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| 1. |  | Molten lead (II) bromide (PbBr2) has |
|  |  | A. | Br- ions |
|  |  | B. | chloride |
|  |  | C. | Pb2+ ions |
|  |  | D. | lead atom |

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| 2. |  | The solution that turn dry litmus paper from red to blue are |
|  |  | A. | ammonia |
|  |  | B. | sulphuric acid  |
|  |  | C. | hydrochloric acid |
|  |  | D. | sodium hydroxide |

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| 3. |  | The **ANIONS** present in aqueous copper (II) chloride solution are |
|  |  | A. | copper ion |
|  |  | B. | chloride ion |
|  |  | C. | hydrogen ion |
|  |  | D. | hydroxide ion |

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| 4. |  | 3 mol of nitrogen gas, N2, is equal to(RAM: N=14 ; Avogadro constant= 6.02 x 1023 particles) |
|  |  | A. | 84 g |
|  |  | B. | 0.084 kg |
|  |  | C. | 3.612 x 1024 atom N |
|  |  | D. | 1.806 x 1024 molecule |

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| 5. |  | 10 g of NaCl is equal to(RAM: Na=23, Cl=35.5 ; Avogadro constant= 6.02 x 1023 particles) |
|  |  | A. | 0.5 mol |
|  |  | B. | 0.17 mol |
|  |  | C. | 1.0234 x 1023 molecule |
|  |  | D. | 6.02 x 1023 atom |

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| 6. |  | Lithium and Sodium are in the Group 1 in Periodic Table. Both of these elements  |
|  |  | A. | are reactive |
|  |  | B. | have same chemical properties |
|  |  | C. | have same number of valence electron |
|  |  | D. | have same number of neutrons in their nucleus |

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| 7. |  | What is the relative molecular mass of compound CCl2F2 ?(RAM: C=12 ; Cl 35.5 ; F=19) |
|  |  | A. | 50 |
|  |  | B. | 93 |
|  |  | C. | 121 |
|  |  | D. | 162 |

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| **QUESTION 1** |
| **Relative Atomic Mass : O=16, He=4, H=1, C=12, Na=23, Cl=35.5, K=39, S=32, Cu=64****Avogadro constant : 6.02 x 1023 particle**Sodium hydroxide = NaOHMethane = CH4Sulphur dioxide = SO2Calculate all the following questions |  |
| a. |  | Calculate the mass of 0.3 mol of CH4? | (2 marks) |
| b. |  | Calculate the number of moles in 3.2 g in NaOH? | (2 marks) |
| c. |  | Calculate the number of particles in 5 mol of CH4 | (2 marks) |
| d. |  | Calculate the number of moles in 10 g of SO2 | (2 marks) |
| e. |  | Calculate the number of atom oxygen in 5 mol of SO2 | (2 marks) |

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| **QUESTION 2** |
| Table 2 shows four atoms labeled V, W and X. Use the information from the table to answer the following questions.

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| --- | --- | --- | --- |
| **Atom** | **Proton number** | **Electron number** | **Neutron number** |
| V | 6 | 7 | 6 |
| W | 8 | 9 | 8 |
| X | 20 | 22 | 20 |

 |  |
| a. |  | What is the nucleon number of1. Atom V
2. Atom W
3. Atom X
 | (3 marks) |
| b. |  | State the electron configuration of atom 1. V
2. W
3. X

 **X*****A******Z***  | (3marks) |
| c. |  | Represent the atoms V, W and X in the form of . . (A = nucleon number, Z = proton number) | (4 marks) |

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| **QUESTION 1** |
| Molten lead (II) bromide (PbBr2) is used as an electrolyte |  |
| 1. |  | Draw and label the diagram of set up apparatus using PbBr2 as an electrolyte.  | (8 marks) |
| 2. |  | Write the formula of ions (cation and anion) that are attracted to 1. Anode
2. Cathode
 | (2 marks) |
| 3. |  | Write the half equation at 1. Anode
2. Cathode
 | (4 marks) |
| 4. |  | Write the overall equations | (2 marks) |
| 5. |  | State the name of product at:1. Anode
2. Cathode
 | (2 marks) |
| 6. |  | State the observation at:1. Anode
2. Cathode
 | (2 marks) |

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| **QUESTION 2** |
| Figure 1 shows the atomic structure of three atoms M, N and O. Answer the following questionFigure 1 |  |
| a. |  | State the position of element M, N, O in the Periodic Table by completing the table below

|  |  |  |  |
| --- | --- | --- | --- |
| Element | M | N | O |
| Period |  |  |  |
| Group |  |  |  |

 | (6 mark) |
| **b.** |  | Element M and O can combine to form a compound1. What type of bonding is present in the compound?
2. What is the molecular formula of the compound?
 | (2 mark) |
| **c.** |  | Write chemical formula for the compound M and O formed | (2 mark) |
| **d.** |  | Draw the formation of the compound formed | (4 marks) |
| **e.** |  | Element N and O can combine to form a compound1. What type of bonding is present in the compound?
2. Explain your answer
 | (1 mark)(2 mars) |
| **f.** |  | Choose an element which is**:**1. A positive ion with charge 2+ :
2. A negative ion with charge 2-:
3. State an electron configuration for O2-:
 | (3 marks) |

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| **QUESTION 3** |
| Matter exists in three different physical state. |  |
| 1. |  | Define the meaning of1. melting
2. boiling
3. freezing
4. condensation
5. sublimation

  | (5 marks) |
| 2. |  | Using an ice as an example. Draw a heating graph and give the melting and boiling point. Labeled the graph.  | (5 marks) |
| 3. |  | Draw a cooling graph and label each state including the freezing point. | (5 marks) |
| 4. |  | Explain the changes in terms of energy, movement and the arrangement and force of attraction of the particles when a solid melts on heating.  | (5 marks) |