For GEM Complete Chemistry Material
Contact No. 9080228421
**+2 CHEMISTRY**

**MEMORY HINTS**

### I. Smell / Odour

1. Garlic odour - $\text{P}_2\text{O}_3$
2. Garlic taste - $\text{H}_3\text{PO}_3$
3. Pungent odour - $\text{PCl}_5$
4. Rotten Fish - Phosphine ($\text{PH}_3$)
5. Fish like odour - Amines
6. Foul Smell - Carbylamine
7. Foul smell of Rancid butter - Butric Acid
8. Fruity odour - Ester
9. Pungent odour & fumes in moist air - Acetyl chloride
10. Pungent Odour & no fumes in moist air - Acetic anhydride
11. Mustard like odour - Methyl isothio cyanate
12. Smell of Jasmine (or) Fragrance of Jasmine - Benzyl acetate
13. Smell of bitter almonds - Nitro benzene (or) Benzaldehyde
14. ‘Carbolic acid’-odour - Phenol
15. Hypnotic as hypnone - acetophenone

### II. Common Name

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Chemical Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil of bitter almonds</td>
<td>Benzaldehyde</td>
</tr>
<tr>
<td>Oil of winter green</td>
<td>Methyl salicylate</td>
</tr>
<tr>
<td>No.</td>
<td>Compounds</td>
</tr>
<tr>
<td>-----</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>3</td>
<td>Oil of mirbane</td>
</tr>
<tr>
<td>4</td>
<td>Mustard oil</td>
</tr>
<tr>
<td>5</td>
<td>Supercooled liquid</td>
</tr>
<tr>
<td>6</td>
<td>Wood spirit</td>
</tr>
<tr>
<td>7</td>
<td>Grain alcohol</td>
</tr>
<tr>
<td>8</td>
<td>Reducing sugar</td>
</tr>
<tr>
<td>9</td>
<td>Non-Reducing sugar</td>
</tr>
<tr>
<td>10</td>
<td>Optically inactive amino acid</td>
</tr>
<tr>
<td>11</td>
<td>Calamine</td>
</tr>
<tr>
<td>12</td>
<td>Philosophers wool</td>
</tr>
<tr>
<td>13</td>
<td>Lunar Caustic</td>
</tr>
<tr>
<td>14</td>
<td>Blue vitriol</td>
</tr>
<tr>
<td>15</td>
<td>Purple of cassius</td>
</tr>
<tr>
<td>16</td>
<td>Agua regia</td>
</tr>
<tr>
<td>17</td>
<td>State functions</td>
</tr>
<tr>
<td>18</td>
<td>Path functions</td>
</tr>
<tr>
<td>19</td>
<td>Sodalime</td>
</tr>
<tr>
<td>20</td>
<td>Bordeaux Mixture</td>
</tr>
<tr>
<td>21</td>
<td>Galena</td>
</tr>
<tr>
<td>22</td>
<td>Litharge</td>
</tr>
<tr>
<td>23</td>
<td>Red lead</td>
</tr>
</tbody>
</table>
24. Coinage metals - Cu, Ag, Au
25. Laughing gas - N₂O (Nitrous Oxide)
26. Aspirin - Acetyl Salicylic acid
27. Freon - Dichloro difluoro methane (CF₂Cl₂)
28. Blister copper - 98% copper + 2% impurities
29. Matte - Cuprous sulphide + Ferrous sulphide [Cu₂S + FeS]
30. Methylated (or) denatured spirit - Ehanol with 5% Methanol
31. Phenyl carbinol - Benzyl alcohol
32. Benzoin - Dimer of benzaldehyde
33. Benzhydrol - Diphenyl carbinol
34. Father of co-ordination Chemistry - Werner
35. Mohr’s salt - FeSO₄(NH₄)₂SO₄.6H₂O
36. Potash Alum - K₂SO₄.Al₂(SO₄)₃.24H₂O

III. Reagent

<table>
<thead>
<tr>
<th>Reagent</th>
<th>Composition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Dehydrating Agent</td>
<td>P₂O₅ (or) P₄O₁₀</td>
</tr>
<tr>
<td>2. Fenton’s Reagent</td>
<td>FeSO₄ + H₂O₂</td>
</tr>
<tr>
<td>3. Bayer’s Reagent</td>
<td>Cold dil. alkaline KMnO₄</td>
</tr>
<tr>
<td>4. Lucas Reagent</td>
<td>Con. HCl + anhydrous ZnCl₂</td>
</tr>
<tr>
<td>5. Tollen’s Reagent</td>
<td>Ammoniacal silver nitrate</td>
</tr>
<tr>
<td>6. Fehling’s solution</td>
<td>Sodium Potassium Tartarate in CuSO₄ solution</td>
</tr>
</tbody>
</table>
7. Schiff’s reagent - Benzilidene
8. Hypnone - acetophenone
9. Nitrating Mixture - Con. HNO₃ & Con. H₂SO₄
10. Formalin - Aqueous solution of 40% formaldehyde

IV. Compounds

1. Aldol - 3-hydroxy butanal
2. α-hydroxy ketones - Benzoin
3. Aromatic alcohol - Benzyl alcohol
4. Dihydric alcohol - Ethylene glycol
5. Trihydric alcohol - Glycerol
6. Hygroscopic liquid - Glycol, Glycerol
7. Antifreeze in automobile engine - Glycol, Glycerol
8. Uniary antiseptic - Urotropine, Benzoic acid, salicylic acid
9. Soil sterilizing agent - Chloropicrin CCl₃NO₂
10. Dihydric phenol - Catechol, Resorcinol, Quinol
11. Trihydric phenol - Pyrogallol, Hydroxy quinol, Phluoroglucinol
12. Simple Ether - Dimethyl ether
13. Mixed Ether - Ethyl methyl ether
14. Phenolic Ether - Anisole
15. Unsaturated arophatic aldehyde - Acrolin
16. Unsaturated aromatic aldehyde - Cinnamaldehyde
### V. Physical Terms

<table>
<thead>
<tr>
<th>Term</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Enthalpy valve $\Delta H, \Delta E$</td>
<td>KJ.mole$^{-1}$</td>
</tr>
<tr>
<td>2. Specific heat</td>
<td>Jg$^{-1}$ (or) J kg$^{-1}$</td>
</tr>
<tr>
<td>3. Concentration</td>
<td>moles. dm$^{-3}$</td>
</tr>
<tr>
<td>4. Molar Concentration (x)</td>
<td>mol. dm$^{-3}$</td>
</tr>
<tr>
<td>5. Energy of activation ($E_a$)</td>
<td>Jmol$^{-1}$</td>
</tr>
<tr>
<td>6. Rate of reaction</td>
<td>mol. dm$^{-3}$ S$^{-1}$</td>
</tr>
<tr>
<td>7. Unit for order of reaction (in general)</td>
<td>(dm$^3$)$^{n-1}$ mol$^{1-n}$ sec$^{-1}$</td>
</tr>
<tr>
<td>8. Half life period for I order reaction</td>
<td>min (or) seconds</td>
</tr>
<tr>
<td>9. Entropy (cgs)</td>
<td>cal deg$^{-1}$ mol$^{-1}$</td>
</tr>
<tr>
<td>10. Entropy (SI)</td>
<td>JK$^{-1}$ mol$^{-1}$</td>
</tr>
<tr>
<td>11. Rate constant for I order</td>
<td>S$^{-1}$ (or) min$^{-1}$ (or) time$^{-1}$</td>
</tr>
<tr>
<td>12. Rate constant for zero order</td>
<td>mole. dm$^{-3}$ S$^{-1}$</td>
</tr>
<tr>
<td>13. Quantity of current</td>
<td>coulombs (or) faraday</td>
</tr>
<tr>
<td>14. Electro chemical equivalent</td>
<td>Kg. Columb$^{-1}$</td>
</tr>
<tr>
<td>15. Current (I)</td>
<td>ampere</td>
</tr>
<tr>
<td>16. Time (t)</td>
<td>seconds</td>
</tr>
<tr>
<td>17. Quantity of current</td>
<td>coulomb</td>
</tr>
<tr>
<td>18. Resistance</td>
<td>ohm</td>
</tr>
<tr>
<td>19. Potential difference (V)</td>
<td>volt</td>
</tr>
<tr>
<td>20. Specific Resistance (S)</td>
<td>Ohm – meter</td>
</tr>
<tr>
<td>21. Specific Conductance ($\kappa$)</td>
<td>S meter$^{-1}$ (or) ohm$^{-1}$ meter$^{-1}$</td>
</tr>
<tr>
<td>22. Conductance</td>
<td>ohm$^{-1}$ (or) Siemens (or) mho</td>
</tr>
<tr>
<td>23. Cell constant (s)</td>
<td>metre$^{-1}$</td>
</tr>
</tbody>
</table>
24. Equivalent conductance ($\lambda_c$) - ohm$^{-1}$ m$^2$ (gm.eq)$^{-1}$  
(or) S.m$^2$ (g.equi)$^{-1}$  
(or) mho.m$^2$ (gm.eq)$^{-2}$

25. Molar conductance ($\mu_c$) - S.m$^2$.mol$^{-1}$  
(or) ohm$^{-1}$ m$^2$.mol$^{-1}$

26. Ionic product of water ($K_w$) - mol$^2$.dm$^{-6}$

<table>
<thead>
<tr>
<th>Indicators</th>
<th>pH Range</th>
<th>Acidic</th>
<th>Basic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl Orange</td>
<td>3.1 to 4.4</td>
<td>Pink</td>
<td>Yellow</td>
</tr>
<tr>
<td>Methyl Red</td>
<td>4.4 to 6.2</td>
<td>Red</td>
<td>Yellow</td>
</tr>
<tr>
<td>Phenol</td>
<td>6.8 to 8.4</td>
<td>Yellow</td>
<td>Red</td>
</tr>
<tr>
<td>Phenolphthalein</td>
<td>8.3 to 10</td>
<td>Colourless</td>
<td>Pink</td>
</tr>
</tbody>
</table>

**ORGANIC CHEMISTRY**

Some Important tips to identify organic compounds

1. **Alcohol**: Liberates H$_2$ gas with Na metal
   
   1$^\circ$ alcohol: (i) Gives RED colour in Victor Mayer’s test  
   (ii) No turbidity in Lucas test
   
   2$^\circ$ alcohol: (i) Gives BLUE colour in Victor Mayer’s test  
   (ii) Turbidity appears after 5 to 10 min in Lucas test
   
   3$^\circ$ alcohol: (i) No change (colourless) in Victor Mayer’s test  
   (ii) Turbidity appears immediately in Lucas test
2. Ethers
   (i) Do not liberate H₂ with Na metal
   (ii) Do not give HCl with PCl₅

3. Aldehydes
   (i) Restores the red colour of the Schiff’s base
   (ii) Reduces Tollen’s reagent
   (iii) Reduces Fehling’s solution (except C₆H₅CHO)

(Only acetaldehyde gives yellow precipitate with I₂ & KOH i.e., only acetaldehyde answers Iodo form test)

4. Ketones
   (i) Does not restore the red colour of the Schiff’s base
   (ii) Does not reduce Tollen’s reagent
   (iii) Does not reduce Fehling solution

5. Acid
   (i) Gives effervescence with Na₂CO (or) NaHCO₃ solutions.
   (ii) Gives sweet smelling ester when treated with alcohol + con.H₂SO₄
   (iii) Aqueous solution of acid turns blue into red.
   (iv) Except formic acid, other acids give alkane when heated with soda lime (NaOH + CaO)

6. Iodo form test
   When treated with I₂ & KOH give yellow precipitate. C₂H₅OH, CH₃-CHO, CH₃-CO-CH₃, CH₃-CO-C₆H₅ answer Iodoform test.

II. Dehydrating agents
(i) Con H₂SO₄  (ii) P₂O₅  (iii) KHSO₄  (iv) dry anhydrous ZnCl₂
III. Oxidising Agents

1. KMnO$_4$ / NaOH (Bayer’s Reagent)
2. KMnO$_4$ / Con. H$_2$SO$_4$
3. K$_2$Cr$_2$O$_7$ / Con.H$_2$SO$_4$
4. Na$_2$Cr$_2$O$_7$ / Con.H$_2$SO$_4$
5. Cr.O$_2$Cl$_2$
6. dil. HNO$_3$
7. Con.HNO$_3$
8. Fentons reagent (FeSO$_4$ / H$_2$O$_2$)
9. KMnO$_4$
10. Con. H$_2$SO$_4$
11. V$_2$O$_5$ / O$_2$

IV. Reducing Agents

1. Zn/dil.HCl  2. Sn/dil.HCl
3. Zn/NaOH  4. Zn/NH$_4$Cl
5. Raney Ni  6. Palladium / BaSO$_4$ (Stephen Reduction)
7. Na/Hg + H$_2$O  8. Zn/Hg + con.HCl (Clemmenson Reduction)
9. Na/C$_2$H$_5$ OH  10.NH$_2$–NH$_2$/C$_2$H$_5$ONa (Wolf Kisher Reduction)
11.LiAlH$_4$  12.NaBH$_4$
15.H$_2$/pt  16.Pd/BaSO$_4$ (Rosemund Reduction)

USES OF INORGANIC AND ORGANIC COMPOUNDS

Potash Alum

✱ Purification of water, water proofing of textiles and in dyeing and paper industry.

✱ To arrest bleeding.
Silicones

- Insulator - water repellent - in textiles as lubricants and as polish.
- Mixed with paint for damp - resistant.
- Non-stick coating for pans and in paints and varnish.
- Used for high temperature oil bath, high vacuum pump.

Lead

- Lead pipes-telegraph and telephone wire-bullets and lead accumulators
  - lead champers-alloys like solder, pewter and type metal - tetraethyl lead Pb(C\(_2\)H\(_5\))\(_4\).

Phosphorous trioxide \([P_2O_3] \text{ or } [P_4O_6]\)

- Dehydrating agent.

H\(_3\)PO\(_3\)-Phosphorus acid-used as Reducing Agent

H\(_3\)PO\(_4\)-Phosphoric acid

- Preparation of HBr and HI.
- Souring agent for soft drinks.
- Preparation of phosphate salt of sodium, potassium and ammonium.
- Manufacture of phosphatic fertilisers.

Phosphine-PH\(_3\)

- Smoke screens and Holme’s signal.

Fluorine

- Manufacture of freons.
- CaF\(_2\) - flux in metallurgy.
- NaF - preventing fermentation and dental cavities.
- SF\(_6\) - insulting material in high voltage equipment.
- Teflon - to store hydrofluoric acid.
- UF\(_6\) - separation of U\(^{235}\) and U\(^{238}\).
Helium
✶ To fill balloons for metrological observations.
✶ Used in inflating aeroplane tyres.
✶ Nitrogen - oxygen mixture used by deep - sea divers.
✶ Mixture of oxygen and helium for treatment of asthma.
✶ Liquid helium - cryogenic agent.
✶ Used to produce super conducting magnets for NMR and MRI.

Neon
✶ In discharge tubes and fluorescent bulbs.
✶ Mixed with helium to protect electrical instruments from high voltage.
✶ Used in beacon lights for safety of air - navigation.
✶ Neon lights used in botanical gardens.

Argon
✶ Mixed with 28% nitrogen to fill electrical lamps.
✶ Used in radio valves and tubes.

Krypton and Xenon
✶ Used in filling incandescent metal filament electric bulbs.
✶ Used in discharge - tubes.

Radon
✶ Used in radioactive research and radio-therapy.

Copper
✶ Used to make electric cables, appliance, utensils, containers, calorimeters, coins.
✶ Used in electroplating.
✶ Used to make coins and jewellery.
Chromium

- In chrome plating, alloy steel manufactures (e.g., Chrome steel, Chrome vanadium steel).
- Chrome nickel for armour plates.
- Chromium salts - mordants, coloured glass and pottery.
- Chromium compounds - dyeing and tanning of leather.

Zinc

- Used for galvanisation of iron sheets.
- In extraction of gold and silver.
- Zinc plates and rods in batteries and dry cell.
- Zinc dust and granulated zinc as reducing agents.

Silver

- Silver salts in silvering of mirrors and silver plating.
- AgBr in photography.
- Silver in making electrodes and medicines.
- Silver amalgam in dental filling.

Gold

- Used in coinage, jewellery, ornament vessels decorations and lettering.
- In medicine as tonic.
- Purple of cassius (gold with stannic hydroxides) in making ruby red glass and high class pottery.

Potassium dichromate

- Used in volumetric analysis, caligo printing, dyeing, photography and hardening gelatin film.
- Chrome tanning in leather industry.
Copper sulphate (or) Blue vitriol
- Used as germicide and insecticide.
- Copper sulphate and lime (Bordeaux mixture) as fungicide.
- Used in electroplating, calico printing and electrical batteries.

Silver nitrate or Lunar caustic
- As silver halides in photography.
- Used in silvering mirrors, marking inks, hair dyes, silver plating and laboratory reagent.

Zinc carbonate or Calamine
- Used in ointment for curing skin diseases.
- Used in cosmetics and pigment for rubber.

Purple of cassius or Colloidal gold
- In making ruby-red glass and high class pottery.

Lanthanides
- Pyrophoric alloy in cigarette lighter, toys flame throwing tanks and tracer bullets.
- Ceria, Thoria in gas lamp materials.
- Cerium salts in dyeing cotton, lead storage batteries and catalyst.
- Used in Lanthanido – thermic process.
- Alloy of lanthanides (Mish metal) used in heat resistant, stainless and instrumental steels.
- Mg-alloy (30% mish metal + 1% Zr) used in making jet engine parts.

Actinides
- \(^{235}\text{U}\) - fuel in nuclear power plants and in nuclear weapons.
- Plutonium-238 \(\Rightarrow\) power source in long mission space probes.
Co-ordination Compounds

- Madder dye - red colour, copper phthalocyanine-blue colour.
- Colourimetric agents $\Rightarrow$ 2,2’-bypyridal and 1,10-phenanthroline.
- Gravimetric Analysis-chelating agents-Ni(DMG)$_2$ and Al(oxine)$_3$.
- Complexometric titrations and masking agent - EDTA.
- Chemotherapy $\Rightarrow$ anti-tumour drug. eg: cis-Pt(NH$_3$)$_2$Cl$_2$.
- Synthetic detergents-chelating agent – tripolyphosphate.

Radioactive Isotopes

- Tritium($^1$H$_3$) - measure water content of body.
- Carbon-11 $\Rightarrow$ (Brain scan), Carbon-14 $\Rightarrow$ Radio immunology.
- Iodine-131 $\Rightarrow$ diagnosis of damaged heart muscles and hyperthyroidism.
- Mercury-197 $\Rightarrow$ kidney scan.
- Phosphorous-32 $\Rightarrow$ detection of eye tumours.
- Iron-59 $\Rightarrow$ anemia, Cobalt-60 $\Rightarrow$ treat cancer.
- Sodium-24 $\Rightarrow$ locate blood clots & circulating disorder.
- Strontium-90 $\Rightarrow$ Thickness of coatings and level of liquids in tanks.

Methyl alcohol (or) Methanol

- Industrial solvent, antifreeze in automobiles and to produce formaldehyde.
- Methylated spirit or denatured spirit used in spirit lamp and solvent for wood polish.
- Methanol used as motor fuel with petrol.

Ethyl alcohol (or) Ethanol

- In alcoholic beverage, industrial solvent, pharmaceutical preparation, preservative for biological specimens, preparation of ether, iodoform, acetaldehydade and good solvent for recrystallisation.
**Glycol (or) Ethane-1,2-diol**
- Used as antifreeze in automobiles radiators, coolant in aeroplane engines, an explosive, solvent and preservative.
- Preparations of synthetic fibre, terylene and dioxan.

**Glycerol (or) Propane-1,2,3-trol**
- To manufacture explosive (TNG), antifreeze agent - sweetening agent in beverage - moisturising creams and other cosmetics - copying inks and stamp pad inks.

**Benzyl alcohol (or) phenyl carbinol (or) phenyl methanol**
- Used as local anaesthetic, antiseptic in ointments and as esters in perfumery.
- As esters in perfumery (Benzyl acetate – smell of Jasmine).
- As benzyl benzoate in treating asthma and whooping cough.
- Manufactures of synthetic resins.

**Phenol (or) hydroxy benzene**
- Used in manufactures of dyes, drugs, plastic, explosives, pesticide, antiseptic and germicide.

**Diethyl ether (or) ethoxy ethane**
- Used as refrigerant, anaesthetic, solvent for extraction of organic compounds.
- Medium for preparation of Grignard reagent.

**Anisole (or) Methoxy benzene (or) Methyl phenyl ether**
- Used in perfumery and a starting material in organic synthesis.

**Formaldehyde (or) Methanal**
- 40% aqueous solutions of formaldehyde (Formalin)-preservative for biological specimen and leather tanning.
- Urotropine - medicine for urinary infection.
- To decolourise vat dyes.
- To prepare Bakelite.
Acetaldehyde (or) Ethanol
- For silvering of mirror.
- Its trimer of paraldehyde is hypnotic.
- Preparation of chloroform, acetic acid, ethanol and acetic acid.

Benzaldehyde
- In the preparations of cinnamaldehyde, cinnamic acid and mandalic acid.
- Benzoin (dimer of benzaldehyde) used as tincture benzoin for throat infection.
- In perfumery as flavouring agent.

Acetone (or) Dimethyl ketone (or) Propanone
- Laboratory and industrial solvent.
- Preparation of tranquilisers like sulphonal.
- Manufacture of cordite.

Acetophenone (or) Methyl phenyl ketone
- Used as hypnotic (hypnone) and perfumary.

Benzophenone (or) Diphenyl ketone
- Used in perfumery and in preparation of benzhydrol drop and diphenyl methane.

Formic acid (or) Methanoic acid
- As mordants - leather tanning - coagulating rubber latex - stimulant for growth of yeast - antiseptic - preservative for fruits - treatment of gout - Nickel formate as hydrogenation catalyst.

Lactic acid (or) α-hydroxy propionic acid
- Tanning industry - soft drinks - silver lactate as an antiseptic and astringent - treatment of digestive disorder in children.
- Preparations of lactates, ethyl lactate as solvent.
Oxalic acid (or) Ethane dioic acid

- For removing ink stains and iron stains - as mordent in dyeing and calico printing - ink and metal polishes - redox titration.

Succinic acid (or) Butane dioic acid

- Manufactures of lacquers and dyes - laboratory reagent.

Benzoic acid

- Urinary antiseptic - sodium benzoate used as food preservative - vapours used to disinfect bronchial tube - manufacture of dyes.

Salicylic acid (or) O-hydroxy benzoic acid

- Antiseptic and disinfectant - food preservative - medicine for rheumatic pain - preparations of azo dyes - manufactures of aspirin, salol, methyl salicylate.

Acetyl chloride

- As an acylating agent - organic reagent - preparations of acetic anhydride - detection and estimation of alcoholic and amino groups.

Acetic anhydride

- As an acetylating agent for manufacture of dyes, cellulose acetate - manufacture of aspirin and some drugs.

Methyl acetate

- Good laboratory and industrial solvent.
- Used for preparations of acetoacetic ester.

Acetamide

- Preparations of methyl cyanide - leather tanning - soldering flux - plasticiser in cloth.
REACTIVITY SERIES

- Electronegativity order for H-bond ⇒ F > O > N
- Order of strength of Hydrogen bond is
  H – F ... H > H – O ... H > H – N ... H
- Order of bond strength
  ionic bond > covalent bond > hydrogen bond > dipole-dipole, van der Walls force.
- Order of Ionisation energy
  s > p > d > f
- Order of electron affinity.
  I < Br < F < Cl
- Screening effect of various orbital
  s > p > d > f
- The order of size of Ln^{3+} ions (Lanthanide ions)
  La^{3+} > Ce^{3+} > ... > Lu^{3+}
- Order of reactivity of alcohols with sodium
  Primary > Secondary > Tertiary (or) 1° > 2° > 3°
- Strength of acidity of alcohol
  Primary > Secondary > Tertiary (or) 1° > 2° > 3°
- Reactivity of alcohols with Lucas test
  Tertiary > Secondary > Primary (or) 3° > 2° > 1°
- Strength of the acid
  CH₃CH₂COOH < CH₃COOH < HCOOH < ClCH₂COOH
- Increasing order of acidity
  CH₃COOH < CH₂ClCOOH < CHCl₂COOH < CCl₃COOH
- Basic strength of amines (steric effect)
  (CH₃)₂NH > CH₃NH₂ > NH₃ (or) 2° amine > 1° amine > ammonia
Increasing order of basic strength of amines
3° amine < 1° amine < 2° amine

Order of strength of hydrogen bond and boiling points of amine is
1° > 2° > 3°

Strength of phenols

Strength of acid due to –I effect
+2 CHEMISTRY

Q. 70

Compulsory Problems with Solution

Problems are solved in easiest way
(As per Government Answer key)
சாத்தனு வினுப்பிக்கும்
+2 இயலியம்

* 1 & 3 மத்மியம் விளக்க-விளக்கங்கள்
* 5 & 10 மத்மியம் விளக்க-விளக்கங்கள்
* Q-70(Compulsory) கல்லாட்டக் குற்றகால் விளக்கங்கள்
* 1 மத்மியம் விளக்க அளக்க (காற் மத்மியம் பல்லவ அருக
பொட்டேதியா விளக்கங்கள்) (இல்லை- விளக்ககாலிப்பு சவளதை)
* விளக்க அளக்க (3, 5, 10 மத்மியம் பல்லவ
Q-70 கல்லாட்டக் குற்றகால்)
* புதுக்கையா தின்பு பல்லவ அளக்கட்டு அளக்கு சவளதை
* சோசிகள் புதுக்கையாய், அளக்கட்டு தின்பு
புதுக்கையா சவளதை

CHELLAMMAL TRUST,
2/197, Kayathri Nagar,
Koothur, Trichy-621 216
Cell : 9080228421