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Question-1:-

Answer: **Microscope:-**

Microscope comes from a Greek word

🡪Micro means small

🡪Skopion Means to see

=>To magnify a small object to several times bigger to visible by naked eye.

=>It is an optical instrument that uses a lens or combination of lenses to produce highly magnitude image of small specimens is known as Microscope.

**Principle of Microscope:-**

It is based on three features and lenses are arranged in sequence

1). Magnification:-

To enlarge the image of the specimens

2). Resolution:-

Separate the details of two image / object

3). Contrast:-

Difference in light intensity between image and background intensity to produce the details visible to eye

Question-2:-

Answer: **Chromatography:-**

🡪 Chroma means “color”

🡪 Graphy means “Plot or trace, measure or down up”

=>In 19th century Dr. Mikhail S Tsvet invented a system similar to paper chromatography

🡪Separation technique

🡪Useful technique for the efficient separation of number of compound present in a mixture

🡪These closely related compound present compound present in a mixture

🡪Also may induce protein, amino acids, lipids, vitamins and drugs etc.

**Phases of chromatography:-**

It consist of two phases

1).Mobile phase 2). Stationary phase

**Mobile Phase:-**

Solvent which carries the analyte (Sample)

**Stationary Phase:-**

The substance on which absorption or attain or adhesion of the analyte (Sample) take place

Question # **3:-**

Answer: **Applications of Flamephotometery:-**

There are some uses of flamephotometery the most common use is

**1). For Quantitative Estimation:-**

Flame photometers are commonly used for the quantitative estimation (Quantity) of sodium, potassium and Calcium etc.

**2). In Agriculture:-**

In field of agriculture and flaming, the technique is applied for soil analysis to check the fertilizer requirements.

**3). In Industries:-**

In beverages industries, soft drinks and fruit juices can be analyzed by using flame photometer.

Question # **4:-**

Answer: **Centrifuge:-**

A centrifuge is a device used for separating particles from solution according to their

🡪Size

🡪Shape

🡪Density

🡪Viscosity of the medium and

🡪Speed.

**Components of Centrifuge;-**

* **Rotor:-**

Head of centrifuge

* **Drive shaft:-**

The main function of shaft in Centrifugal Pump is to transmit the input power.

* **Motor:-**

Provides the power t turn the rotor.

* **Hanging Buckets:-**

To hang tubes

* **Power Switch:-**

Used for giving proper voltage

* **Timer:-**

Giving proper timing to centrifuge for how many time it rotate

* **Tachometer:-**

Speed is checked by tachometer

Question # **5:-**

Answer: **Water Bath:-**

A water bath is a device used in the laboratories to incubate samples in water maintained at a constant (Fix) temperature.

🡪A water bath permits the occurrence of a period constant temperature (up to 100C) for longer period.

🡪Water bath has evolved from a simple heated vessel an instrument.

🡪Available in range of capacities from 2 liters to 28 liters

🡪It also prevents excessive evaporation of the fluid being heated.

**Uses of Water Bath:-**

🡪Water bath is used in medical laboratories to incubate specimens in water kept at a constant temperature (e.g. in microbial, immunology)

🡪Coagulation tests, Blood banking (Thawing Fresh Frozen Plasma)

🡪In microbiology (incubate bottle of culture)

**Components of Water Bath:-**

1. **Vessel or Trough:**

Just like a tank it is made of insulated metal (usually made up of stainless steels with, without an insulated lid.

1. **Electric Element:**

To heat the water contained in the tough

1. **Propeller or Stirrer:**

To circulate the water in the trough in order to maintain a uniform temperature

1. **Thermometer:**

To maintain the temperature (placed separately in the through)

1. **Thermostat:**

To maintain the temperature at a constant level

Question # **6:-**

Answer: **Types of simple centrifuge:-**

🡪Small bench centrifuge (low speed)

🡪Large capacity refrigerated centrifugal

🡪Ultra capacity (preparative ultra-centrifuge i-e used for separating particles according to densities)

🡪Analytical centrifuge (very high speed spinning used in molecular biology)

**Types on the basis of Rotors:-**

1. **Swinging Bucket Rotor:-**

🡪Vertical position at rest

🡪During acceleration of rotor swing out horizontal

1. **Fixed Angle Rotor:-**

Rotor body set at fixed Angle 14 and 40 to vertical

1. **Vertical Tube Rotors:-**Tubes are aligned vertically in the body rotors at all-time parallel position.

**-: THE END:-**