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|  | | | **R.V. College of Engineering**  **(*Autonomous Institute affiliated to VTU, Belagavi)***  **Department of Chemistry**  **Sub: Engineering Chemistry (16CH22)**  **II Semester, ‘G’ Section ‘EIE’ branch**  **Quiz-3 (Even semester)** | | | | | | | | | | | | | | | | | | | |
| **Date: 05/04/2017** | | | | | | |  |  |  | |  | | **Duration: 15 minutes** | | | | | | **Max Mark: 10** | | | |
| **Roll No.:** | |  | | | **Section:** | | | | **Name of the Student :** | | | | | | |  | | | **Signature:** | | | |
| **Q No** | | | 1 | 2 | | 3 | | | 4 | 5 | | 6 | | 7 | 8 | 9 | 10 | Version | Total Marks | Signature of Faculty | | |
| **Marks** | | |  |  | |  | | |  |  | |  | |  |  |  |  | **A** |  |  | | |
|  | | |  |  | |  | | |  |  | |  | |  |  |  |  |  |  |  |  |  |
| ***Instruction: Answer ALL the questions*** | | | | | | | | | | | | | | | | | | | |  |  |  |
| **Sl. No** | **Questions** | | | | | | | | | | | | | | | | | | | Marks | BT | CO |
| 1 | The Nanocomposite material consisting of ZnO nanowire, CdS nanoparticles and a graphene. Identify the 2D nanomaterial in this composite. | | | | | | | | | | | | | | | | | | | 1 | L1 | 1 |
| 2 | Suggest a best wet chemical method for the preparation of TiO2 nanoparticles from Titanium isopropoxide. | | | | | | | | | | | | | | | | | | | 1 | L2 | 2 |
| 3 | Among Mg(HCO3)2, ZnSO4, Ca(NO3)2 and FeCl3, Which metal precursor is more suitable to prepare corresponding nano metal oxide in solution combustion method? | | | | | | | | | | | | | | | | | | | 1 | L3 | 3 |
| 4 | What is the significance of Argon gas in CVD method used for CNT preparation? | | | | | | | | | | | | | | | | | | | 1 | L2,L3 | 2 |
| 5 | How does the band gap of nanomaterial vary with decrease in the particle size? | | | | | | | | | | | | | | | | | | | 1 | L1,L2 | 1 |
| 6 | Interpret the effect of covalent functionalization on the structure of CNT. | | | | | | | | | | | | | | | | | | | 1 | L4 | 4 |
| 7 | The optical property of metal nanoparticles is largely depending on the particle size and band gap. Propose the phenomenon from which the optical property of gold nanoparticles could be explained. | | | | | | | | | | | | | | | | | | | 1 | L3,L4 | 3 |
| 8 | Suggest the suitable organometallic catalyst used in CVD for CNT preparation. | | | | | | | | | | | | | | | | | | | 1 | L2,L3 | 2 |
| 9 | Propose a suitable chemical method for making non-polar graphene into polar graphene. | | | | | | | | | | | | | | | | | | | 1 | L4,L5 | 4 |
| 10 | Highlight the structural difference between CNT and graphene? | | | | | | | | | | | | | | | | | | | 1 | L3,L4 | 3 |
| **Course Outcomes (As per Bloom’s revised taxonomy)** | | | | | | | | | | | | | | | | | | | | | | |
| 1.      Understand the principles of Chemistry in Engineering (L1). | | | | | | | | | | | | | | | | | | | | | | |
| 2.      Applying the knowledge of Chemistry in solving societal problems related public health, safety and environmental issues (L2, L3). | | | | | | | | | | | | | | | | | | | | | | |
| 3.      Identify, analyze and interpret Engineering problems associated with chemistry to achieve solutions (L3, L4). | | | | | | | | | | | | | | | | | | | | | | |
| 4. Developing solutions for problems associated with water, fuel, corrosion, battery, nanomaterial and polymer technologies (L4). | | | | | | | | | | | | | | | | | | | | | | |

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|  | | | **R.V. College of Engineering**  **(*Autonomous Institute affiliated to VTU, Belagavi)***  **Department of Chemistry**  **Sub: Engineering Chemistry (16CH22)**  **II Semester, ‘G’ Section ‘EIE’ branch**  **Quiz-3 (Even semester)** | | | | | | | | | | | | | | | | | | | |
| **Date: 05/04/2017** | | | | | | |  |  |  | |  | | **Duration: 15 minutes** | | | | | | **Max Mark: 10** | | | |
| **Roll No.:** | |  | | | **Section:** | | | | **Name of the Student :** | | | | | | |  | | | **Signature:** | | | |
| **Q No** | | | 1 | 2 | | 3 | | | 4 | 5 | | 6 | | 7 | 8 | 9 | 10 | Version | Total Marks | Signature of Faculty | | |
| **Marks** | | |  |  | |  | | |  |  | |  | |  |  |  |  | **B** |  |  | | |
|  | | |  |  | |  | | |  |  | |  | |  |  |  |  |  |  |  |  |  |
| ***Instruction: Answer ALL the questions*** | | | | | | | | | | | | | | | | | | | |  |  |  |
| **Sl. No** | **Questions** | | | | | | | | | | | | | | | | | | | Marks | BT | CO |
| 1 | How does the band gap of nanomaterial vary with increase in the particle size? | | | | | | | | | | | | | | | | | | | 1 | L1 | 1 |
| 2 | Suggest the suitable hydrocarbon source used in CVD for CNT preparation. | | | | | | | | | | | | | | | | | | | 1 | L2 | 2 |
| 3 | The optical property of metal nanoparticles is largely depending on the particle size and band gap. Propose the phenomenon from which the optical property of gold nanoparticles could be explained. | | | | | | | | | | | | | | | | | | | 1 | L3 | 3 |
| 4 | Suggest a best wet chemical method for the preparation of TiO2 nanoparticles from Titanium isopropoxide. | | | | | | | | | | | | | | | | | | | 1 | L2,L3 | 2 |
| 5 | The Nanocomposite material consisting of ZnO nanowire, CdS nanoparticles and a graphene. Identify the 1D nanomaterial in this composite. | | | | | | | | | | | | | | | | | | | 1 | L1,L2 | 1 |
| 6 | Propose a suitable chemical method for making non-polar graphene into polar graphene. | | | | | | | | | | | | | | | | | | | 1 | L4 | 4 |
| 7 | Highlight the structural difference between CNT and graphene? | | | | | | | | | | | | | | | | | | | 1 | L3,L4 | 3 |
| 8 | What is the significance of Argon gas in CVD method used for CNT preparation? | | | | | | | | | | | | | | | | | | | 1 | L2,L3 | 2 |
| 9 | Interpret the effect of covalent functionalization on the structure of graphene. | | | | | | | | | | | | | | | | | | | 1 | L4,L5 | 4 |
| 10 | Among Mg(HCO3)2, Zn(NO3)2, Ca SO4 and FeCl3, Which metal precursor is more suitable to prepare corresponding nano metal oxide in solution combustion method. | | | | | | | | | | | | | | | | | | | 1 | L3,L4 | 3 |
| **Course Outcomes (As per Bloom’s revised taxonomy)** | | | | | | | | | | | | | | | | | | | | | | |
| 1.      Understand the principles of Chemistry in Engineering (L1). | | | | | | | | | | | | | | | | | | | | | | |
| 2.      Applying the knowledge of Chemistry in solving societal problems related public health, safety and environmental issues (L2, L3). | | | | | | | | | | | | | | | | | | | | | | |
| 3.      Identify, analyze and interpret Engineering problems associated with chemistry to achieve solutions (L3, L4). | | | | | | | | | | | | | | | | | | | | | | |
| 4. Developing solutions for problems associated with water, fuel, corrosion, battery, nanomaterial and polymer technologies (L4). | | | | | | | | | | | | | | | | | | | | | | |
|  | | | **R.V. College of Engineering**  **(*Autonomous Institute affiliated to VTU, Belagavi)***  **Department of Chemistry**  **Sub: Engineering Chemistry (16CH22)**  **II Semester, ‘G’ Section ‘EIE’ branch**  **Quiz-3 (Even semester)** | | | | | | | | | | | | | | | | | | | |
| **Date: 05/04/2017** | | | | | | |  |  |  | |  | | **Duration: 15 minutes** | | | | | | **Max Mark: 10** | | | |
| **Roll No.:** | |  | | | **Section:** | | | | **Name of the Student :** | | | | | | |  | | | **Signature:** | | | |
| **Q No** | | | 1 | 2 | | 3 | | | 4 | 5 | | 6 | | 7 | 8 | 9 | 10 | Version | Total Marks | Signature of Faculty | | |
| **Marks** | | |  |  | |  | | |  |  | |  | |  |  |  |  | **C** |  |  | | |
|  | | |  |  | |  | | |  |  | |  | |  |  |  |  |  |  |  |  |  |
| ***Instruction: Answer ALL the questions*** | | | | | | | | | | | | | | | | | | | |  |  |  |
| **Sl. No** | **Questions** | | | | | | | | | | | | | | | | | | | Marks | BT | CO |
| 1 | How does the band gap of nanomaterial vary with decrease in the particle size? | | | | | | | | | | | | | | | | | | | 1 | L1 | 1 |
| 2 | What is the significance of Argon gas in CVD method used for CNT preparation? | | | | | | | | | | | | | | | | | | | 1 | L2 | 2 |
| 3 | Highlight the structural difference between CNT and graphene? | | | | | | | | | | | | | | | | | | | 1 | L3 | 3 |
| 4 | Suggest the suitable organometallic catalyst used in CVD for CNT preparation. | | | | | | | | | | | | | | | | | | | 1 | L2,L3 | 2 |
| 5 | The Nanocomposite material consisting of ZnO nanowire, CdS nanoparticles and a graphene. Identify the 2D nanomaterial in this composite. | | | | | | | | | | | | | | | | | | | 1 | L1,L2 | 1 |
| 6 | Propose a suitable chemical method for making non-polar graphene into polar graphene. | | | | | | | | | | | | | | | | | | | 1 | L4 | 4 |
| 7 | Among Mg(HCO3)2, ZnSO4, Ca(NO3)2 and FeCl3, Which metal precursor is more suitable to prepare corresponding nano metal oxide in solution combustion method. | | | | | | | | | | | | | | | | | | | 1 | L3,L4 | 3 |
| 8 | Suggest a best wet chemical method for the preparation of TiO2 nanoparticles from Titanium isopropoxide. | | | | | | | | | | | | | | | | | | | 1 | L2,L3 | 2 |
| 9 | Interpret the effect of covalent functionalization on the structure of CNT. | | | | | | | | | | | | | | | | | | | 1 | L4,L5 | 4 |
| 10 | The optical property of metal nanoparticles is largely depending on the particle size and band gap. Propose the phenomenon from which the optical property of gold nanoparticles could be explained. | | | | | | | | | | | | | | | | | | | 1 | L3,L4 | 3 |
| **Course Outcomes (As per Bloom’s revised taxonomy)** | | | | | | | | | | | | | | | | | | | | | | |
| 1.      Understand the principles of Chemistry in Engineering (L1). | | | | | | | | | | | | | | | | | | | | | | |
| 2.      Applying the knowledge of Chemistry in solving societal problems related public health, safety and environmental issues (L2, L3). | | | | | | | | | | | | | | | | | | | | | | |
| 3.      Identify, analyze and interpret Engineering problems associated with chemistry to achieve solutions (L3, L4). | | | | | | | | | | | | | | | | | | | | | | |
| 4. Developing solutions for problems associated with water, fuel, corrosion, battery, nanomaterial and polymer technologies (L4). | | | | | | | | | | | | | | | | | | | | | | |

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|  | | | **R.V. College of Engineering**  **(*Autonomous Institute affiliated to VTU, Belagavi)***  **Department of Chemistry**  **Sub: Engineering Chemistry (16CH22)**  **II Semester, ‘G’ Section ‘EIE’ branch**  **Quiz-3 (Even semester)** | | | | | | | | | | | | | | | | | | | |
| **Date: 05/04/2017** | | | | | | |  |  |  | |  | | **Duration: 15 minutes** | | | | | | **Max Mark: 10** | | | |
| **Roll No.:** | |  | | | **Section:** | | | | **Name of the Student :** | | | | | | |  | | | **Signature:** | | | |
| **Q No** | | | 1 | 2 | | 3 | | | 4 | 5 | | 6 | | 7 | 8 | 9 | 10 | Version | Total Marks | Signature of Faculty | | |
| **Marks** | | |  |  | |  | | |  |  | |  | |  |  |  |  | **D** |  |  | | |
|  | | |  |  | |  | | |  |  | |  | |  |  |  |  |  |  |  |  |  |
| ***Instruction: Answer ALL the questions*** | | | | | | | | | | | | | | | | | | | |  |  |  |
| **Sl. No** | **Questions** | | | | | | | | | | | | | | | | | | | Marks | BT | CO |
| 1 | The Nanocomposite material consisting of ZnO nanowire, CdS nanoparticles and a graphene. Identify the 0D nanomaterial in this composite. | | | | | | | | | | | | | | | | | | | 1 | L1 | 1 |
| 2 | Suggest the suitable organometallic catalyst used in CVD for CNT preparation. | | | | | | | | | | | | | | | | | | | 1 | L2 | 2 |
| 3 | The optical property of metal nanoparticles is largely depending on the particle size and band gap. Propose the phenomenon from which the optical property of gold nanoparticles could be explained. | | | | | | | | | | | | | | | | | | | 1 | L3 | 3 |
| 4 | Suggest a best wet chemical method for the preparation of TiO2 nanoparticles from Titanium isopropoxide. | | | | | | | | | | | | | | | | | | | 1 | L2,L3 | 2 |
| 5 | How does the band gap of nanomaterial vary with increase in the particle size? | | | | | | | | | | | | | | | | | | | 1 | L1,L2 | 1 |
| 6 | Interpret the effect of covalent functionalization on the structure of Graphene. | | | | | | | | | | | | | | | | | | | 1 | L4 | 4 |
| 7 | Highlight the structural difference between CNT and graphene? | | | | | | | | | | | | | | | | | | | 1 | L3,L4 | 3 |
| 8 | What is the significance of Argon gas in CVD method used for CNT preparation? | | | | | | | | | | | | | | | | | | | 1 | L2,L3 | 2 |
| 9 | Propose a suitable chemical method for making non-polar graphene into water soluble graphene. | | | | | | | | | | | | | | | | | | | 1 | L4,L5 | 4 |
| 10 | Among Mg(NO3)2, ZnSO4, Ca(HCO3)2, and FeCl3, Which metal precursor is more suitable to prepare corresponding nano metal oxide in solution combustion method. | | | | | | | | | | | | | | | | | | | 1 | L3,L4 | 3 |
| **Course Outcomes (As per Bloom’s revised taxonomy)** | | | | | | | | | | | | | | | | | | | | | | |
| 1.      Understand the principles of Chemistry in Engineering (L1). | | | | | | | | | | | | | | | | | | | | | | |
| 2.      Applying the knowledge of Chemistry in solving societal problems related public health, safety and environmental issues (L2, L3). | | | | | | | | | | | | | | | | | | | | | | |
| 3.      Identify, analyze and interpret Engineering problems associated with chemistry to achieve solutions (L3, L4). | | | | | | | | | | | | | | | | | | | | | | |
| 4. Developing solutions for problems associated with water, fuel, corrosion, battery, nanomaterial and polymer technologies (L4). | | | | | | | | | | | | | | | | | | | | | | |