion of substrate and produces a lot of energy.

### **ANSWER 006**

- a) **Osmosis**: Movement of water molecules from their highest concentration to their lowest concentration through a semi-permeable membrane.
- b) **Diffusion** describes the movement of all kinds of particles. Osmosis describes movement just of water molecules and so it is a special case of diffusion.

### **ANSWER 007**

i)A: Chromosome or chromatid.

B: Centrioles.

C: Spindle fiber

Ii) Anaphase.

iii)-Growth of cells.

-Repair /replacement of cell.

-Asexual reproduction in cells.

-Gamete formation.

### **ANSWER 008**

a) -There are no starch digestion enzymes in the stomach.

-Stomach conditions are acidic and starch digesting enzymes work in alkaline conditions.

b) Every enzyme has its own substrate it acts on.

### **ANSWER 009**

a) Blood passes twice through the heart before it is pumped throughout the body.

b)-Large organisms have more cells

-Produce more waste and need to be removed.

-Too small surface area: volume ratio to rely on diffusion.

-They need internal transport system to move substances around the body.

### **ANSWER 010**

a) Liver

b)-Insulin

-Glucagon

c) - Excess glucose /sugars passes in urine.

-The victim suffers from diabetes.

**ANSWER 011**

<b>Numbers</b>	<b>Names of part</b>
1	Trachea/Wind pipe
2	Intercostal muscle
3	Bronchiole
4	Diaphragm
5	Alveolus/ alveoli/ air sac

**ANSWER 012**

- a) A: Incisors  
 B: Canine.  
 C: Carnassial /premolars/molars
- b) A: Cutting/holding/pulling apart.  
 B: Tearing/killing/holding prey  
 C: Crushing/cutting/grinding/shearing.
- c)i) Up and down.  
 ii) From side to side

**ANSWER 013**

- a) bb  
 b) BB  
 Bb

## SECTION B

### ANSWER 014

a) **Photosynthesis** is process by green plants manufactured their own food by using carbon dioxide and water in presence of sunlight energy.

b) - carbon dioxide  
-Water.

c)  
-Large surface /area to absorb light.  
-Thin and flat to maximize diffusion.  
-Veins support the leaf /network of veins to bring in water and transport away manufactured food.  
-Air spaces to aid diffusion.  
-Stomata to allow gas exchange.  
-Mesophyll cells packed with chloroplasts.  
-Epidermic transparent.  
-Cuticle is water proof.

d)  
-Carbon dioxide concentration.  
-Light intensity  
-Temperature.  
Availability of water.  
-Age of the plants

## ANSWER 015

	<b>Name</b>	<b>Function</b>
A	Cell membrane	Controls exchange in and outside the cell.
B	Nucleus	Controls the cell activities contain genetic information.
C	Cytoplasm	-where chemical reactions take place -Contains organelles -Stores energy and fuel ( food granules)

### b) Similarities:

Both possess: -Cell membrane  
 -Nucleus  
 -Cytoplasm  
 -Carryout respiration

### Differences:

Plant cells posses: -Regular shape.  
 -Cell wall  
 -Chloroplast  
 -Vacuoles

While animal cell do not

- Animal cell has a bulky cytoplasm  
 -Animal cell nucleus is centrally placed.

**ANSWER 016**

	<b>Name</b>	<b>Function</b>
<b>A</b>	Oesophagus/gullet	-Takes food to stomach -Joins mouth to the stomach.
<b>B</b>	Small intestine	Absorb digested food and also produces enzymes for further digestion .
<b>C</b>	Stomach	Stores food /digest food
<b>D</b>	Pancreas	Produces pancreatic juice/produces enzymes
<b>E</b>	Large intestine	-The passage of undigested food . -Absorbs water/stores faeces

**ANSWER 017**

a) **Pollution** is an undesirable change in the physical ,chemical or biological characteristics of our air, land or water that may or will harmfully affect human life or that of desirable species ,our industrial processes , living conditions and cultural assets .or that may or will waste or deteriorate our raw materials resources.

**b) Acid rain:**

- Sulphur dioxide.
- Carbon dioxide
- Nitrogen dioxide .

Are produced during burning of fossil fuels. They dissolve in water in presence of air to form a weak acid.

**Global warming:**

- Carbon dioxide produced by burning fuels.
- Build up in the atmosphere.
- Short wavelength heat rays from the sun penetrate but longer wavelength heat rays are reflected back.
- Earth heats up hence the global warming.

**ANSWER 018**

a) On ejaculation sperm which contain sperms are injected into the vagina. This follows copulation. Sperms swim with the aid of their tails to oviduct. Egg would have been released from ovary to the oviduct. One of the sperms penetrates the eggs using acrosome ; the sperm head enters the cytoplasm and the nucleus of the sperm fuses with that of egg to form a zygote: fertilization,

b) Use of:-Condom.

- Coils/ intra-uterine device.
- Injections.
- Contraceptive pills.
- Diaphragm.
- Withdraw method
- Spermicides
- Vasectomy



## SECTION C

### ANSWER 019

a)

**\* Monosaccharides ( reducing sugars): Simple sugars with general formula (CH<sub>2</sub>O) and soluble in water and also sweet.**

**Examples are glucose, fructose, galactose**

\*Disaccharides: Double sugars formed by condensing of two molecules of monosaccharide sugars.

Examples are sucrose, maltose, and lactose.

\*Polysaccharides: Complex sugars; long chains of monosaccharide molecules, insoluble in water and not sweet.

They are suitable for storage in living cells.

Examples are starch, cellulose and glycogen.

b) **Procedure:**

-Add Benedict solution

-Boil the mixture in the test.

**Observation**

-Colour change from blue solution to brown-red precipitate.

**Conclusion.**

Glucose is present.

## ANSWER 020

a)Composition of blood.

- Blood plasma
- Red blood cells ( erythrocytes)
- White cells ( leucocytes)
- Platelets( thrombocytes)

b)\*Haemoglobin of red blood combine with oxygen to form oxy-haemoglobin in the lung.

\*Dissociate in tissues and supplies oxygen.

c)-Absence of nucleus.

- Biconcave to increase surface.
- Iron of haemoglobin to combine with oxygen.
- Numerous in numbers
- Long lifespan

d)-Animal cells have only cell membrane –exp until it bursts because of not resisting pressure.

-Plant cells have cell wall which affords them resist pressure.