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Paper: Biomedical instrumentation

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QUESTION NO 1 ANS: Microscope: come from Greek words

Micro mean: small

Skopien mean: to see

It is an optical instrument that uses of lens or combination of lenses which produce highly images of small specimens

Principle of microscope: Based on 3 features (lenses are arrange in sequence)

Magnification: This is a principle of microscope to enlarge the image

Resolution: separate the detail of two image or object

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

QUESTION NO 2 Ans: chromatography: Chroma mean "color"

In 19th century Dr- Mikails- isvet invented a system similar to paper chromatography .

Separation technique.

Useful technique "for the efficient separation of number of component present in mixture.

These closely related compound may include protein, amino acid, Lipid, vitamins, and drugs etc.

Principle: It consist of 2 phase

Mobile phase

Stationary phase

Mobile phase: solvent which carries the analyte (sample)

Stationary phase: The substance on which adsorption (attack or adhesion) of the analyte takes place

Paper, is air

QUESTION NO 3: ANS: Flamephotometry

More accurately called flame atomic emission spectrometry.

Flamephotometry is used for determining the concentration of certain metal ions or electrolytes, such as calcium, potassium, sodium, etc.

The instrument is based on earlier work done by German scientists Robert Bunsen and Gustav Kirchhoff in the 1860s.

The test is simple and expensive

Application or uses: Flamephotometry are commonly used for the quantitative estimation of sodium, potassium and calcium, etc.

The field of farming and agriculture the technique is applied for soil analysis to check the fertilization requirements

In the beverage industry soft drinks and fruit juices can be analyzed by using flamephotometry

QUESTION NO 4 ANS: components of centrifuge: 1) Rotor (head of centrifuge)

2) Drive shaft) the main function of shaft in centrifuge pump is to transmit the input power

3) Motor provides the power to turn the rotor.

4) Hanging buckets to hang tube

5) power switch.

6) Timer (revolution per minute controls)

7) Tachometer (speed high or low)

8) Brake

QUESTION NO 5 ANS: waterbath: A waterbath is a device which is used in laboratories to incubate samples in water maintained at a constant temperature

→ A waterbath permits the accuracy of a period constant temperature of (upto 100%) for period.

→ A water has evaluate from a simple heated vessel to an instrument.

→ Available in range of capacities from 2 liters to 23 liters

→ It also prevent excessive evaporation of the fluid being heated.

QUESTION NO 6 ANS: Types of centrifuge: → small bench centrifuge (low speed)

→ Large capacity refrigerated centrifuge

→ Ultra capacity (preparative ultra centrifuge) (used for separating particles according to densities

→ Analytical centrifuge (very high speed spinning used in molecular biology

For example: DNA, RNA, separating