**GENERAL INTEGRATED SCIENCE– UNIT 1**

**TASK 7 – Ecology & Natures Cycles Test**

**MARKING KEY**

**/40**

**Multiple Choice Questions**

1. Which of the following is NOT an abiotic factor?
2. Decomposer
3. Wind
4. Humidity
5. Temperature
6. Identify the possible link “A” in the following food chain: Plant 🡪Insect 🡪 Frog 🡪 A🡪 Eagle
7. Cobra
8. Parrot
9. Rabbit
10. Wolf
11. When water droplets are large enough, to fall from the clouds, it is called
12. Condensation
13. Transpiration
14. Sublimation
15. Precipitation
16. In the carbon cycle, both terrestrial and aquatic organisms exchange \_\_\_\_\_\_\_\_\_ with the atmosphere.
17. Carbon monoxide
18. Oxygen gas
19. Carbon dioxide
20. Methane (CH4)
21. Compared to the amount of carbon on Earth 20,000 years ago, there is currently:
22. Much more carbon on Earth because it evaporates from the ocean as temperatures rise
23. Much less carbon on Earth because of increased farming
24. Exactly the same amount of carbon on Earth
25. Twice as much carbon on Earth because of burning fossil fuels
26. Biodiversity refers to the variety and variability of life on Earth. Biodiversity is typically NOT a measure of variation at which level
27. Genetic
28. Ecosystem
29. Species
30. Gender
31. The ecological relationship between a hawk and a rabbit is the same type of relationship as that between
    1. a tick and a deer.
    2. a frog and an insect.
    3. a mouse and a chipmunk.
    4. a bee and a flowering plant.

**Short Answer Questions (33 marks)**

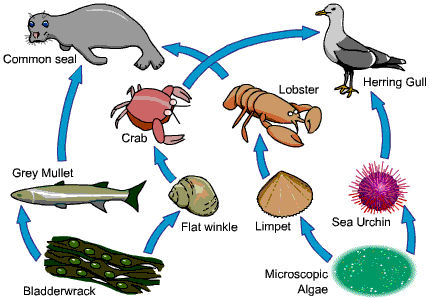
|  |  |
| --- | --- |
| **Question 1** | **Marks** |
| Define ‘ecosystem’:   * Need to refer to both abiotic and biotic factors   *For example - a biological community of interacting organisms and their physical environment.* | **1** |

|  |  |
| --- | --- |
| **Question 2a** | **Marks** |
| State what type of ecosystem is presented in this image:   * Woodland | **1** |

|  |  |
| --- | --- |
| **Question 2b** | **Marks** |
| Describe two features of this type of ecosystem that enabled you to make your decision for ‘part a’.   * Any two of:   + Tall trees   + Most sunlight reaches the ground   + Flowers growing on the ground | **2** |

|  |  |
| --- | --- |
| **Question 3** | **Marks** |
| If the environment suddenly changed, explain whether a generalist or a specialist would be more likely to survive.   * States generalist * Explains that a specialist may starve/generalist will have more options for food | **2** |

|  |  |
| --- | --- |
| **Question 4** | **Marks** |
| On the image on the right, label a part of the atmosphere, hydrosphere, lithosphere, biosphere   * Correctly labels/draws arrows to the sky, water, land and trees respectively | **4** |



|  |  |
| --- | --- |
| **Question 5a** | **Marks** |
| Draw a food chain from this food web.   * Accept any current food chain from the above diagram | **1** |

|  |  |
| --- | --- |
| **Question 5b** | **Marks** |
| Using this food web, write the name of a herbivore, producer and apex predator   * Herbivore = grey mullet, flat wrinkle, sea urchin or limpet * Producer = miscroscopic algea or bladderwrack * Apex Predator = common seal or herring gull | **3** |

|  |  |
| --- | --- |
| **Question 5c** | **Marks** |
| State what the arrows in a food chain represent.   * The arrows represent the flow of energy or direction of consumption of one organism by the next organism in the food chain. | **1** |

|  |  |
| --- | --- |
| **Question 5d** | **Marks** |
| A disease has wiped out most of the flat winkle population; explain what will happen to the numbers of:   * Grey Mullet: Increase + valid explanation according to the diagram * Crab: Decrease+ valid explanation according to the diagram * Lobster: Decrease+ valid explanation according to the diagram | **3** |

|  |  |
| --- | --- |
| **Question 6** | **Marks** |
| Describe why a predator-prey relationship between a lion and a gazelle is not symbiotic.   * Symbiotic relationships mean the organisms live in close quarters for a long time/lions and gazelles don’t live close together normally | **1** |



|  |  |
| --- | --- |
| **Question 7** | **Marks** |
| Observe the graph above. Explain which ecological interaction most likely exists between Species A and B   * Predator-Prey * Species B is a predator for Species A * Reasonable explanation: *as species A population increases, so does species B, until a tipping point at which the number of predators causes a decline in Species A and therefore Species B itself* | **3** |

|  |  |
| --- | --- |
| **Question 8** | **Marks** |
| Describe the difference between evaporation and transpiration in the water cycle   * Evaporation is water turning from a liquid to a gas * Whereas transpiration is the evaporation of water from plant leaves | **2** |

|  |  |
| --- | --- |
| **Question 9a** | **Marks** |
| What is the one carbon storage place on Earth?   * Any one of atmosphere, ocean, sediment, forests, plant life. | **1** |

|  |  |
| --- | --- |
| **Question 9b** | **Marks** |
| Explain the relationship between forests and atmospheric carbon dioxide levels.   * Forests consume carbon dioxide from the atmosphere * Therefore reducing atmospheric carbon dioxide levels | **2** |

|  |  |
| --- | --- |
| **Question 9c** | **Marks** |
| State two ways that humans use carbon in everyday life.   * Any two of: plastics, energy, fuel, cement, food, etc | **2** |

|  |  |
| --- | --- |
| **Question 9d** | **Marks** |
| Describe one way that humans are impacting the carbon cycle   * Any acceptable answer: increasing atmospheric carbon dioxide levels, digging up carbon stored underground, removing forests which reduces carbon dioxide being removed from the atmosphere, etc | **2** |