## ANALYTICAL CHEMISTRY

**CHA-491: Analytical Methods for analysis of Fertilizers, detergents, Water and Polymer, Paint and Pigments**  
*(2013 Pattern) (Semester- III) (4Credits)*

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Section I MCQ</th>
<th>Correct Option</th>
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</table>
| 1)    | Which method is used to determine water in fertilizer?  
   a) kjeldahl method  
   b) karl fischer method  
   c) titrimetric method  
   d) reduction iron method | b |
| 2)    | When fertilizer contain nitrogen only in ammonical & nitrate form the nitrate reduced in?  
   a) alkali method  
   b) alkaline method  
   c) nitrate method  
   d) ammonical method | b |
| 3)    | Which method is used to determine nitrate nitrogen method in fertilizer  
   a) direct method  
   b) indirect method  
   c) titrimetric method  
   d) both a& b | d |
| 4)    | What is the purpose to determine total nitrogen?  
   a) for the liberation of nitrogen  
   b) for the liberation of water  
   c) for the liberation of ammonia  
   d) all of the above | c |
| 5)    | Phosphorus is most often occurring in form of………  
   a) meta phosphate  
   b) para phosphate  
   c) ortho phosphate  
   d) all of the above | c |
| 6)    | The nitrate nitrogen content of complex fertilizers can be determined directly ……………  
   a) oxidimetric method  
   b) nitrodimetric method  
   c) titrimetric method  
   d) none of these | a |
<table>
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| 7)       | Which one of them is an example of Cationic detergent  
   a) sodium salts of alkyl sulphates  
   b) polyethers  
   c) alkyl trimethyl ammonium chloride  
   d) sodium salts of alkyl benzene sulfonic acids | c |
| 8)       | Organic builders are normally found in the …..material.  
   a) Alcohol soluble  
   b) Alcohol insoluble  
   c) Both a and b  
   d) none of these | a |
| 9)       | Which indicator is used to determine Iodine value  
   a) Phenolphthalein  
   b) Thymol Blue  
   c) Starch  
   d) EBT | c |
| 10)      | Sodium toluene sulphate is used in detergent to improve its  
   …………  
   a) solubility  
   b) viscosity  
   c) degradation  
   d) liquidity | a |
| 11)      | Which electrode is used to measure the pH?  
   a) hydrogen  
   b) platinum  
   c) glass  
   d) none of these | c |
| 12)      | Tannin and lignin are waste product of  
   a) chemical industry  
   b) paper industry  
   c) Pharma industry  
   d) none of these | b |
| 13)      | Permissible level of Hg in drinking water?  
   a) 2ppm  
   b) 3ppm  
   c) 5ppm  
   d) 10ppm | a |
<table>
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<tr>
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| 14)      | In anaerobic treatment process about………. % of bio-degradable carbon is decomposed into biogas?  
|          | a) 80%  
|          | b) 60%  
|          | c) 95%  
|          | d) 85%  
|          | **c**  |
| 15)      | Chromium is an essential nutrient  
|          | for…………….and…………….metabolism?  
|          | a) plant  
|          | b) animal  
|          | c) human  
|          | d) a & b  
|          | **d**  |
| 16)      | The source of Arsenic in water is  
|          | a) Industrial waste  
|          | b) Fertilizers  
|          | c) Phosphate rocks  
|          | d) All of the above  
|          | **d**  |
| 17)      | What is full form of cce?  
|          | a) carbon carbon extract  
|          | b) carbon cation extract  
|          | c) carbon chloroform extract  
|          | d) carbon crystal extract  
|          | **c**  |
| 18)      | In domestic sewage treatment solid waste are removed from water by  
|          | a) screening  
|          | b) sedimentation  
|          | c) chemical treatment  
|          | d) biological oxidation  
|          | **b**  |
| 19)      | ……………..is an alkyl aryl sulphonate.  
|          | a) LAS (linear alkyl benzene sulphonate )  
|          | b) b-surfactant  
|          | c) c-soaps  
|          | d) d-tannin and lignin  
|          | **b**  |
| 20)      | Nuclear power plants generate the following type of pollutant  
|          | a) low level radioactive liquid waste & heat  
|          | b) thermal pollution  
|          | c) fission product & liquid gas works from fuel element  
|          | d) both a & c  
|          | **d**  |
### Question Bank (2019-2020)  M.Sc.-II Analytical Chemistry
Date: 27 April 2020  Haribhai V. Desai College, Pune 02

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<tr>
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</table>
| 21) | Do analysis involved …………..&……………..methods?  
  a) solvent extraction method  
  b) Winkler iodometric & electrometric  
  c) Nessler's method  
  d) none of these | b |
| 22) | In synthetic organic……..are very useful for removal of industrial waste chemical?  
  a) ion exchange resins  
  b) titration  
  c) purification  
  d) cationic resins | a |
| 23) | Chlorine is simply & rapidly determined by titration with AgNO3 solution using ………as an indicator?  
  a) NaOH  
  b) methyl red indicator  
  c) K2Cr2O7  
  d) Phenolphthalein | C |
| 24) | The degree of microbial mediated O2 consumption in water is known as……  
  a) COD  
  b) BOD  
  c) DO  
  d) turbidity | b |
| 25) | Optimum DO in natural water is…….?  
  a) 4 to 6  
  b) 6 to 8  
  c) 3 to 5  
  d) 1 to 2 | a |

### Section II MCQ
**Analysis of Polymers & Paints & Pigments**

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<th>Answer</th>
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</table>
| 26) | When molecule is just added on to form the polymer the process is called…  
  a) condensation  
  b) polymerization  
  c) addition polymerization  
  d) None of these… | c |
27) The process by which the monomer molecules are linked to form a big polymer molecule is called?  
   a) monomer  
   b) polymer  
   c) polymerization  
   d) none of the above  
   Answer: c

28) Composite property combining of resistance to penetrate scratching is…  
   a) abrasion  
   b) hardness  
   c) tension  
   d) none of the above  
   Answer: b

29) ..........is the physical testing property of polymer?  
   a) tensile strength  
   b) temperature  
   c) Glass  
   d) loss factor  
   Answer: a

30) Polymer synthesized from low molecular weight compounds are called….  
    a) natural polymer  
    b) Synthetic polymer  
    c) organic polymer  
    d) Thermoplastic polymer.  
    Answer: B

31) The colligative property methods are based on?  
    a) Boiling point elevation  
    b) freezing point depression  
    c) a and b  
    d) only a  
    Answer: c

32) LALLS….Stands for?  
    a) light angle light laser scattering  
    b) low angle laser light scattering  
    c) low angle lesser laser stress  
    d) none of the above  
    Answer: b

33) 1-polymers are appeared in natural forms like …  
    a) wood  
    b) cellulose  
    c) cotton  
    d) all of the above  
    Answer: d
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<tbody>
<tr>
<td>34)</td>
<td>The long chain nature of polymers limits such groups to end group this method is called…</td>
<td>b) end group analysis</td>
</tr>
<tr>
<td>40)</td>
<td>The temp at which standard test specimen deflects 0.010 inches is known as…</td>
<td>b) heat deflection temperature</td>
</tr>
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<td>41)</td>
<td>Which of the following is a chemical property of polymer?</td>
<td>c) flammability</td>
</tr>
<tr>
<td>42)</td>
<td>.......... is white inorganic pigment exist in two forms rutile and anastase</td>
<td>a) TiO₂</td>
</tr>
<tr>
<td>43 )</td>
<td>.......... is powerful tool in identifying organic pigments?</td>
<td>c) IR Spectroscopy</td>
</tr>
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<td>44)</td>
<td>...... are added in are non-expensive commonly natural inorganic materials added to the paint in order to increase its volume, to increase the paint film thickness, to impart toughness or abrasion resistance to the coating.</td>
<td>b) Fillers and extenders</td>
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<td>Description</td>
<td>Answer</td>
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<td>----------</td>
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<td>45)</td>
<td>Flash Point is measured by</td>
<td>c</td>
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<tr>
<td></td>
<td>a) Open Cup Apparatus</td>
<td></td>
</tr>
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<td></td>
<td>b) Closed cup Apparatus</td>
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</tr>
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<td></td>
<td>c) Both</td>
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<td></td>
<td>d) None</td>
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<td>46)</td>
<td>Latex paint is………..based paint.</td>
<td>b</td>
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<td></td>
<td>a) Oil</td>
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<td></td>
<td>b) water</td>
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<td></td>
<td>c) solvent</td>
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<td></td>
<td>d) both a and b</td>
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<td>44)</td>
<td>The metallic oxide used in the form of powder in a paint is called as</td>
<td>b</td>
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<tr>
<td></td>
<td>a) extender</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b) base</td>
<td></td>
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<td></td>
<td>c) solvent</td>
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<td></td>
<td>d) none of the above</td>
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<td>45)</td>
<td>The base in a paint is added to</td>
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<td></td>
<td>a) improve the quality of paint</td>
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<td>b) make smooth surface</td>
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<td>c) hide the surface to be painted</td>
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<td></td>
<td>d) none of the above</td>
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<td>46)</td>
<td>The chief ingredient of paint is</td>
<td>c</td>
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<tr>
<td></td>
<td>a) alcohol</td>
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</tr>
<tr>
<td></td>
<td>b) oil</td>
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<td></td>
<td>c) pigment</td>
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<td></td>
<td>d) thinner</td>
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<td>47)</td>
<td>…………. is added to paints to accelerate drying.</td>
<td>b</td>
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<tr>
<td></td>
<td>a) Hg</td>
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<td></td>
<td>b) Pb</td>
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<td></td>
<td>c) Cd</td>
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<td></td>
<td>d) Fe</td>
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<td>48)</td>
<td>…………. is the natural pigment semiprecious mineral Lapiz lazuli.</td>
<td>a</td>
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<tr>
<td></td>
<td>a) Ultramarine Blue</td>
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<td></td>
<td>b) Red Lead</td>
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<td></td>
<td>c) Phthalocyanine blue</td>
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<td>d) Carbon black</td>
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<td>49)</td>
<td>The liquid medium used in enamel paint is</td>
<td>c</td>
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<tr>
<td></td>
<td>a) Thinner</td>
<td></td>
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<td></td>
<td>b) Alcohol</td>
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<td></td>
<td>c) Varnish</td>
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<td>d) None of the above</td>
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<td>50)</td>
<td>The pigments are added in paints to get the desired</td>
<td>b</td>
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<td>a) Smoothness</td>
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<td>b) Color</td>
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<td></td>
<td>c) Appearance</td>
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<td></td>
<td>d) All of the above</td>
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