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section. : B

Ans no1:- Name of different equipment to used in microbiology lab:-

Microbiology equipment includes microscope, slides, test tube, petri dish, growth medium, both solid and liquids, inoculation loops, pipettes and tips, incubator, autoclave, and laminar flow hoods.

Function of different equipment used in microbiology lab:-

Microscope:-

- There are many types of microscope each of which work on their respective principles. However there is some commonality in them.
- The basic principles in a microscope is magnification. Based on the relative position of the object from the lens are electromagnetic, different position, nature, magnification of the image can be achieved.

Incubator:- - The incubator is based on the principles of maintaining a proper atmosphere for the growth of microorganism.

- Incubator have a heating system that allows for the temperature within the incubator to be adjusted according to the type of organism cultivated inside.
- Similarly, they are provided with adjustment for maintaining the concentration of CO₂ to balance the pH and humidity required for the growth of the organism.

Autoclave:-

- Autoclave used steam as their sterilization agent. The basic principles of an autoclave is all the items within autoclave come in direct contact with the steam for a particular period irrespective of the nature of the material whether it is liquid plastic ware or glassware.
- The amount of time and the temperature depend on the type of material being sterilized and the increase in temperature of the cycle allow for shorter period.

Centrifuge:-

- A centrifuge work on the principles of sedimentation, where the high speed of the rotation causes the denser particle to move away from the center while smaller, less dense particle are forced toward the center.
- Thus the denser particle settle at the bottom while the lighter particle are collected at the top.

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Ans no2:- Chemical and physical method of sterilization:-

Sterilization can be achieved through various means, including heat, chemicals, irradiation, high pressure and filtration. Sterilization is distinct from disinfection, sensitization and pasteurization, in that those methods reduce rather than eliminate all forms of life and biological agents present.

Physical methods of disinfection:-

An effective physical disinfection process is safe, energy efficient, consistently effective, and cost-effective at a larger scale. Physical methods to disinfect water include UV irradiation, heat, sunlight, exposure, Sonic or hydrodynamic pressure and radiation.

Chemical methods of disinfection:-

Chlorination, ozone, ultraviolet light, and chloramine, are primary methods for disinfection. However, potassium permanganate, photocatalytic disinfection, nanofiltration, and chlorine dioxide can also be used.
