



## **BIOLOGY**

### **BOOKS - SURA BIOLOGY (TAMIL ENGLISH)**

### **SELF-EVALUATION TEST 4 MARKS**

**Answer Any Questions Physics**

**1. Differentiate the eye defects : Myopia and  
Hypermetropia .**



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2. Distinguish real and ideal gases.



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3. A piece of wire of resistance 10 ohm is drawn out so that its length is increased to three times its original length. Calculate the new resistance.



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4. (a) Define one mole of a substance.

(b) What is ideal gas?



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5. Write any three features of natural and artificial radioactivity.



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6. Why does a metal bar appear hotter than a wooden bar at the same temperature ? Equivalently it also appears cooler than wooden bar if they are both colder than room temperature .



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7. Distinguish between fissionable & fertile material.



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**8.** State the laws of reflection.



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**9.** Give the applications of universal law gravitation .



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**10.** Find the effective resistance of series connection of parallel resistors.



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**11.** Explain the types of lens .



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**12. (a)** What is meant by electric current?

**(b)** Name and define its unit.



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**13.** Mass number of a radioactive element is 232 and its atomic number is 90. When this element undergoes certain nuclear reactions, it transforms into an isotope of lead with a mass number 208 and an atomic number 82. Determine the number of alpha and beta decay that can occur.



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14. A pistol fired a bullet of mass 50 g triggered with a speed  $250\text{ms}^{-1}$  penetrated into a wooden plank comes to rest at 1 ms. Find the impulse and average force offered by the planks .



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15. Mention two cases in which there is no Doppler effect in sound?



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**16.** (a) Write the two factors which lead to loss of neutrons.

(ii) Convert 1Bq into curie.



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**17.** An observer approaches a stationary sound source 1000 Hz at twice the speed of sound.

What frequency does the observer hear?



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**18.** A metal rod 6.522 m long at 285K expands by 0.576 m at 363K. Find the coefficient of linear expansion of the metal.



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**19.** Draw a ray diagram to show the image formed by a convex lens when the object is placed between F and 2F.



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**20.** Two observers are stationed in two boats 4.5 km apart. A sound signal sent by one, under water, reaches the other after 3 seconds. What is the speed of sound in the water?



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**21.** State Ohm's law .



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**22.** The far position of a myopic person is 90 cm in front off the eye. What is the nature and power of the lens required to correct the problem?



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**23.** Differentiate mass and weight.



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**24.** State Newton's laws of motion.



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**Answer Any Questions Chemistry**

**1.** Differentiate soaps and detergents .



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2. Differentiate irreversible and reversible reactions.



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3. A is a reddish brown metal which combines with  $O_2$  at  $< 1370K$  gives B, a black coloured compound. At a temperature  $> 1370 K$ , A gives C which is red in colour. Find A, B and C with reaction.



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4. (a) Explain the reaction of carboxylic acids on metals.

(b) What is micelles?



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5. Define Hydrated salt .



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6. Give the applications of Avogadro's hypothesis .



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7. Explain the combustion zone in the extraction of iron from its ore ? Write the chemical reaction occurring in that zone .



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8. 7.5 litre of ethanol is present in 15 litre of aqueous solution of ethanol . Calculate Volume percent of ethanol solution .



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9. Calculate the number of water molecules present in one drop of water which weights 0.18 g.



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10. A solution is prepared by dissolving 45g of sugar in 180g of water. Calculate the mass percentage of solute.



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11. An organic compound of molecule formula  $C_2H_6O$  (A) which is used as an antifreeze when oxidised with  $K_2Cr_2O_7 / H^+$  gives compound (B) which is used for making Vinegar . Identify compound (A) and (B) . Write the reactions involved .



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**12.** Write some solubility substances in water at  $25^{\circ}C$ .



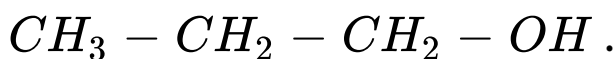
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**13.** Along with cryolite and alumina, another substance is added to the electrolyte mixture. Name the substance and give one reason for the addition.



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14. Arrive at , systematically , the IUPAC name of the compound :



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15. How many grams are there in the following ?

3 moles of chlorine molecule ,  $Cl_2$



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**16.** A solid compound 'A' decomposes on heating into 'B' and a gas 'C'. On passing the gas 'C' through water, it becomes acidic. Identify A, B and C.



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**17. (a)** What is activation energy?

**(b)** Powdered calcium carbonate reacts more

readily with hydrochloric acid than marble chips. Give reasons.



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**18.** Give the salient features of " Modern atomic theory ".



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**19.** Silicon forms a compound with chlorine in which 5.6 g of silicon is combined with 21.3 g

of chlorine .Calculate the formula of the compound .

( atomic mass Si = 28 : Cl = 35.5).



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20. What is aqueous and non-aqueous solution? Give an example.



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21. How is Bauxite are concentrated ?



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**22.** List any two differences between atom and molecules.



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**23.** Metal A belongs to period 3 and group 13. A in red hot condition reacts with steam to form B. A with strong alkali forms C. find A, B and C with reactions.





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**24.** The gases hydrogen and chlorine do not react with each other even if kept together for a long time. However, in the presence of sun light, they readily combine. What does actually happen?



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**25.** Write the characteristics of hydrocarbons .



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## Answer Any Questions Biology

1. In angiosperms, the pollen germinates to produce pollen tube that carries two gametes.

What is the purpose of carrying two gametes when single gamete can fertilize the egg?



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2. List the functions of mitochondria.



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**3. List out the parasitic adaptations in leech.**



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**4. Voluntary and involuntary actions.**



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5. (a) Write the differences between endocrine and exocrine gland.

(b) Why are thyroid hormones referred as personality hormone?



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6. Rani fell from her bike and had a had injury. She was hospitalized and discharged later. What do you think she could have done to save herself from this accident?





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7. Raman went to a garden. He saw that the stem of the Banyan tree becomes thicker every year whereas such a change is not seen in a coconut tree. Can you give a explanation for this.



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8. (a) What is myelin sheath?

(b) How are neurons classified based on

function?



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**9.** Sanjay is sitting in the exam hall. Before the start of the exam, he sweats a lot, with increased rate of heart beat. Why does this condition occur?



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**10.** Fermentation is a process applicable to Bakery and Breweries. What is the scientific explanation for this?



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**11.** What causes the opening and closing of guard cells of stomata during transpiration?



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**12. (a)** What is diaphragm?

(b) What is the significance of caecum in rabbit?



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**13.** How does binary fission differ from multiple fission ?



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**14.** Differentiate simple reflexes and conditional reflexes.



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**15.** (a) What is imbibition?

(b) Define pulse.



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**16.** Write a note on crop.



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**17.** Draw a diagram to show the location of Adrenal gland.



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**18.** In a bisexual flower , the stamens have been removed .Is it possible for this flower to profuce seeds .



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**19.** (i) Draw and label the structure of oxysomes.

(ii) What is respiratory quotient?



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**20.** Arjun is studying in tenth standard. He was down with fever and went to meet the doctor.

As he went to the clinic he saw a patient undergoing treatment for severe leech bite.

Being curious, Arjun asked the doctor why

leech bite was not felt as soon as it attaches to the skin? What would have been the reply given by the doctor?



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21. Where are estrogens produced? What is the role of estrogens in the human body?



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**22.** Draw a transverse section of dicot leaf and label the parts .



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**23.** Draw a Gynoecium and label the parts.



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**24.** Differentiate between systemic circulation and pulmonary circulation ?



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25. A pure tall plant (TT) is crossed with pure dwarf plant (tt), What would be the  $F_1$  and  $F_2$  generations? Explain.



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26. Once a person starts taking drugs or alcohol it is difficult to get rid of the habit.

Why ?





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27. List the objective of animals breeding?



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28. What is the importance of rainwater harvesting?



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**29.** (a) If you are an artist, which computer applications will be relevant for you?

(b) Which is important-Hardware or software?



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**30.** Write a short note on editor and its types?



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**31.** A family has 3 three cars and can afford to buy fuel. They prefer to go out independently. Is it right to suggest car pooling for such people. Justify.



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**32.** How does insulin deficiency occur ?



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**33.** Octopus, cockroach and frog all have eyes.

Can we group these animals together to establish a common evolutionary origin. Justify your answer.



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**34.** How does insulin deficiency occur ?



**Watch Video Solution**

**35.** Octopus, cockroach and frog all have eyes.

Can we group these animals together to establish a common evolutionary origin. Justify your answer.



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**36.** What are the consequences of deforestation?



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**37. (a)** State the law of purity of gametes or the law of segregation.

**(b)** Differentiate diploid and haploid condition.



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**38.** Write a note on 'Visual Communication Device'.



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**39.** A very small population of a species faces a greater thread of extinction than a larger population. Provide a suitable genetic explanation.



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**40.** How will you prevent soil erosion?



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**41. (a)** What is Goldilock zone for life?

**(b)** Explain chemical evolution of life.



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**42.** Why do all the gametes formed in human females have an X- chromosome?



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**43.** Define Genetic engineering.



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**44.** The degenerated wing of a Kiwi is an acquired character. Why is it an acquired character?



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**45.** (a) Differentiate Non-renewable and Renewable energy sources.

(b) List some ill effects of e-wastes.





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**46.** Under which conditions does the law of independent assortment hold good and why?



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**47.** How is a cancer cell different from a normal cell ?



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**48.** (i) How do you differentiate Homologous organs from Analogous organs.

(ii) Why are the rings of cartilage found in trachea of rabbit ?



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**49.** How are stem cells useful in regenerative process ?



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