**UNIT-V**

**CHEMISTRY OF ENGINEERING MATERIALS**

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| 1. | Major component of Portland cement is   1. Cao b. Mgo c. 3Cao.SiO2 d.SiO2 | ( a ) |
| 2. | Which of the following constituents of cement contain least heat of hydration  a.C2S b.C4AF c.C3A d.C2A | ( a ) |
| 3. | The main raw materials required for the manufacture of Portland cement   1. Lime stone+clay b.Limestone+sand c.Alumina+sand c.clay+sand | ( a ) |
| 4. | When lime is exposed to air, it slowly absorbs   1. Nitrogen b. Oxygen c. Carbon dioxide d. Sulphur | ( b ) |
| 5. | Tobermonite gel is chemically  a.Hydrated tricalcium silicate b.Hydratedtricalcium aluminate c. Hydrated dicalcium silicate d. Slaked lime. | ( a ) |
| 6. | Which of the following constituents of cement has least setting time?  a.Dicalcium silicate b.Tricalcium silicate c.Tricalcium aluminate d. Tetra calcium aluminate | ( c ) |
| 7. | The high percentage constituent in cement is   1. C3A b.C2A c.C2S d.C3S | ( d ) |
| 8. | The chemical formula for lime stone is   1. Mg Co3  b.CaCo3 c.Na2Co3 d.Li2Co3 | ( b ) |
| 9. | The chemical formula for gypsum is  a.MgSo4.H2O b.CaSo4.2H2O c. CaCl2  d.CaCO3 | ( b ) |
| 10. | An inorganic material that can withstand high temperature without softening or suffering any deformation in shape is called  a.Cement b. Refractory c.Glass d. chalk | ( b ) |
| 11. | Which of the following refractories is neutral ?   1. Magnesite b.Silica c.Dolamite d. Graphite | ( d ) |
| 12. | A good refractory material must  a.possess low softening temperature b.Undergo spalling c. Be chemically inactive d.Contain high thermal expansion | ( c ) |
| 13. | Refractoriness of a refractory can be measured by   1. Pyrometric cone test b. Acid test c. Penetration test d.None | ( a ) |
| 14. | Silica is an example of   1. Basic refractory b. acidic refractory c.neutral refractory d. fusion | ( b ) |
| 15. | In basic environment,preferably refractory should not be   1. Basic b. Acidic c. Neutral d. None of these | ( b ) |
| 16. | An example of basic refractory is   1. Dolomite b.Silica c.Magnesite d. Chromite | ( aorc ) |
| 17. | Most important characteristic of a refractory material is its   1. Strength b.Refractoriness c.Spalling d.None | ( b ) |
| 18. | Higher the pyrometric cone equivalent (PCE),is the softening temperature of refractory   1. Lower b.Higher c.Zero d.Moderate | ( b ) |
| 19. | Breaking,cracking or fracturing of a refractory under high temperature is called  a.Thermal spalling b.Thermal expansion c.Fusion d.cracking | ( a ) |
| 20. | Porosity of a refractory-the abrasion resistance   1. Increases b.nochange c.decreases d.none of these | ( c ) |
| 21. | Machines operations under higher temperature and loads are lubricated by   1. Synthetic oil b.Mineral oil c.Greases d.Solid lubricant | ( d ) |
| 22. | Greases are not suitable for------   1. Watches b.engine parts c.Gear boxes d. None | ( a ) |
| 23. | Lubricants are mainly employed to reduce---   1. Abrasion b.Corrosion c. Wearing d.All of these | ( d ) |
| 24. | Lubricant used in machines working at low temperatures should have-------------   1. High pour point b. low pout point c.High flashpoint d.low flash point | ( a ) |
| 25. | Graphite dispersed in oil is called----------   1. Dispersion lubricant b.Graoil c.grease d. Oildag | ( d ) |
| 26. | Generally for liquid lubricants  a)Flash and fire points are identical b)Flash point > pour point  c)Flash point < fire point d)Flash point > fire point | ( ) |
| 27. | A lubricant is a chemical substance used to  a)Reduce viscosity b)Reduce frictional resistance c)Increase thermal d)Inverse dimensional stability | ( b ) |
| 28. | The most suitable lubricant for watches and clocks is  a)Bazel nut oil b) Grease c)Palm oil d)Tallow oil | ( a ) |
| 29. | Animal and vegetable oils  a)Are not oxidized easily b)Have good oiliness c)Are very cheap  d)Do not change viscosity in use | ( b ) |
| 30. | The fore most important property of lubricating oil is its  a)Oiliness b)Cloud point c)viscosity index d)Fire point | ( c ) |
| 31. | The viscosity of liquids changes with respect to the temperature  which is Expressed in terms of  a)Flash point b)Fire point c)Viscosity index d)Pour point | ( c ) |
| 32. | The possible deterioration of rubber sealings and packings  in contact of lubricating oils is indicated by  a) Pour point b)Aniline point c)Cloud point d)Flash point | ( b ) |
| 33. | Which of the following oil is suitable for thick film lubrication  a)Petroleum oils b)Mineral oils c)Vegetable oils d)None of these | ( a ) |
| 34. | --------- type of lubrication is involved in delicate machines like washing,  sewing machines etc  a)Fluid film b)Thin film c)Extreme pressure d)None of these | ( a ) |
| 35. | Which of the following posses least oiliness  a)Mineral oils b)Animal oils c)Vegetable oils d)Grease | ( a ) |
| 36. | Property of an oil to sticky onto the surface of machine parts under  Conditions of heavy load is called  a)Pour point b)Oilness c)Viscosity d)Emulsification | ( b ) |
| 37. | Lubricats for internal combustion engines should have  a)Low viscosity b)Low viscosity index c)High viscosity index  d)Low pour point | ( b ) |
| 38. | For light cutting operations, are used  a)Ordinary mineral oil b)Heavy oils c)Lard oil d)Vegetable oils | ( a ) |
| 39. | Neutralisation number is called  a)Acid number b)Saponification number c)Base number  d)None of these | ( a ) |
| 40. | For determination of viscosity of thin lubricating oils  a)Redwood viscometer-1 b)Redwood viscometer-1  c)Viscometer d)Able apparatus | ( b ) |
| 41. | The ------- reveal the suitability of lubricating oil at low temperature  a)Flash and fire points b)Cloud and pour points  c)Neutralisation number d)None of these | ( b ) |
| 42. | --------- is commercially available as ‘Molykotes’  a)Graphite b)Tungsten c)Molybdenum disulphide d)None of these | ( c ) |
| 43. | The suspension of graphite in oil is termed as  a)Aqua dag b)Oil dag c)Emulsion d)Molykotes | ( b ) |
| 44. | In nano material, atoms/molecules are fabricated in nano scale range  a)1-10 nm b)100-120 nm c)10-20 nm d)1-10 µm | ( a ) |
| 45. | The term nano stands for  a)1 billionth of centimeter b)1 billionth of meter  c)1 billionth of foot d)None of these | ( b ) |
| 46. | Who is the father of nanomaterial science?  a)Graham bell b)Dalton c)Richard Feynmen d)Newton | ( c ) |
| 47. | Nanomaterials are classified into ---------- types  a)2 b)1 c)5 d)3 | ( d ) |
| 48. | Which of the following is considered as one-dimensional  in the nano scale  a)Quantum dots b)Carbon nano tubes c)Fullerenes d)Thin films | ( d ) |
| 49. | Nano wires and nano tubes are ------- in nano scale  a)One-dimensional b)Three-dimensional c)Two-dimensional  d)None of these | ( c ) |
| 50. | The nano tubes of MoS2 and COS2 are used as  a)Semi conductors b)Insulators c)Storage device d)Solid lubricants | ( d ) |