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PAPER : BIO MEDICAL INSTRUMENTATION

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Q NO 5 ANS: - Water Bath :- A water bath is a device use in the laboratories to incubate sample in water maintained at a constant temperature .

- A water bath permits the occurrence of a period constant temperature (of upto 100 c) 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 periods excessive evaporation of the fluid being heated.

Principle :- the water bath is based on the principle that water is constantly agitated by the stirrer and heated with the support of an electric element . the temperature of the liquid medium is mainted through a thermostat which helps it a constant level .

Application :- water bath is used in medical laboratories to incubate specimen in water kept at a constant temperature e-g ----in microbial ,immunology

- Coagulation tests blood blanking (thawing fresh frozen plasma)
- In microbiology (incubate bottle of culture) .

Components :-

- 1) Vessel or trough :- of the insulated metal (usually made up of stainless steel .
- 2) Electric element :- (to heat the water contained in the trough)
- 3) Propeller or stirrer:-to circulate the water in the bough I order to maintain a uniform temperature .
- 4) Thermometer :- to monitor the temperature (placed separately in the through
- 5) Thermostat :- to maintain the temperature at the constant level .

QNO 1 ANS :- **Microscope** :- microscope is an electronic device which are used to see those thing which we can not see through nacked eye .

Or A microscope is an optical instrument that uses a lens or a combination of lenses to produce highly magnified images of small specimens or objects especially when they are too small to be seen by nacked eye

Principle :- many lenses are arrange in sequence to see the final details . based on three important features .

Magnification :- to enlarge the image .

Resolution :- separate the detail of two particle in image .

Contrast :- to produced the detail visible to eye .

- The difference in light intensity between the image and the adjacent background relative to overall background intensity .

QNO 3 ANS :- the application of flame photometry are given below .

- To estimate sodium ,potassium ,calcium ,lithium etc level in sample of serum ,urine ,CSF and other body fluids
- Flame photometry is useful for the determination of alkali and alkaline earth metals

QNO 6 ANS :- **Type of centrifuge** :-

- Small bench centrifuge (low speed)
- Large capacity refrigerated centrifuge
- Ultra capacity (peccoralive ultra centrifuge use for separating particles according to densities .
- Analytical centrifuge (very high speed spinning using in molecular biology .

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QNO 4 ANS :- **Components of centrifuge** :-

- Rotor (head of centrifuge)
 - Drive shaft (the main function shaft in centrifuge pump is to transmit the input power .
 - Motor (provide the power to turn the rotor .
 - Hanging buckets (to hang tubes).
 - Power switch .
 - Timer .
 - Tacho meter (speed is checked by tachometer .
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QNO 2 ANS :- Chromatography :- chroma mean --colour graphy means ---plot as trace measure draw up etc .

In 9th century dr Mikhail s invented a system similar to paper chromatography

- Separation technique
- Useful technique for the efficient separation of number of component present in a mixture
- These closely related compound may include protein amino acid ,lipid , vitamin ,and drugs

Phases:- It consist of two phases

- Mobile phase (solvent which carries the analyte simple)
 - Stationary phase (the substance on which absorption of the analyte take place .
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