

Province of the

**EASTERN CAPE**

EDUCATION

**SENIOR PHASE**

**GRADE 9**

**NOVEMBER 2010**

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| **NATURAL SCIENCES**  **MARKING GUIDELINE** |

**MARKS: 100**

**TIME: 2 hours**

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| This marking guideline consists of 4 pages. |

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| **QUESTION 1** | | | | | | | | | |  |
| 1.1 | | A | | | (1) | 1.6 | | A | | (1) |
| 1.2 | | C | | | (1) | 1.7 | | A | | (1) |
| 1.3 | | A | | | (1) | 1.8 | | A | | (1) |
| 1.4 | | A | | | (1) | 1.9 | | C | | (1) |
| 1.5 | | B | | | (1) | 1.10 | | C | | (1) |
|  | |  | | | | | | | | **[10]** |
| **QUESTION 2** | | | | | | | | | |  |
| 2.1 | | F | | (1) | | | 2.6 | | C | (1) |
| 2.2 | | E | | (1) | | | 2.7 | | K | (1) |
| 3.3 | | A | | (1) | | | 2.8 | | G | (1) |
| 2.4 | | B | | (1) | | | 2.9 | | L | (1) |
| 2.5 | | J | | (1) | | | 2.10 | | H | (1) |
|  | |  | | | | | | | | **[10]** |
| **QUESTION 3** | | | | | | | | | |  |
| 3.1 | A: Plant cell  B: Sperm cell/animal cell (You may accept animal cell as a correct answer) | | | | | | | | | (2) |
|  |  | |  | | | | | | |  |
| 3.2 | 1. Cell membrane√  2. Mitochondria√  3. Chloroplast√  4. Cell wall√  5. Nucleus√ | | | | | | | | | (5) |
|  |  | |  | | | | | | |  |
| 3.3 | 2. **Mitochondria**: stores energy and food.√  5. **Nucleus**: it controls all functions of the cell.√ | | | | | | | | | (2) |
|  |  | |  | | | | | | | **[9]** |
| **QUESTION 4** | | | | | | | | | |  |
| 4.1 | Bread | | | | | | | | | (1) |
| 4.2 | Fish | | | | | | | | | (1) |
| 4.3 | PERCENTAGE OF NUTRIENTS IN FOUR FOOD TYPES | | | | | | | | |  |
|  |  | | | | | | | | |  |

**FOOD TYPES**

Hint: 1 mark for heading,

1 mark for key,

1 mark for foot note and

4 mark for correct plotting of food types with nutrients

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | |  |
| 4.4 | Vitamins, minerals, fibre, water (Any2) | | | (2) |
|  |  | | |  |
| 4.5 | **Yes√**  - for healthy body, for normal digestion, to reduce constipation, for normal metabolism, for healthy skin, eye, etc. **√**  (*Learners should give good and valid reasons why they would or would not include these foods*) | | | (3) |
|  |  | | | **[14]** |
| **QUESTION 5** | | | |  |
| 5.1 | Carbon dioxide (CO2) | | | (1) |
| 5.2 | Helium(He) | | | (1) |
| 5.3 | Oxygen (O2) | | | (1) |
| 5.4 | Chlorine(Cl2) | | | (1) |
| 5.5 | Carbon dioxide (CO2) | | | (1) |
|  |  | | | **[5]** |
| **QUESTION 6** | | | |  |
| 6.1 | Line Graph  *(Annexure 2)* | | | (5) |
| 6.2 | 1 mark for freezing point, 1 mark for melting point, 1 mark for boiling point  (correct approximation should be accepted) | | | (3) |
| 6.3 | water became frozen, increase in volume/expanded | | | (2) |
| 6.4 | Density = mass ÷ volume  Density =5 g ÷ 4 cm3 = 1,25 g/cm3 | | | (2) |
|  |  | | | **[12]** |
| **QUESTION 7** | | | |  |
| 7.1 | Hydrochloric Acid + Calcium carbonate → (a) **Water** √ + (b) **Carbon dioxide**  √ | | | (2) |
| 7.2 | (c) 2**HCl√** +CaCO3 → 2CaCl + (d) **H2O**√ **+ (e) CO2**√ | | | (3) |
| 7.3 | Sulphuric Acid + Copper (II) oxide → Copper sulphate + (f) **Water**√ | | | (1) |
| 7.4 | H2SO4 + (g) **CuO**√ → (h) **CuSO4**√+ H2O | | | (2) |
| 7.5 | Sodium hydroxide + Hydrochloric Acid → ( i ) **Sodium Chloride** √ **+( j) Water**√  (mark can be awarded for symbols as well) | | | (2) |
|  |  | | | **[10]** |
| **QUESTION 8** | | | |  |
| 8.1 | R1 = V  I  R1 = 6V √  2A √  R1 = 3Ώ √√  R2 = V  I  R2 = 3V √  2A √  R2 = 1,5Ώ √√ | | | (3) |
|  |  | | |  |
| 8.2 | Thickness, length, type of metal, temperature.  (The thicker the conductor, the smaller the resistance.  The longer the wire the greater the resistance.  The type of metal used will affect resistance  (Different kinds of metals of the same size will have different resistances.)  The higher the temperature of any conductor, the more resistance the conductor will have. (Any2) | | | (2) |
|  |  | | | **[5]** |
|  |  | | |  |
| **QUESTION 9** | | | |  |
|  | | | |  |
| 9.1 | | Carbon dioxide | | (1) |
| 9.2 | | Lime water turns milky/ burning wooden splinter in to a jar of CO2 put off the flame | | (2) |
| 9.3 | | For photosynthesis/ to produce food in plants | | (2) |
|  | |  | | **[5]** |
|  |  | |  |  |
| **QUESTION 10** | | | |  |
|  | | | |  |
| 10.1 | | magnetite, hematite | | (2) |
|  | |  | |  |
| 10.2 | | -create jobs/ people are getting employment  -increase in tourism  -precious metal for jewellery, industry  -materials for buildings  -business opportunities  -import of precious metals  -increase in economy of the country (Any5) | | (5) |
|  | |  | |  |
| 10.3 | | -erosion,  -formation of sinkholes,  -loss of biodiversity,  -contamination of soil,  -contamination of groundwater and surface water by chemicals from mining processes.  -contamination resulting from leakage of chemicals affect the health  -removal of plants and animals  -pollution  -damages to the environment (Any5) | | (5) |
|  | |  | | **[12]** |
|  | | | |  |
| **QUESTION 11** | | | |  |
|  | | | |  |
| 11.1 | | Global warming | | (1) |
| 11.2 | | **-**flooding, extreme weather conditions, tsunami’s, rising sea levels, seasonal changes, natural disasters, etc. (any 4x1) | | (4) |
| 11.3 | | Reduce deforestation, plant more trees, reduce pollution  any reasonable suggestions | | (3) |
|  | |  | | **[8]** |
|  |  | |  |  |
|  |  | | **TOTAL:** | **100** |