

# Sri Lankan Biology Olympiad 2009



## Marking Scheme

### Part A – Multiple Choice Questions

(40 Marks)

1 - 3	2 - 2	3 - 5	4 - 4
5 - 1	6 - 1	7 - 4	8 - 2
9 - 1	10 - 4	11 - 4	12 - 1
13 - 5	14 - 1	15 - 5	16 - 4
17 - 4	18 - 2	19 - 3	20 - 2
21 - 3	22 - 1	23 - 3	24 - 2
25 - 4	26 - 1	27 - 4	28 - 5
29 - 5	30 - 1	31 - 5	32 - all
33 - 4	34 - 4	35 - 2	36 - 1
37 - 3	38 - 3	39 - 1	40 - 3

**Part B – Short Answer Questions**  
(Maximum 60 Marks)

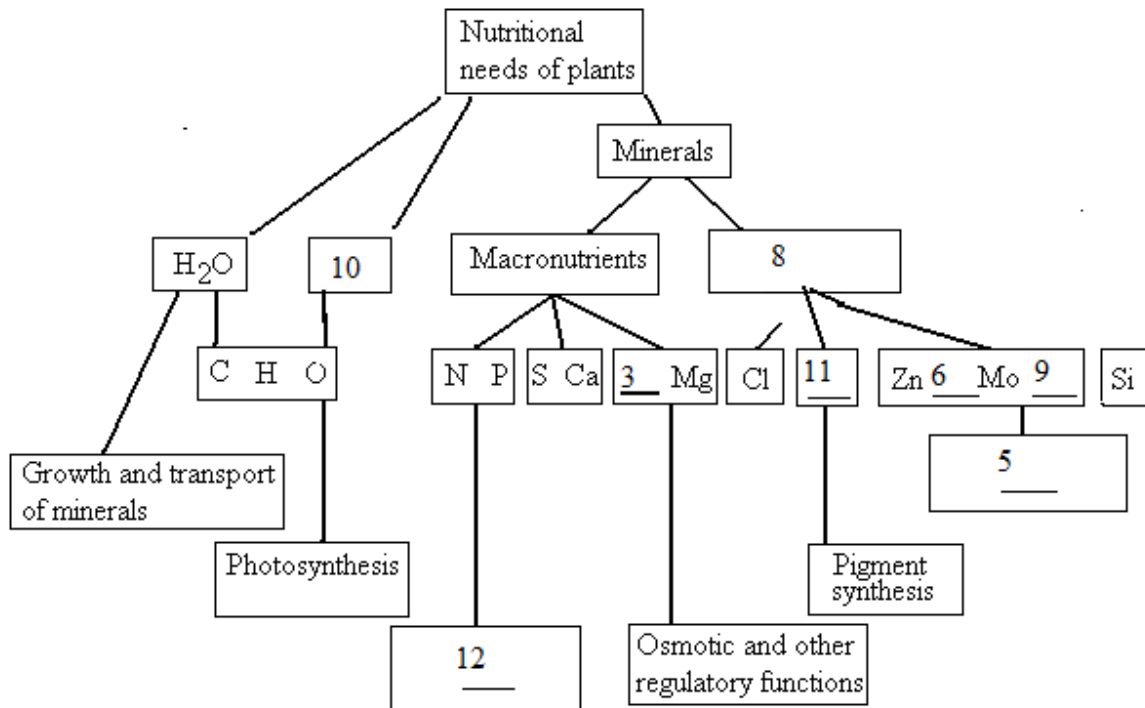
1. (0.5x8 = 4 marks)

Macromolecules	Monomer units	Linkage bonds	Functions
Polysaccharides	J	B	(A) E I N.
Lipids	Glycerol, fatty acids	Ester bonds	A E F I N
Proteins	Amino acids	K	A E (C) F L
Nucleic acids	D	Phosphodiester Bonds	C O.

2. (0.5x5 = 2.5 marks)

1. E
2. J
3. I
4. B
5. G

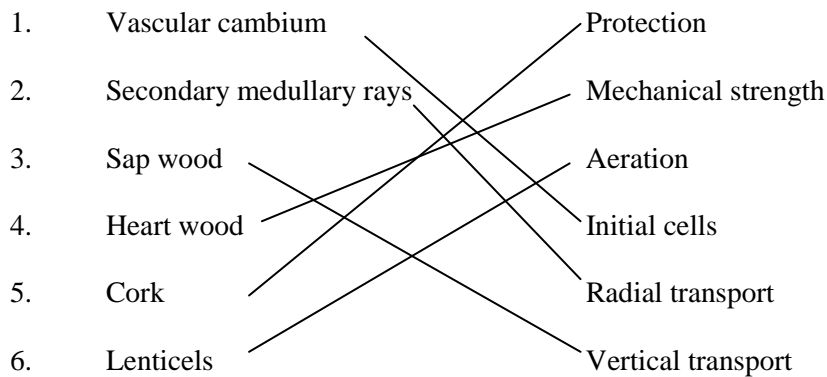
3. (0.5x8 = 4 marks)



4. (correct response 0.5x 12 = maximum 6 marks; incorrect response -0.5 marks)

Plant growth substance functions	Auxin	Cytokinin	Gibberelin	ABA	Ethelene
Promote stem elongation	√		√		
Promote root growth	√	√	√		
Promote fruit development	√		√		
Promote fruit ripening					√
Promote seed germination			√		
Delay senescence		√			
Inhibit seed germination				√	
Promote cell division and growth	√	√	√		

5. (0.5x6 = 3 marks; incorrect response -0.5 marks)



6. (0.5x5 = 2.5 marks)

1. √
2. √
3. X
4. X
5. √

7. (0.5x5 = 2.5 points)

1. C
2. B
3. B
4. A
5. A C D

8. (0.5x8 = 4 marks)

	5	7	11	14
Auricular systole	↑	=	↑	=
Ventricular systole	=	↑	=	↑

9. (0.5x12 = 6 marks)

	6	12	13	16
Auricular systole	O	O	C	C
Ventricular systole	C	C	O	O
Diastole	O	O	C	C

10. (0.5x4 = 2 marks)

1. 5
2. 14
3. 6, 12
4. Any

11. (each column 0.5x4 = 2 marks)

	cartilage	simple epithelium	stratified epithelium	smooth muscle
Bronchus	√	√	X	√
Oesophagus	X	√	√	√
Duodenum	X	√	√	√
Alveoli ducts	X	√	X	X
Atria	X	√	X	√

12.

(a) (1 mark; 0.5 marks if 7-9 are more correct; if answer includes any incorrect number = 0 marks)

3, 4, 7, 8, 9, 10, 11, 13, 14, 15

(b) (0.5x4 = 2 marks)

1. lobsters ↓
2. jellyfish ↑
3. copepods ↑
4. stability of ecosystem =

13. (0.2x16 = 3.2 marks)

	<i>Clostridium</i>	<i>Nitrosomonas</i>	<i>Anabaena</i>	<i>Saccharomyces</i>
Autotrophic	X	√	√	X
Aerobic	X	√	√	√
Parasitic	√	X	X	X
Saprophytic	√	X	X	√

14. (0.5x4 = 2 marks)

1. Pickles B
2. Jam AB
3. Pasteurized milk A (C)
4. Dried fish B

15. (0.5x4 = 2 marks)

1. Control of pollutants                    E
2. Biodiversity conservation            A B C
3. International Trade                    A
4. Waste disposal                         E

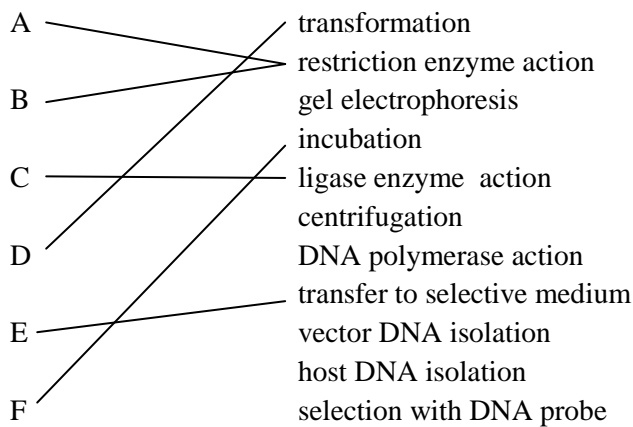
16. (0.5x4 = 2 points)

1. Relict                                    B
2. Keystone                                A
3. Endemic to Sri Lanka                E
4. Extinct                                 D

17. (0.25x15 = 3.75 marks)

	1	2	3
Anaerobic bacteria	√	√	√
Aerobic bacteria	√	X	√
Fungi	X	X	X
Autotrophic bacteria	√	√	√
Heterotrophic bacteria	√	√	√

18. (0.5x6 = 3 marks; incorrect response -0.5 marks)



19. (1x3 = 3 marks)

D > C > G >    H > E > F >    A > B

20. (0.4x6 = 2.4 marks)

1. Cardiac output                        B
2. Activity of Thymus                    A
3. Sexual activity                         E
4. Activity of the brain                 B
5. Height                                  C
6. Rate of growth                        A