

## **Guide lines to the Teachers**

1. Answer should be relevant and adequate to the questions.
2. Whether scientific terminology is used or not.
3. Whether sequence is followed in writing answers.
4. Answers should come out of their experiences and critical thinking.
5. Answers should carry the impression that they have understood the concepts.
6. Discourage the rote memory answers.
7. Give the importance to the creative thinking.
8. Whether the targeted academic standards are achieved or not.
9. Even the rough diagrams must be considered where diagrams are asked.
10. Ignore the spelling and grammatical mistakes.
11. Answer should reflect the impression that student has carried out the experiment in their schools.
12. Teacher should have discretion and spontaneity.
13. Should give importance to the questions of the answer not lengthy answer (no. of points).
14. Have they linked up the scientific concepts with daily life situations.

### **Guide lines on writing Essay type of Questions**

- Read the questions with comprehension before attempting the answer.
- Write the answers after the indicators given for that particular academic standards.
- Answer should be relevant to the questions.
- While writing Essay type of answers use of scientific terms/keywords.
- Try to answer the questions on their own.
- Write the Essay type of answers in prescribed sentences.
- The answer should be Readable.
- The diagram should Reflect the concept
- This is no need of drawing artistic diagram.
- Essay type of question should have introductory part, sequential order, key words/scientific terms analysis and conclusion.
- The answer should be logical and sequential.
- Academic standard II question requires logical reasoning.
- Basing on the question answer should reflect his own experience.
- In Essay type answers if there is need of explain the concept with diagram he/she should diagram thought it may not be asked in question.

## **Indicators**

### **ASI Conceptual Understanding**

- (i) Explain : (i) Explaining with diagram
  - (ii) Diagram should reflect the concept
  - (iii) Explaining flow chart with sequence
- (ii) Cite Example : Describing with relevant examples/either from text book/daily life examples
- (iii) Comparison : Similarities difference in tabular form
- (iv) Reason : Logical and Rational Reasoning
- (v) Classification : Basing on characters functions in sequential order

### **II. Asking question hypothesis**

Questions to be asked:

- (1) To understand to the concept
- (2) To solve the doubts
- (3) To discussion
- (4) To image
- (5) To analyze

### **III. Experiments and field investigation**

- (i) Experiments have to be performed on his own
- (ii) Arrangement apparatus – equipments in sequence – alternate apparatus
- (iii) Procedure - Observation
- (iv) Visiting the field
- (v) preparation of report basing on observation

**IV. Project – Collecting information**

- (i) Collecting information through questionnaire, interview, internet
- (ii) Collected information should be arranged in tabular form
- (iii) analysis of information and data
- (iv) Project report

**V. Drawing and model making**

- (i) Understood concept should be presented in different forms through diagrams, flow chart, graphs and models.

**VI. Application/Appreciation/Authentic sense/Biodiversity**

Application in daily life situation.

## SA II – Biology – Analysis of Questions – indicators

Q.No.	Key Points		Indicators	Allotted Marks
1	<p>The Zygote will develop into an embryonic plant within the Ovule. Fertilization of the fusion nucleus stimulates the formation of a new tissue the Endosperm in which food materials are stored.</p> <p>Union of one sperm with the egg, and second sperm with the fusion nucleus is called double fertilization.</p>		<ul style="list-style-type: none"> <li>• Diagram, Secondary nucleus, egg cells, male nuclei, pollen tube</li> <li>• Labelling</li> <li>• Description</li> </ul>	<p>* 1</p> <p>* 1</p> <p>* 2</p>
(or) Q.No. (2)	<p>Each nerve cell consists of a cell body with a prominent nucleus. There are fine projections mainly of two types extending from the cell body of the Nerve cell. The small projections are dendrites while a long one that extends to different parts of the body parts. The axon is surrounded by a specialized insulatory sheath called myelin sheath. This sheath interrupted at regular intervals called nodes of ranvier.</p>		<ul style="list-style-type: none"> <li>• Check cell diagram, onion peel cell diagram &amp; Neuron.</li> <li>• Parts: cell body, Dendrites, Axon, Nucleus, Nissil granules, Myelin sheath</li> <li>• Onion peel cells, cheek cell diagrams</li> </ul>	<p>* 1</p> <p>* ½</p> <p>* ½</p> <p>* 2</p>
<b>Q.No.3</b>	<b>External Fertilization</b>	<b>Internal Fertilization</b>		
	<p>If Union of male and female gametes takes place outside the female body is called External fertilization.</p> <ul style="list-style-type: none"> <li>• In aguatic animals it takes place.</li> <li>• In frog External fertilization takes place.</li> </ul>	<p>If union of male and female gametes takes place inside the body of a female is called Internal fertilization.</p> <ul style="list-style-type: none"> <li>• In terrestrial animals it takes place</li> <li>• In Lizards, Ares and mammals internal fertilization takes place</li> </ul>	<p>Concept related</p> <p>Tabular form</p> <p>Site examples</p> <p>Using scientific words</p> <p>Co-relation</p> <p>Description:-External and Internal fertilization</p>	2 marks

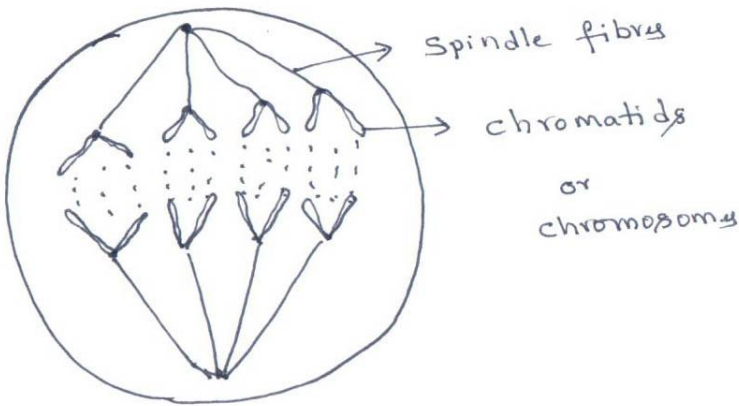
	<b>Layering</b>	<b>Crafting</b>		
	<p>In layering a branch of the plant with at least one node is bent towards the ground and a part of it is covered with moist soil leaving the tip of the branch exposed above the ground. After some time roots develop from the buried branch. Ex:-Neerium, Hibiscus</p>	<p>In grafting two plants are jointed together in such a way that two stems join and grow as a single plant. Ex:- Mango, citrus, apple and rose.</p>	Description:- Layering and crafting examples	2 marks
<b>Or</b> <b>Q.No.</b> <b>(2)</b>	<ul style="list-style-type: none"> <li>• Decrease in Adrenalin levels leads to a normal position.</li> <li>• In puberty (13-14 years) gonads mature and release hormones (or) In the presence of Oestrogen and Testosterone hormones.</li> <li>• Insulin controls sugar levels in blood Or Insulin in blood converts glucose to glycogen.</li> <li>• Pituitary gland hormones controls the functions of other Endocrine glands Or It acts as a bridge between Endocrine and nervous system.</li> </ul>	<p>Concept related Using scientific terms Description:- Adrenalin Description:- Puberty</p> <p>Description:- Insulin</p> <p>Description:- Pituitary gland</p>		<p>1 mark</p> <p>1 mark</p> <p>1 mark</p> <p>1 mark</p>

Q.No.	Key Points	Indicators	Allotted Marks
Q.No.3	<ul style="list-style-type: none"> <li>• Aim:- Action of saliva on flour (ata)</li> <li>• Materials required:- Pinch of flour, test tubes watch glasses, dilute tincture, iodine, saliva.</li> </ul> <p>Procedure:- Take a test tube half filled with water and add a pinch of flour to it. Shake the test tube well till the flour gets mixed. Take a few drops of this mixture in a watch glass and test for the presence of starch by putting a drop of dilute tincture iodine in it a blue black confirms the presence of starch. Now again dissolve a pinch of flour into half-filled water in a test tube. Now divide the mixture into two equal halves by transferring it to another test tube. Note that both test tubes have the same amount of the solutions. Add a tea spoon of saliva to one of the test tube after sometime add a drop of dilute iodine solution to test tube containing the solution. <u>Observation</u>:- The solution of the test tube to which saliva is added shows changes as starch is converted to sugar. There is no colour change in the other test tube to which saliva is not added. (In reference of results) – The enzyme amylase in saliva breaks down the starch molecules into smaller sub units usually into sugars.</p>	<ul style="list-style-type: none"> <li>• Aim</li> <li>• Materials</li> <li>• Procedure – in own words</li> <li>• Description</li> <li>• Result</li> </ul>	<p>½ marks</p> <p>½ marks</p> <p>2 marks</p> <p>½ marks</p> <p>½ marks</p>
<b>(or)</b> Q.No. 3	<p>A good sample of mould require 4-10 days to form spores place the bread in a plastic bag, sprinkle water over it to have dampness then seal the bag, leaving some air inside. Place the bag in a dark, warm place mould will grow best in a moist environment. Mould grows on bread in 2-3 days. Place a drop of water in the centre of the slide scrap very little of the mould and place it on the drop of water. Take cover slip, carefully lower it over the drop, use the corner of a tissue paper to blot</p>	<ul style="list-style-type: none"> <li>• Preparation Rhizopus growing on bread.</li> <li>• Procedure</li> <li>• Slide Preparation</li> </ul>	<p>1 mark</p> <p>2 marks</p> <p>1 mark</p>

	up excess water. View the slide with a compound micro-scope. Observation:- Finding thread like projection called Hyphae and thin knob like structures called sporangies and minute spores.			
<b>Or</b> <b>Q.No.4</b>	(i) Auxins, Cytokinins and Gibberellins play an important role in the growth of the plant.		• Mention any four plant hormones and its functions	1 mark
	(ii) Gibberellins helps in breaking seed dormancy where as Abscisic acid promotes seed dormancy		• Need some explanation about growth, dormancy inhibition etc words.	1 mark
	(iii) Abscisic acid inhibits the growth of the plant.			1 mark
	(iv) Ethylene helps in ripening of fruits			1 mark
<b>Q.No.4</b> <b>(or)</b>	The glands which secretes the chemical substances are called "Hormones" Endocrine glands secretes "Hormones" (i) Pitutary gland produces gonado trophin (ii) Somato trophin responsible for growth in human beings. (iii) Adrenalin harmone is responsible for increase in blood pressure and breath rate where afraid of something. (iv) Pitutary gland is called master gland which controls the functions of all other endocrine glands.		• Description about endocrine glands	1 mark 1 mark 1 mark 1 mark
<b>Q.No.5</b>	Afferent Nerve	Efferent Nerve	• Tabular form	2 marks
	1) Afferent nerve is also called sensory nerve 2) In coming nerve 3) Carries impulses to spinal card or brain	1) Efferent nerve is also called motor nerve 2) Outgoing nerve 3) Carries responses to body parts or glands		



<b>Q.No.6</b>	In Humans blood flows twice through the heart, So human heart is called double circuit heart. Once between heart and lungs this is called pulmonary circuit. Second flow between heart to body parts and to heart this is called systamic circuit.	• Diagram rough	2 marks	
<b>Q.No.7</b>	Meiosis cell division helps in the maintain constant number of chromosomes in organisms. If this division doesn't takes place the number of chromosomes doubles in the daughter organisms.' This leads to the formation of multiploid organisms and may lead to the death of the organisms		1 mark  1 mark	
<b>Q.No.8</b>	Tabular Form			
	Name of the teeth	Number	Function	
	1. Inscissors	8	Cutting	
	2. Canine	4	Tearing	
	3. Premalars	8		
	4. Molars	12	grinding	
<b>Q.No.9</b>	<p style="text-align: center;">Life cycle of flowering plant.</p>		Content related Sequential order labelling	2 marks

<b>Q.No.10</b>	<p>Following moral values          At the time of blood transfusion blood (donor) should be tested for the presence of HIV.          Stop or avoiding illegal contact with others          Using sterilized syringe and needles, blades.          Using medicines not to transfer of HIV from HIV infected mother to child</p>	<p>Concept related          Using own words          Application in daily life</p>	<p>1 mark          1 mark</p>
<b>Q.No.11</b>	<p>If kidneys are absent it leads imbalance in Osmoregularity of blood and water levels in body.          So kidneys are wonderful organs.</p>		<p>1 marks</p>
<b>Q.No.12</b>	<p>The stomach is protected from the secretion of its own acid by secretion of mucus lining the stomach walls.</p>		<p>1 mark</p>
<b>Q.No.13</b>	<p>Autonomous nervous system what organs in our body?          Does it has a centre in brain?          Does it has any response in relation with spinal card distance?</p>		<p>1 mark</p>
<b>Q.No.14</b>	<p>He can confirm it as <math>\text{CO}_2</math> by passing into the limewater. If it turns milky white</p>		<p>1 mark</p>
<b>Q.No.15</b>		<p>Diagram labelling</p>	<p>1 mark</p>

<b>Q.No.16</b>	Female foeticide is a crime Stop female foeticide and save a girl child		1 mark
<b>Q.No. 17</b>	We conducted Swach Bharat Programme in our school. We clean our school surroundings, class rooms, office rooms and toilets this made our school clean. We conducted Swach Bharat programme rally.	Content related Application in daily life	1 mark