GAS EXCHANGE REVISION MK

1. Identify the structures labelled A and B. (2 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| A: Capillary | 1 |
| B: Bronchiole | 1 |
| **Total** | **2** |

1. (i) Name and describe the process, which is shown by the arrows on the diagram.

(3 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Any 3 of: | 1–3 |
| * Gas exchange/diffusion
* Oxygen moves from air space/alveoli into blood
* Carbon dioxide moves from the blood into air space/alveoli
* Movement from high concentration to low concentration
 |
| **Total** | **3** |

(ii) List **three** features of the structures shown in the diagram that allow them to carry out this process. (3 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Any 3 of: | 1–3 |
| * Large surface area
* Richly vascular
* Thin
* Moist
 |
| **Total** | **3** |

1. Using the letters provided for each event, choose those that occur during inspiration (breathing in) and list them in the correct order. (1 mark)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| F J B D G | 1 |
| **Total** | **1** |

WACE 2013 Q 40

**Question 40 (20 marks)**

1. Outline the pathway taken by air from outside the body through the human respiratory system to the point where gas exchange occurs. (7 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Nose/ mouth | 1–7 |
| Pharynx |
| Larynx |
| Trachea |
| Bronchi |
| Bronchioles |
| Alveoli |
| **Total** | **7** |

1. The respiratory surface in the lungs is designed to maximise gas exchange.

Identify and explain **three** features of the lung’s respiratory surface that allow for maximum gas exchange. (6 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| 1 mark for feature, 1 mark for explanation | 1–6 |
| Thin | presents a thin barrier for gas exchange |
| Moist | allows for the dissolving of gasses |
| Large surface area | maximises area for gas exchange |
| Rich blood supply | maximises area for gas exchange |
| Ventilated | maintains the concentration differences |
| **Total** | **6** |

1. Breathing is an essential component of life. Explain the importance of breathing and describe the process of expiration. (7 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| It is necessary to provide oxygen and remove carbon dioxide | 1 |
| It helps maintain gas concentration gradients in lungs | 1 |
| Diaphragm relaxes | 1–5 |
| Diaphragm moves up/ bulges |
| Intercostal muscles relax |
| Rib cages moves downwards |
| Decrease volume of thorax |
| Increase air pressure in lungs |
| Air moves out from region of high pressure inside to low pressure outside |
| **Total** | **7** |