

CENTURION UNIVERSITY OF TECHNOLOGY AND MANAGEMENT

School of Engineering & Technology



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*Shaping Lives...
Empowering Communities...*

Subject Name-Applied engineering materials

Subject Code -(CUTM1009)

Assignment -1 (Multiple Choice Questions)

S. NO	MCQ	Instructions		
1.		1 nm = _____ m		
		10^{-6}		
		10^{-8}		
		10^{-9}		
		10^{-3}		
2.		Graphene is _____		
		The name for a honeycomb sheet of carbon atoms		
		The name for a nanoscale cube of random atoms		
		The name for an invisible plastic membrane		
		The scientific name for the graphite in a 6B pencil		
3.		Which of these carbon allotropes can be formed by graphene?		
		Carbon nanotube		
		Fullerene (buckyball)		
		Graphite		
		All of the above		
4.		Graphene is a...		
		Zero-dimensional (0D) material		
		One-dimensional (1D) material		
		Two-dimensional (2D) material		
		Three-dimensional (3D) material		
5.		What's the procedure in Top-down fabrication method?		
		Nano-particles → Powder → Bulk		
		Powder → Bulk → Nano-particles		
		Bulk → Powder → Nano-particles		
		Nano-particle → Bulk → Powder		
6.		The element with a valency of 4 is		
		Carbon		
		Nitrogen		
		Oxygen		
		None of these		
7.		Carbon Nanotube is which dimensional material		
		1D		
		2D		
		3D		
		0D		
8.		The number of carbon atoms in Buckminster fullerene is__		
		60		
		8		
		10		
		20		
9.		What kind of bonds are present in diamond?		
		Covalent bond only		
		Ionic bond only		

		Mix of covalent and ionic bond		
		Metallic bonds		
10.		The nanomaterial with a good antibacterial property is		
		Ag		
		Au		
		Cu		
		Fe		
11.		The colour of the nano gold particles is _____		
		Yellow		
		Orange		
		Red		
		Variable		
12.		Size of the nanomaterials in between		
		Less than 100 μm		
		1 to 100 μm		
		1 to 100 nm		
		Greater than 200 nm		
13.		Among all which statement is correct for nanomaterials.		
		Bulk materials have higher surface area to volume ratio compare to Nanomaterials.		
		Graphene is a 2D nanomaterial		
		Carbon nanotube is a 2D nanomaterial		
		None of above		
14.		Among all which one is a Top-down method for the synthesis of nanostructure materials.		
		Ball milling		
		Hydrothermal		
		Sol-gel		
		Chemical precipitation		
15.		Among all the 1D nanomaterial is		
		Nanorods		
		Nanosheet		
		Nanoparticles		
		Quantum dots		
16.		Which of the following is the principal factor which causes the properties of nanomaterials to differ significantly from other materials?		
		Size distribution		
		Specific surface feature		
		Quantum size effects		
		All of the above		
17.		In sol-gel method		
		Metal nitrate salts are used		
		Metal alkoxides are required		
		Precipitation is formed		

		High temperature is need		
18.		In Bottom-up method starting materials are present in.....		
		Gas/Liquid state		
		Gas/Solid state		
		Liquid/Solid state		
		None of the above		
19.		The configuration of Buckminsterfullerene is _____		
		12 Hexagons and 22 Pentagons		
		18 Hexagons and 15 Pentagon		
		20 Hexagon and 12 Pentagon		
		15 Hexagon and 15 Pentagon		
20.		A material having one dimension in nano range and other two are out of nano range is called		
		1D material		
		2D material		
		3D material		
		0D material		
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21.		Single layer of graphite is called		
		Graphene		
		Carbon nanotube		
		Graphene oxide		
		None of these		
22.		The colour of gold nanoparticles is		
		Red		
		Green		
		Depends upon the size of the nanoparticle		
		None of the above		
23.		Among all which one is a metal-based nanomaterial		
		Carbon nanotube		
		Fullerene (buckyball)		
		Graphite		
		None of the above		
24.		Graphene is a		
		Single layer of graphite		
		Single layer of gold		
		Single layer of Silicon		
		None of the above		
25.		1 nm = ____ angstrom		
		1		
		10		
		100		
		1000		
26.		Diamond, Graphite are the allotrope of _____		
		Carbon		

		Nitrogen		
		Oxygen		
		None of these		
27.		Graphene is which dimensional material		
		1D		
		2D		
		3D		
		0D		
28.		The smallest bucky ball cluster is _____		
		C ₆		
		C ₈		
		C ₁₀		
		C ₂₀		
29.		What kind of bonds are present in diamond?		
		Covalent bond only		
		Ionic bond only		
		Mix of covalent and ionic bond		
		Metallic bonds		
30.		The chemical composition of Buckminster Fullerene?		
		C ₆₀		
		C ₅₀		
		C ₅₅		
		C ₄₅		
31.		When the other atoms trapped inside fullerenes to form inclusion compounds is known as _____		
		Exohedral fullerenes		
		Endohedral fullerenes		
		Exothermic fullerenes		
		Endothermic fullerenes		
32.		Size of the nanomaterials in between		
		Less than 100 μm		
		1 to 100 μm		
		1 to 100 nm		
		Greater than 200 nm		
33.		As the particle size decreases surface area.		
		Increases		
		Decreases		
		No change		
		None of above		
34.		Among all which one is a Top-down method for the synthesis of nanostructure materials.		
		Ball milling		
		Hydrothermal		
		Sol-gel		
		Chemical precipitation		

35.		Which one of the following is an example for thermal properties of nanostructure?		
		Melting temperature		
		Scattering of light		
		Reflection of light		
		All of the above		
36.		Which of the following is the principal factor which causes the properties of nanomaterials to differ significantly from other materials?		
		Size distribution		
		Specific surface feature		
		Quantum size effects		
		All of the above		
37.		The nanostructures are categorized into _____ types according to their dimensions?		
		one		
		two		
		three		
		None of the above		
38.		Which one of the following is an example of zero-dimensional nanostructure		
		Nano rods		
		Nanospheres		
		Nanosheets		
		All of the above		
39.		Graphene has _____ structure		
		Three-dimensional structure		
		Pyramidal		
		Planar		
		Bipyramidal		
40.		A material having two dimensions in nano range and other is out of nano range is called		
		1D material		
		2D material		
		3D material		
		0D material		