

2017 O-LEVEL BIOLOGY ANSWER KEY

<p>1) a) - Water H₂O - Carbon dioxide (CO₂)</p> <p>b) - Plants need Carbon dioxide (CO₂) exhaled by animals for making their food. - Plants produce/release Oxygen (O₂) which animals need to breathe. - Plants also produce Glucose → Starch (food for animals)</p>	<p>Chlorophyll in plant cells - Energy from the sun (sunlight)</p>	<p>2) (a) Vēna Cava (b) Artery (c) Pulmonary vein (d) Aorta</p>												
<p>3)</p> <table border="1" data-bbox="119 392 702 761"> <thead> <tr> <th>ORGANISMS</th> <th>KINGDOM</th> </tr> </thead> <tbody> <tr> <td>Bacteria</td> <td>Monera</td> </tr> <tr> <td>Amoeba</td> <td>Protista</td> </tr> <tr> <td>Mushrooms</td> <td>Fungi/Fungus</td> </tr> <tr> <td>Beans</td> <td>Plantae (Plants)</td> </tr> <tr> <td>Man</td> <td>Animalia (Animals)</td> </tr> </tbody> </table>	ORGANISMS	KINGDOM	Bacteria	Monera	Amoeba	Protista	Mushrooms	Fungi/Fungus	Beans	Plantae (Plants)	Man	Animalia (Animals)	<p>4) (a) i) <u>Warm-blooded</u> animals: Their body temperature does not change with the temperature of the environment/surroundings.</p> <p>ii) <u>Cold-blooded</u> animals: Their body temperature changes with change of/in the temperature of the environment/surroundings.</p> <p>b) i) Warm-blooded animals are in: Mammals, Birds. ii) Cold-blooded animals are in: Reptiles, Amphibians and fishes</p>	
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<p>5) a) i) A male: XY ii) A female: XX</p>	<p>b)</p> <table border="1" data-bbox="470 806 813 884"> <tr> <td></td> <td>X</td> <td>Y</td> </tr> <tr> <td>X</td> <td>XX</td> <td>XY</td> </tr> </table>		X	Y	X	XX	XY	<p>XX = Female (1/2) = 50% XY = Male (1/2 = 50%)</p>						
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<p>6) a) I - 2/2 C - 1/1 P - 2/2 M - 3/3 = 16 × 2 = 32</p> <p>b) - Brush your teeth after meals - Consume fresh food - Drink enough clean water - Eat regularly and on time - Use clean utensils - Defecate regularly - Avoid excessive feeding.</p>	<p>7) - A Sharp object stimulates (pain) receptor (in the skin) - (nerve) impulse sent to the spinal cord via the sensory neuron - (nerve) impulse crosses synapse to replay neurons and sent to the brain</p>													
<p>8. - Support - Movement/Locomotion - Protection - Production/Formation of blood cells (red blood cells) - Storage of minerals (calcium and phosphorous) - Endocrine regulation</p>	<p>9. A. c) B. a) C. d) D. b)</p> <p>10. a) cotyledon b) i) Epigeal germination ii) Hypogeal germination</p> <p>c)</p> <table border="1" data-bbox="750 1355 1548 1478"> <thead> <tr> <th>Epigeal germination</th> <th>Hypogeal germination</th> </tr> </thead> <tbody> <tr> <td>Cotyledons are raised above the ground</td> <td>Cotyledons remain beneath/in/under the soil</td> </tr> </tbody> </table>		Epigeal germination	Hypogeal germination	Cotyledons are raised above the ground	Cotyledons remain beneath/in/under the soil								
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<p>11. Functions of water in the human body.</p> <ul style="list-style-type: none"> - Transport nutrients (minerals, vitamins and glucose) - Transport of nutrients oxygen (oxygenation) - Regulation of body temperature - Elimination of waste and toxins - Prevention of constipation - Lubrication of joints - Moistens tissues (in the mouth, eyes and nose) - Digestion of food (water helps in metabolism) - Protection of organs 	<p>12. a) Lizard/snake/Lion b) - Antelope population will increase - Green plants will decrease/reduce</p> <p>13. a) The fluid acts as a transport medium for sperms. b) Placenta c) I. B II. A III. D IV. C</p>													

SECTION B

14. a) Homozygous

b) i) Parents: Pp × Pp i.e. Genotype of the parents is **Pp**

ii) P, p

iii)

	P	P
P	PP	Pp
p	Pp	pp

Possible genotypes of the calves = PP, Pp, pp

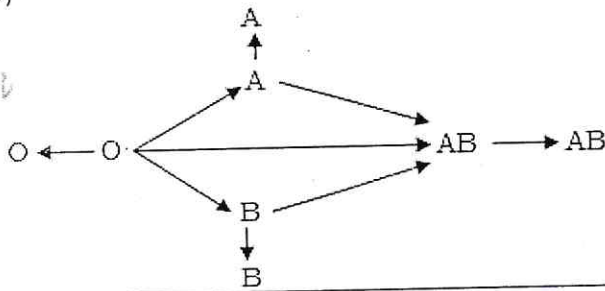
Possible phenotypes of the calves

= PP, Pp = Polled calves

Pp = Horned calves

16. a) An antigen is a living or non-living substance recognized by the immune system as foreign body.

b)



15. a) They:

- breath
- move
- excrete
- react to stimuli/ adapt to the environment
- grow and develop (become longer/heavier/bigger)
- use energy
- reproduce
- need food/eat
- are composed of cells

b) **They are used in:**

- fermentation of beer e.g. fungus (*Saccharomyces cerevisiae*)
- recycling of organic wastes (decomposition process for composting: e.g. fungus and soil bacteria.
- production of medicine/antibiotics: e.g. Bacteria and Yeast
- production of bread

Micro-organisms are harmful to man:

- They cause diseases: Sleeping sickness, amoeboid dysentery. Measles, AIDS, Taenia.

17.

a) They produce oxygen by photosynthesis

b) - Secret toxic material in water/cause water pollution/death of aquatic organisms
- Cause skin diseases.

c) i) Importance of Fungi:

- Are sources of food/eaten/edible e.g. mushrooms
- Are used in medicine (in the production of antibiotics and other medicine)
- Are used in baking
- Are used in fermentation/alcohol beverages e.g. Wine
- Are used to produce hormones (e.g. Gibberellins)
- Decompose organic matter/materials (Enhance the fertility of soil/material recycling)
- Develop symbiotic relation with plants roots (Mycorrhiza) and help in the absorption of nutrients

ii) importance of Pteridophytes

- Are used for decoration
- Are used as medicine to treat certain disorders
- Used in horticulture (as garden plants)
- Are used in the handcrafts for making basketry and bracelets
- Used to increase the fertility of soil (rice fields)

18. a) - Abstinence (Abstain from sex or be in a long term mutually monogamous relationship with an uninfected partner.)

- Correct and consistent condom use

b) - Pregnancy, delivery, breastfeeding, People who inject drugs

c) - People who have unprotected sex with someone who has HIV, Young people (adolescents)

- People who share needles, syringes (equipment) with someone with HIV

- Sex workers

- Homosexuals (Men who have sex with men)

SECTION C

- 19) a) The gas which is collected in the test-tube is oxygen (O_2)
- b) From water plants
 - c) During Photosynthesis
 - d) water, carbon dioxide (CO_2), sunlight, chlorophyll, optimum temperature, mineral salts
 - e) - No gas will collect
- The level of water in the test tube will not fall
 - f) Magnesium ions are needed to form chlorophyll; chlorophyll is needed to trap light/ for photosynthesis.

END