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| **Topic heading** | **Syllabus Ref** | **Idea cluster** | **Question 1** | **Question 2** | **Question 3** | **Question 4** |
| **Ecology** | **BEc1a** | **Adaptations, interdependence** | **An abiotic factor is:**   1. **A non-living organic molecule affecting and ecosystem.** 2. **A non-living factor affecting ecosystems such as sunlight** 3. **A living factor that affects ecosystems such as the number of prey available.** 4. **A living molecule affecting an ecosystem** | **A biotic factors is:**   1. **A non-living organic molecule affecting and ecosystem.** 2. **A non-living factor affecting ecosystems such as sunlight** 3. **A living factor that affects ecosystems such as the number of prey available** 4. **A living molecule affecting an ecosystem** | **An ecosystem is:**   1. **The interaction between all the living and non-living things in an environment.** 2. **Refers only to the living things in a specific area.** 3. **Refers only to the non-living things in a specific area.** 4. **Where an animal lives.** | **Factors plants compete for include:**   1. **Space and light.** 2. **Space, light and water.** 3. **Space, light, water and mineral ions.** 4. **Space, light, water, mineral ions and chloroplasts.** |
| **Answers** |  |  | **B** | **C** | **A** | **C.** |
| **Ecology** | **BEc2a** | **Levels of organisation** | **What is the primary source of energy for all ecosystems?**   1. **Plants** 2. **The sun** 3. **Chemicals** 4. **Water** | **All food chains must start off with:**   1. **A primary consumer** 2. **A secondary consumer** 3. **Microorganisms** 4. **A plant (or photosynthetic organism.** | **What is this piece of equipment called?**  [Image result for Quadrat](http://www.google.co.uk/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=0ahUKEwie9tPB8t_QAhWHDBoKHY1hBrMQjRwIBw&url=http://www.yahki.com/connexon/stories/20160225/Estimating-Population-Size&bvm=bv.139782543,bs.1,d.ZGg&psig=AFQjCNEgLi9uYg8lcwO1nr-Ji1sXyq923A&ust=1481124926338595)   1. **A quadrat** 2. **A line transect** 3. **A random sampler** 4. **A rectangle** | **Random sampling is used:**   1. **To identify the number of species.** 2. **To avoid bias when looking at data.** 3. **To estimate the number of species in an area.** 4. **To identify the distribution of species between two points of interest, such as between a foot path and some woods.** |
| **Answers** |  |  | **B** | **D** | **A** | **C** |

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| **Topic heading** | **Syllabus Ref** | **Idea cluster** | **Question 5** | **Question 6** | **Question 7;** | **Question 8** |
| **Ecology** | **BEc1b** | **Adaptations, interdependence** | **Animals compete for:**   1. **Food only** 2. **Food and mates.** 3. **Food, mates and territory.** 4. **Food, mates, territory and oxygen** | **If the number of rabbits decreased from this ecosystem then the number of mice would likely:**  [Image result for food chain](http://www.google.co.uk/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=0ahUKEwiGkNWI6d_QAhUBWBQKHbMpBbwQjRwIBw&url=http://wildsci.co.uk/food-chains-food-webs/&psig=AFQjCNE8-F0ltB2UHTDBwHQPylHbxfDQog&ust=1481122404210478)   1. **Stay the same.** 2. **Increase.** 3. **Decrease.** 4. **Be made extinct.** | **The ways living organisms interact is called:**   1. **Denaturing** 2. **Competition** 3. **Predator-Prey relationships** 4. **Interdependence** | **Adaptations may be:**   1. **Structural** 2. **Behavioural** 3. **Structural or behavioural** 4. **Structural, behavioural or functional.** |
| **Ecology** |
| **Answers** |  |  | **C** | **B** | **D** | **D** |
| **Ecology** | **EC2b** | **Levels of organisation** | **A line transect is used:**   1. **To identify the number of species.** 2. **To avoid bias when looking at data.** 3. **To estimate the number of species in an area.** 4. **To identify the distribution of species between two points of interest, such as between a foot path and some woods** | **The mean of these numbers: 3, 3, 5, 6 would be:**   1. **4.25** 2. **4.67** 3. **3** 4. **4** | **The mode of these numbers: 3, 3, 5, 6 would be:**   1. **4.25** 2. **4.67** 3. **3** 4. **4** | **The median of these numbers: 3, 3, 5, 6 would be:**   1. **4.25** 2. **4.67** 3. **3** 4. **4** |
| **Answers** |  |  | **D** | **A** | **C** | **D** |

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| **Topic heading** | **Syllabus Ref** | **Idea cluster** | **Question 9** | **Question 10** |  |  |
| **Ecology** | **BEc1c** | **Adaptations, interdependence** | **Organisms that survive in extreme conditions are called:**   1. **Hardophiles** 2. **Extremophiles** 3. **Non-living** 4. **Thermochromatic** | **An example of an extreme environment would be:**   1. **The sun** 2. **Deep sea vents** 3. **Sewer systems** 4. **The human stomach** |  |  |
| **Answers** |  |  | **B** | **B** |  |  |
| **Ecology** | **EC2b** | **Levels of organisation** | **What is the name given to this type of relationship:**  [Image result for predator prey graph](http://www.google.co.uk/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=0ahUKEwjGwuql9t_QAhULGBQKHZypDn8QjRwIBw&url=http://fractalfoundation.org/OFC/OFC-6-1.html&psig=AFQjCNE5oHEBB5rHkXqo-p8GwhY__dfemA&ust=1481125955565759)   1. **Producer-consumer** 2. **Consumer –prey** 3. **Predator-prey** 4. **Rabbit-fox** | | **Which town is situated on an unpolluted river?**  **A A**  **B B**  **C C**  **D D** | |
|  |  |  | **C** | | **D** | |
| **Ecology** | **EC2c** | **How materials are cycled** | **Below is a diagram of the carbon cycle:** | **Which process releases water vapour to the atmosphere?**  **A Transpiration**  **B Condensation**  **C Precipitation**  **D Absorption** | | **Which process removes water vapour from the atmosphere?**  **A Evaporation**  **B Condensation**  **C Nitrogen fixation**  **D Neutralisation** |
|  |  |  | **D** | **A** | | **B** |
| **Ecology** | **Ec2c** | **Land Use and Global Warming** | **Large-scale deforestation in tropical areas has occurred to:**  **A Provide land for sunbathing and tourism**  **B Provide land for house building**  **C Provide land for cattle and rice fields**  **D Provide wood for burning in wood-fired stoves** | **Two greenhouse gases that contribute to global warming are:**  **A O2 and CO2**  **B SO2 and O2**  **C CO and NO2**  **D CO2 and CH4** | **What processes mean scientists have come to a consensus that global warming is real?**  **A Replicated experiments in the laboratory**  **B Presentation and graph seen of rising temperature at scientific conferences**  **C Systematic review of thousands of peer reviewed publications**  **D Sea levels have risen and the climate has changed** | **Which one of the following is not a way of reducing negative human effects on ecosystems and maintaining biodiversity?**  **A recycling resources (rather than landfill)**  **B removal of hedgerows on farming land**  **C breeding programmes for endangered species**  **D reduction of deforestation** |
|  |  |  | **C** | **D** | **C** | **B** |