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Assignment Module	Applied Chemistry 2nd.

### Part A - (objective type)

- 1- A good liquid lubricant must possess the property of high boiling point.
- 2- Which of the following is not the liquid lubricant? Grease.
- 3- Petroleum oils are also called as Hydrocarbon oils.
- 4- Petrol captured the market up the percentage of 98%.
- 5- A dispersion system consisting of two immiscible liquids is called Emulsions.



- 6- In oil in water emulsions, how much water is present 40-50%.
- 7- Which of the following is the example of the electrolytes? Acids.
- 8- The resistance of the conductor in the electrolytic cell increase
- 9- The process of decomposition of an electrolyte by passing electric current through its solution is called as electrolysis.
- 10- The electrolyte is placed in a special type of cell known as conductance cell.
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## Part B (Subjective)

Q<sup>2</sup><sub>9</sub>

What is addition and condensation polymerization? Give examples.

Ans

Addition and Condensation:

Addition and condensation polymerization is that in addition polymerization the polymers are formed by the addition of monomers with no by-products while in condensation polymerization are formed due to the condensation of two different monomers resulting in the formation of small polyolefins. many common addition polymers are formed from unsaturated monomers (usually having a C=C double bond).



Examples of such polyolefins are polyethenes, polypropylene, PVC, Teflon, Buna rubbers, polyacrylates, polystyrene, and PCTFE.

Examples of naturally occurring condensation polymers are cellulose, the polypeptide chains of proteins, and poly( $\beta$ -hydroxybutyric acid), a polyester synthesized in large quantity by certain soil and water bacteria.

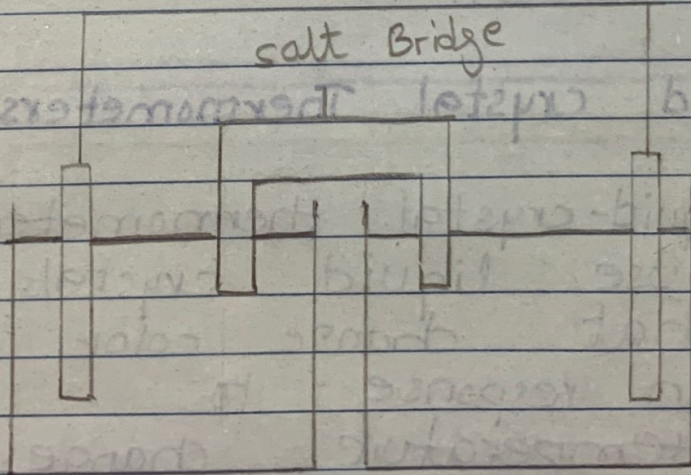
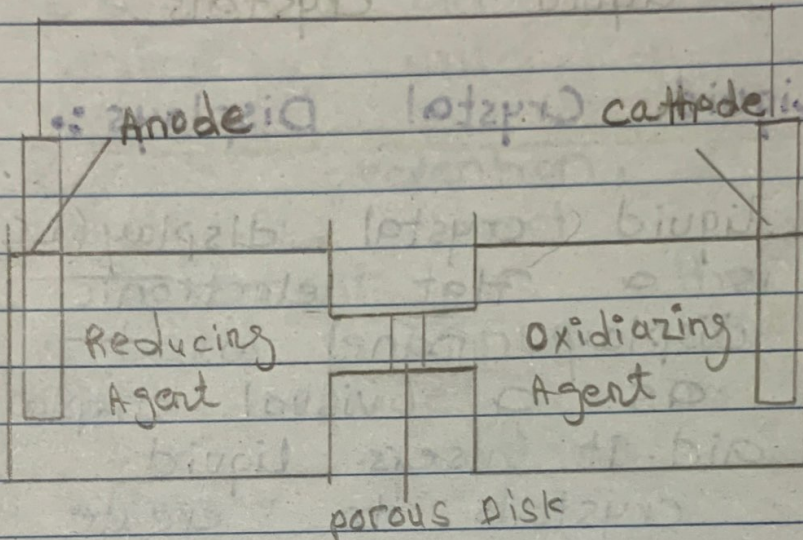
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Q 2  
b

Draw a neat sketch of galvanic cell





Q<sup>m</sup><sub>19</sub>

Write any three applications of liquid crystals.

Ans. Liquid Crystal Displays :-

Liquid crystal display (LCD) is a flat electronic display panel used as a visual display aid. It uses liquid crystals to create visual effects on screen.

• Liquid crystal Thermometers :-

Liquid-crystal thermometer use liquid crystals that change color in response to temperature changes. Mixtures of liquid crystals are enclosed in separate partitions.



- Optical Imaging :-

Optical Imaging is an emerging technology with great potential for improving disease prevention, diagnosis, and treatment in the medical office, at the bedside, or in the operating room.

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Q<sub>9</sub>

Explain suspension polymerization method.

Ans

Suspension polymerization is a heterogeneous radical polymerization process that use mechanical agitation to mix a monomer or mixture of monomers in a liquid phase, such as water, while the monomers polymerize, forming spheres of polymer.

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Q4  
b

Write notes on p-type conducting polymers.

Ans

The band structure of conductive polymers can easily be calculated with a tight binding model. In principle, these same materials can be doped by reduction, which adds electrons to an otherwise unfilled band. In practice, most organic conductors are doped oxidatively to give p-type materials.

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Q  $\frac{5}{9}$

Dielectric constant of gasses ~~posses~~ possess values very close to each other. why?

Ans

Dielectric constant of gasses possess values very close to each other. Does it reflect that all gasses are easy to polarize when exposed to external electric field (the reason of it stems from the gas molecules which are not closely packed, and can aligned/orient rather easily - on a little expense of electric field).

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Q.6  
b

What is a primary battery? Discuss the working and construction of a dry cell.

Ans Primary Battery :-

primary batteries are single use batteries which are cheap, have a lower self discharge rate.

They are generally used in applications where the discharging rate is very low.

The applications of such cells can be seen in watches, smoke detectors etc.

Working and construction of dry cell a

A dry cell consists of a zinc container whose base acts as the negative electrode.

The carbon rod placed at the centre with



a brass cap acts as the positive electrode. This is surrounded by a mixture of manganese dioxide and charcoal in a muslim bag. The electrolyte used is a moist paste of ammonium chloride. The outer body (excluding the base) of the zinc container is insulated with cardboard. When the dry cell is connected in a circuit comprising a bulb, current flows in a circuit due to the chemical reaction that takes place in the cell. This makes the bulb glow. The dry cell is a primary cell and it cannot be recharged.

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Q1  
9 Write the design and working of tidal power.

Ans Tidal power or tidal energy is the form of hydropower that converts the energy obtained from tides into useful forms of power, mainly electricity. Although not yet widely used, tidal energy has the potential for future electricity generation. Tides are more predictable than the wind and the sun. Among sources of renewable energy, tidal energy has traditionally suffered from relatively high cost and limited availability of sites with sufficiently high tidal ranges or flow velocities, thus



constricting its total availability. However, many recent technological developments and improvements, both in design (e.g. dynamic tidal power, tidal lagoons) and turbine technology (e.g. new axial turbines, cross flow turbines), indicate that the total availability of tidal power may be much higher than previously assumed and that economic and environmental costs may be brought down to competitive levels.

Methods of generating tidal energy:

- Tidal barrage
- Tidal stream generator (TSG)
- Dynamic tidal power (DTP)
- Tidal lagoon.