

BOARD OF SECONDARY EDUCATION (TELANGANA)
SUMMATIVE ASSESSMENT – I
TENTH BIOLOGY MODEL PAPER
PAPER – II (ENGLISH VERSION)

Time: 2 hrs. 45 mins.

PART – A & B

Maximum Marks: 40

INSTRUCTIONS:

- i) 15 minutes allotted to read question paper. 2.30 Hours allotted to write answers.
- ii) PART – A must be answered in a separate answer sheet.
- iii) Students can take PART – A (Question Paper) with them.
- iv) PART – B should be tag to the answer sheet and give them to invigilator.

Time: 2 hrs.

PART – A

Marks: 35

SECTION – I

Note: i) Answer the following questions.

ii) Each question carries ONE mark.

7 × 1 = 7

1. Write the equation of photosynthesis?
2. What is energy currency?
3. What happened if pseudopodia absent in Amoeba?
4. What is the role of KOH in the experiment of CO₂ essential for photosynthesis?
5. Describe the excretion.
6. Describe the uses of thrombocytes.

7.  What is 'A' in the diagram?

SECTION – II

Note: i) Answer the following questions.

ii) Each question carries TWO marks.

6 × 2 = 12

8. What is the role of saliva in food digestion?
9. To keep your kidneys healthy for long period, what questions will you ask a Nephrologist/ Urologist?
10. What do you want to compare with the transportation in blood vessels in man?
11. Describe the flow chart of the 'pathway of air'?
12. Deepak said that 'Nephrons are structural – functional units of kidneys'. How will you support him?
13. Write the uses of fermentation in our daily life?

SECTION – III

Note: i) Answer the following questions.

ii) Each question carries FOUR marks.

iii) Internal choice is there.

4 × 4 = 16

14. What is malnutrition? Explain some nutrition deficiency diseases?

(OR)

Write differences between a) Xylem – Phloem b) Systole – Diastole.

15. Describe the structure of renal tubule with neatly labelled diagram?

(OR)

Draw a block diagram showing events in respiration. Write what you understand about cellular respiration?

16. What process you follow in your laboratory to study presence of starch in leaves?

(OR)

What are your observations in combustion of sugar activity?

17. Collect and write the information about respiratory diseases because of pollution and tobacco.

(OR)

Observe the table and write the answers to the questions given below.

Alkaloid	Plant	Part	Uses
1. Quinine	Cinchona officinalis	Bark	Antimalarial drug
2. Morphine	Papavar Somniferum	Fruit	Pain killer
3. Reserpine	Rauvolfia Serpentina	Root	Medicine for Snake bite
4. Caffeine	Coffea Arabica	Seed	Central nervous system Stimulate

Questions:

i) Which alkaloid is used for pain killer?

ii) What is use of Caffeine?

iii) What is the scientific name of Reserpine produced plant?

iv) Which part of plant to use for anti malarial drug?

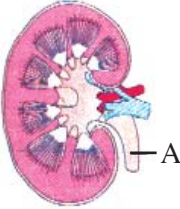
Time: 30 Minutes

PART – B

Marks: 5

INSTRUCTIONS:

- i) Answer ALL the questions.
- ii) Each question carries $\frac{1}{2}$ mark.
- iii) Marks will not be awarded in any case of over-writing, rewritten or erased answers.
- iv) Write the CAPITAL LETTER (A, B, C, D) showing the correct answer for the following questions in the brackets provided against them. $10 \times \frac{1}{2} = 5$

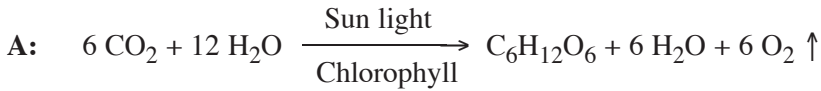
1. The digestive juice without enzyme is ()
A) Bile B) Gastric Juice
C) Pancreatic juice D) Saliva
2. Which vitamin synthesised by bacteria present in intestine? ()
A) Vit. A B) Vit. D C) Vit. E D) Vit. K
3. Cluster of air sac in lungs are called ()
A) Alveolus B) Bronchus C) Branchioles D) Air spaces
4. The part acts as major role in ladies ()
A) Diaphragm B) Ribs C) Lungs D) All
5. B.P. measurement instrument is ()
A) Manometer B) Spygmanometer
C) Hygrometer D) All
6. Which part in heart has deoxygenated blood? ()
A) Right atrium B) Right ventricle
C) Left atrium D) A & D
7. Rubber is produced from the plant part ... ()
A) Stem B) Bark C) Latex D) Resin
8.  Identify the 'A' in the figure. ()
A) Cortex B) Medulla C) Ureter D) Nephron
9. The excretory organ in cockroach ()
A) Malphigian tubules B) Raphids C) Ureters D) Nephridia
10. Diabetes is related to this gland. ()
A) Thyroid B) Pancreas C) Adrenal D) Pituitary

ANSWERS

PART – A

SECTION – I

1. Write the equation of photosynthesis?



2. What is energy currency?

A: From the break down of glucose the energy is released and stored up in a special compound, known as ATP (Adenosine triphosphate). It is called as 'energy currency' or 'chemical energy'.

3. What happened if pseudopodia absent in Amoeba?

A: Amoeba takes in food using pseudopodia of the cell surface which fuse over the food particle forming food vacuole. If it absent it can't take food and it will die.

4. What is the role of KOH in the experiment of CO₂ essential for photosynthesis?

A: KOH absorbs CO₂ in the bottle.

5. Describe the excretion?

A: Due to metabolism several harmful excretory products are formed, the process of removing toxic waste from the body is called 'excretion'.

6. Describe the uses of thrombocytes?

- A:
- ◆ Platelets act an important role in blood clotting.
 - ◆ When the blood healing out, the platelets release, several factors to blood clotting. The injury form a plug.
 - ◆ This reduces the loss of blood to some extent.

7.  What is 'A' in the diagram?

A: 'A' is 'Granum'.

SECTION – II

6 × 2 = 12

8. What is the role of saliva in food digestion?

A: ◆ Saliva is secreted by three pairs of salivary glands present in the mouth.

◆ Saliva has amylase enzyme, it converts starch into maltose. $\text{Starch} \xrightarrow{\text{amylase}} \text{Maltose}$.

◆ The food is mixed thoroughly with saliva and moved around the mouth while chewing by the tongue.

9. To keep your kidneys healthy for long period, what questions will you ask a nephrologist/ urologist?

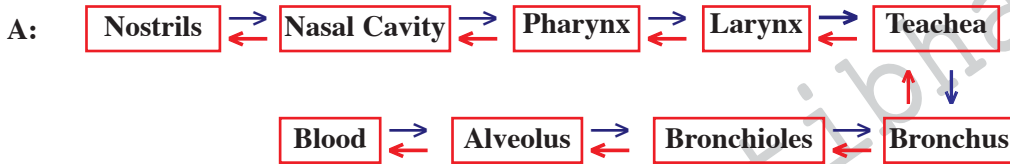
- A:
- ◆ What shall I do to keep my kidneys healthy for a long time?
 - ◆ What are the functions of kidney?
 - ◆ How can I prevent formation of stones in kidney?
 - ◆ What are the symptoms of kidney failure?

10. What do you want to compare with the transportation in blood vessels in man?

A: I want to compare the transportation like a bore pump in our house. It has motor, pipe and water.

- ◆ Motor pumps the water like our heart pumping the blood.
- ◆ Pipes acts as our blood vessels and,
- ◆ Water moving from the pipes, like blood in blood vessels.

11. Describe the flow chart of the 'pathway of air'.



12. Deepak said that 'Nephrons are structural – functional units of kidneys'. How will you support him?

- A:
- ◆ Every kidney formed by the nephrons more than one million. So it is structural unit.
 - ◆ Kidney's main function – excrete the waste material from the blood. So it is functional unit.

13. Write the uses of fermentation in our daily life?

- A:
- ◆ For making bread in the bakery.
 - ◆ For making Idly, dosa.
 - ◆ For preparation of alcohol by fruit ripening is used fermentation.

SECTION – III

14. What is malnutrition? Explain some nutrition deficiency diseases?

A: Eating of food that does not have one or more than one nutrients is required amount is known as malnutrition. Poor health, willfull starvation, lack of awareness of nutritional habits, socio – economic factors are all the reasons for malnutrition.

Malnutrition is 3 types:

- 1) Calorie malnutrition,
- 2) Protein malnutrition,
- 3) Protein calorie malnutrition.

1) **Kwashiorkor disease:** This is due to protein deficiency diet.

- ◆ Body parts become swollen due to accumulation of water in the inter cellular spaces.

Symptoms: Poor muscle development, swollen legs, fluffy face, diarrhoea, dry skin.

2) **Marasmus:** This is due to deficiency of both proteins – calories. Generally this disease occurs when there is an immediate second pregnancy or repeated child births.

Symptoms: Lean – weak, Swelling limbs, week muscles, dry skin, diarrhoea etc.

3) **Obesity:** This is due to over eating and excess of energy intake. It is a big health hazard. This children will be target to many diseases like – diabetes, cardio vascular, renal and gallbladder problems.

(OR)

Q. Write differences between:

a) Xylem – Phloem b) Systole – Diastole

a) A:	Xylem	Phloem
	1. It transports water and minerals from roots to the epical parts of the plant.	1. It transports food material from the leaves to growing parts of the plant.
	2. Xylem consists of tracheids, vessels, xylem fibers and xylem parenchyma.	2. Phloem consists of sieve tubes, sieve cell, companion cells, phloem fibres, and phloem parenchyma.
	3. Only xylem parenchyma is living.	3. Sieve tubes, sieve cell, companion cells and phloem parenchyma are living.
	4. Tracheids, vessels, xylem fibres are dead tissues.	4. Phloem fibres are dead tissues.
	5. Xylem gives mechanical strength to the plant.	5. It doesn't give the mechanical strength.
	6. Xylem occupies the center of the vascular bundle.	6. Phloem occurs outside of the vascular bundle.

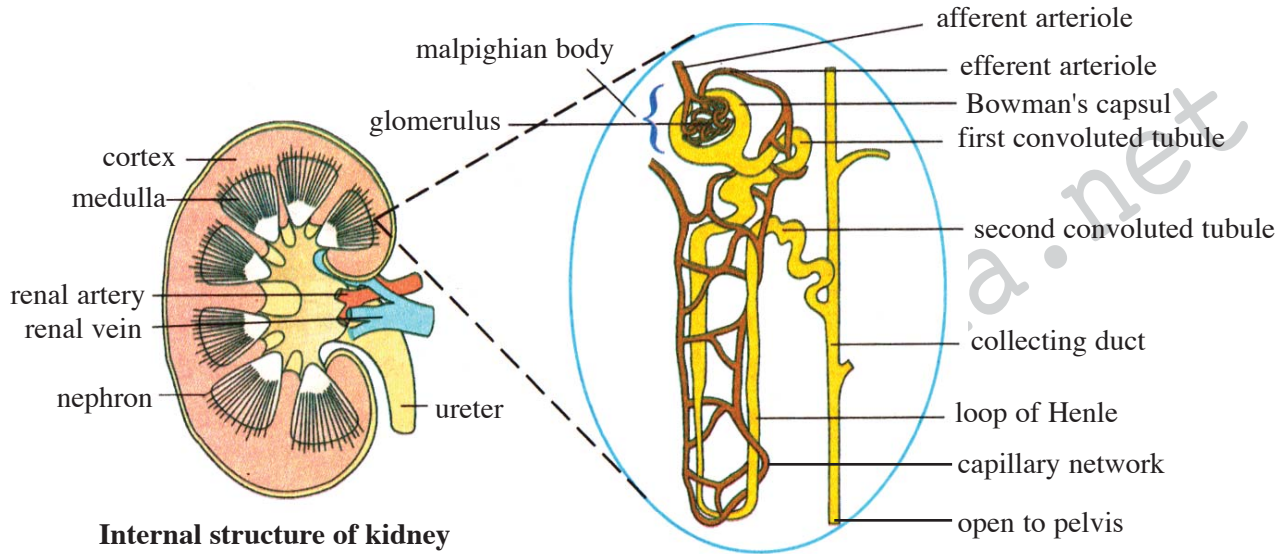
b) A:	Systole	Diastole
	1. It is the contraction phase of the heart.	1. It is the relaxation phase of the heart.
	2. During systole blood circulated through heart.	2. During diastole blood flows into all the body parts.
	3. Its pressure is higher and occurs during ventricular contraction.	3. Its pressure is lower and occurs during ventricular expansion.

15. Describe the structure of renal tubule with neatly labelled diagram.

A: Structure of nephron:

- ◆ Nephron is the structural – functional unit of kidney.
- ◆ It has specialised tubular structure made by proximal convoluted tubular, 'v' – shaped tube called loop of henley and distal convoluted tube.
- ◆ The nephron is surrounded by capillaries called peritubular capillaries that arise from the elferent arterioles.
- ◆ The substances essential for the body are reabsorbed from the tubules into the peritubular capillaries and the unwanted or toxic molecules are secreted into the lumen of the nephron.
- ◆ Water, Na⁺, K ions, urea, phosphates, citrate as well as organic molecules like glucose and amino acids are reabsorbed from the proximal convoluted tubule (PCT).
- ◆ In addition PCT is the site of formation of ammonium and also revolves the secretion of excess medicines from blood.
- ◆ The filtrate then enters into the descending loop of henle, where absorption of water from the filtrate to the tissues takes place. This water is transferred by the cells to the capillaries surrounding them.
- ◆ The filtrate then travels through the ascending loop of henle which is permeable to water. Hence only ions diffuse out into the surrounding cells.
- ◆ While passing through distal convoluted tubule (DCT), the surrounding tissues further facilitate the exchange of water and ions from the filtrate to capillaries.
- ◆ The tissues also absorbs the excess potassium and H⁺ ions from the capillaries and secrete them into the filtrate.

- ◆ The filtrate from several nephrons is then collected into the common bladder as urine.



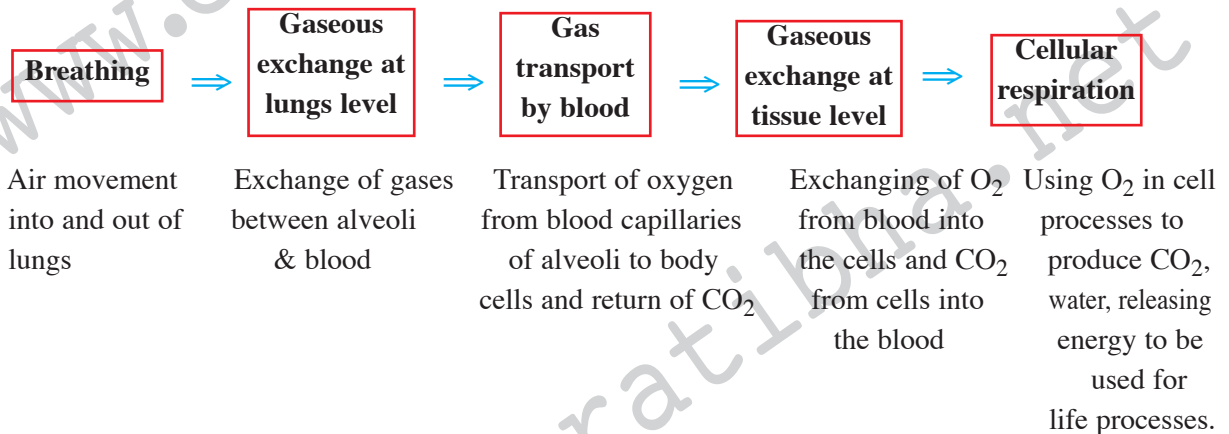
Internal structure of kidney

Structure of nephron

(OR)

Q. Draw a block diagram showing events in respiration write, what you understand about cellular respiration?

A: Events in respiration:



Cellular respiration:

- ◆ All living cells must carry out cellular respiration.
- ◆ During respiration, energy is produced when the glucose or fatty acids are oxidised in the cells. As this process occurs in the cells this is called "Cellular respiration".
- ◆ It can be in the presence of O₂ that is "aerobic respiration" or in its absence that is "anaerobic respiration" (fermentation).
- ◆ Cellular respiration in prokaryotic cells like that of bacteria occurs within the cytoplasm.
- ◆ In Eukaryotic cells cytoplasm and mitochondria are the site of cellular respiration.
- ◆ The complete break down of a sugar molecule with release of all its available energy involves a series of different chemical reactions.
- ◆ The energy released in cellular respiration is stored in a special compound called ATP.
- ◆ ATP is utilised for carrying out other functions in the cell.

16. What process you follow in your laboratory to study presence of starch in leaves?

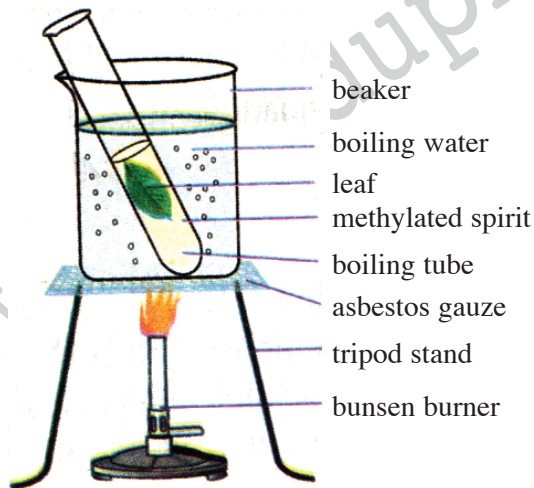
A: **Apparatus required:** Tripod stand, beaker, test tube, water, Spirit lamp, Petridish, Methylated spirit dropper, Iodine.

Procedure:

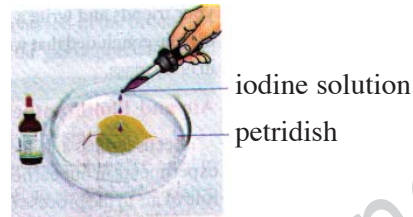
- ◆ Take a leaf of a plant which has soft thin leaves and well exposed to sun light.
- ◆ Boil the leaf in methylated spirit over a water bath till it becomes pale – white due to the removal of chlorophyll, and observe the leaf.
- ◆ Spread the leaf in a dish and put a few drops of tincture of iodine on it.
- ◆ The presence of starch will be indicated by a blue – black colour.

Precautions:

- ◆ Don't boil the methylated spirit test tube directly on flame.
- ◆ Boil the water bath with low flame.



Leaf boiling in methylated spirit



Iodine test

(OR)

Q. What are your observations in combustion of Sugar activity?

A: **Observations in Combustion of Sugar:**

- ◆ When sugar is heated first it chars and later burns producing flames.
- ◆ When sugar combusted CO_2 and H_2O are produced.
- ◆ Energy is also released in the form of heat and it released at once.
- ◆ We cannot control the combustion of sugar and also intermediate products are not formed.
- ◆ We can combust sugar in the absence of water and also enzymes are not required.
- ◆ Due to combustion of sugar heat energy is released into the atmosphere and we can't store it for further use.

17. Collect and write the information about respiratory diseases because of pollution, tobacco.

A: **Respiratory diseases because pollution:**

- ◆ Irritation of eyes, nose, mouth, and throat.
- ◆ Headache, nausea and dizziness.
- ◆ Respiratory symptoms such as coughing and running nose.

◆ Respiratory and long diseases including

- a) Asthma attacks
- b) Chronic Obstructive Pulmonary Disease
- c) Reduced lung function
- d) Pulmonary cancer caused by a series of carcinogen chemicals that through inhalation.

(OR)

Q. Observe the table and write the answer to the questions given below.

Alkaloid	Plant	Part	Uses
1. Quinine	Cinchona officinalis	Bark	Antimalarial drug
2. Morphine	Papavar Somniferum	Fruit	Pain killer
3. Reserpine	Rauvolfia Serpentina	Root	Medicine for Snake bite
4. Caffeine	Coffea Arabica	Seed	Central nervous system Stimulate

Questions:

i) Which alkaloid is used for pain killer?

A: Morphine.

ii) What is use for Caffeine?

A: Stimulate the central nervous system.

iii) What is the scientific name of Reserpine produced plant?

A: Rauvolfia serpentina.

iv) Which part of plant used for antimalarial drug?

A: Bark.

PART – B

ANSWERS

1-A; 2-D; 3-A; 4-B; 5-B; 6-D; 7-C; 8-C; 9-A; 10-B.

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