

S.3 BIOLOGY ASSESSMENT TEST 2

TIME: 90 MINUTES

TOPIC: COORDINATION IN PLANTS

SECTION A

1. A plant growth movement in response to a stimulus from external environment is called
 

A. tropism	C. A tactic movement.	<input type="checkbox"/>
B. photoperiodism.	D. A nastic movement.	
2. Growth of plant root towards water is called positive
 

A. Hydrotropism	C. Phototropism	<input type="checkbox"/>
B. Geotropism	D. thigmotropism	
3. Which one of the following is an example of a tactic response?
 

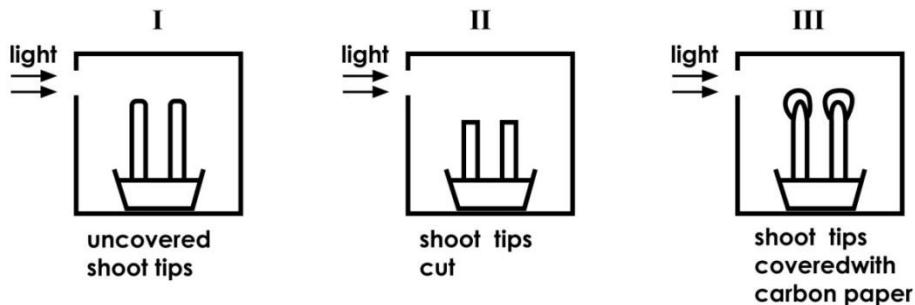
A. Rolling up of leaves on a sunny day.	<input type="checkbox"/>
B. Withdrawal by blowfly larvae from light.	
C. Withdrawal of the hand from a hot object.	
D. Bending of a plant towards light.	
4. Which of the following is true about nastic response?
 

A. Depends on the different.	C. It is relatively slow.	<input type="checkbox"/>
B. Does not involve hormones.	D. Does not involve only growth.	
5. Which one of the following responses is a directional growth movement?
 

A. Taxis	B. Reflex	C. Tropic	D. Nastic	<input type="checkbox"/>
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6. When the tip of a maize coleoptile is covered with an aluminum foil and then illuminated on one side, it grows straight because,
 

A. The foil kills the hormones in the coleoptile	<input type="checkbox"/>
B. The tip does not receive the light stimulus	
C. Hormones in the coleoptile move to the zone of elongation	
D. The foil activates the hormones in the coleoptile	
7. *Mimosa pudica* exhibits which type of nastic response?
 

A. Photonasty	B. Hydronasty	C. Haptonasty	D. Thermonasty	<input type="checkbox"/>
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8. Figure 1 represents a setup of experiments to show the effect of unilateral lighting on plant shoots. Fig.1



In which experiment(s) would the shoots grow bending towards light?

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|-------------|--------------|---------------|------------|
| A. 1 and 11 | B. 1 and 111 | C. 11 and 111 | D. 1 only. |
|-------------|--------------|---------------|------------|

9. When a seedling is placed on a klinostat, no curvature occurs because
- A. Auxins are not produced
  - B. Growth is accelerated
  - C. Auxins are uniformly distributed in the growing parts
  - D. All parts of the seedling are uniformly lit
10. The effect of unidirectional light on the distribution of auxins in the tip of a plant shoot is
- A. uniform distribution of auxins around the tip.
  - B. reduction in concentration of auxins on the illuminated side of the plant.
  - C. increase in auxins on the illuminated side of the plant.
  - D. inhibition of movement of auxins down the plant.
11. Which one of the following is NOT correct about tropic response?. It is
- A. Directional
  - B. A result of growth
  - C. Caused by external stimulus
  - D. A movement of the whole organism
12. Which one of the following is an example of tropism?
- A. Withdraw of wood from light
  - B. Bending of mimosa plant in touch
  - C. Withdraw of house fly larva from light
  - D. Growing of a bean root towards water
13. The radicle of a seedling is able to bend down wards in search for water mainly because;
- A. Auxins concentrated in the region towards light causing this region to elongate
  - B. Auxins concentrated in the region away from light causing this region to elongate
  - C. Auxins concentrated in the region away from light causing this region to grow slowly.
  - D. Auxins concentrated in the region towards light causing the region to grow slowly.
14. When a seedling is fixed on a rotating clinostat and placed in a horizontal position, the shoot continues to grow in a horizontal position because:
- A. Auxins accumulate on the lower side of the shoot.
  - B. Production of auxins stops
  - C. Auxins are uniformly distributed in the shoot
  - D. Auxins accumulate on the upper side of the shoot

15. Which one of the following is a difference between tropic responses and nastic responses?

	Tropic Responses	Nastic responses
A	Not growth movements	Are growth responses
B	Not caused by hormones	Caused by hormones
C	Take place in growing tips of plants	Not restricted to growing tips
D	Doesn't depend on the direction of the stimulus	Depend on direction of stimulus

**SECTION B**

1. (a) What kind of response is demonstrated when maggots placed in a choice chamber move towards the wet part? (01 mark)

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(b) Give the importance of the response stated in (a) to the maggots (02 marks)

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(c) Explain any three types of tropic responses. (04 marks)

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(d) Explain one significance of tropic responses in;  
(i) Providing support to plants (01 1/2 marks)

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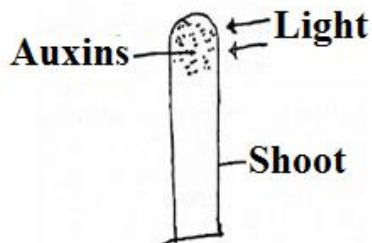
(ii) Aiding photosynthesis (01 1/2 marks)

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2. (a) Distinguish between phototropism and geotropism. (02 marks)

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(b) Figure 2 below shows a shoot tip placed in total darkness and exposed to a single source of light.



(i) In the space on the figure above, draw the appearance of the shoot after 3 days. (01 mark)

**(ii)** Explain the appearance of the shoot in (a)(i) above **(03 marks)**

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**(iii)** Suggest the effect of light from a single direction onto the taproot of a plant. **(01 mark)**

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**(c).** Suggest three advantages of geotropic responses for a seed germinating in soil. **(03 marks)**

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**SECTION C**

**1. (a)** Distinguish between Coordination and Irritability. **(02 marks)**

**(b).** Define the three main responses in plants. **(03 marks)**

**(c).** With examples in each, Describe the forms of each of the response you have mentioned in (b) above. **(10 marks)**

**2. (a)** Giving any two regions where they are found in plants, what are auxins? **(03 marks)**

**(b).** Describe the effect of Auxins on each of the plant parts you have mentioned in (a) above. **(10 marks)**

**(c).** Other than Auxins, state other four substances having a similar effects to the plant's physiology. **(02 marks)**

**END!!!**

*“Don't ask what the world needs. Ask what makes you come alive, and go do it.”*