Question Bank

Q/ Fill the following blanks:

1. Sterilization destroys or removes …… microorganisms on the external of an instrument or in a liquid.
2. Microscope an instrument which is used for viewing objects that are …… small to be seen easily by the naked eye
3. Hot air sterilization place objects in an oven, require 1 hour at 160oC or 180°C for …… for sterilization. Used to sterilize glassware.
4. In preparation of culture media, we should be pouring the medium into sterile empty petri dishes …….. into each petri dish.
5. …….. = ocular power X objective power
6. Oven is a machine which used for sterilization of medical instruments, especially glassware, glass syringes, as well as …… instruments (Forceps, Scissors, Swabs).
7. In microbiology…… is a technique used to isolate a pure strain from a single species of microorganism, often bacteria.
8. Endospores and some viruses are …… destroyed quickly by boiling.
9. Aims of pasteurization is reduce the number of viable pathogens in liquids, so they are unlikely to ……
10. Agar is a polysaccharide extracted from marine algae, it …… at 95oC.

Q/ Match the following items from (column A) to (column B).

Q/ Put (T) for true, (F) for false sentences, and Correct the false sentences.

1. Disinfection reducing the number of pathogenic microorganisms usually involves the removal of vegetative or non-endospore forming pathogens.
2. Cool the sterilized medium to 4.7 - 55°C. Take out the cotton plug and flame the mouth of the flask over a Bunsen burner.
3. Antiseptic chemical inhibits the growth of microorganisms and applied to living tissue.
4. Fine adjustment larger knob, moves the objectives slightly and allows for fine focusing.
5. Solid media (agar) most commonly used for morphology, pigmentation, hemolysis, such as Blood agar
6. Synthetic Medium prepared from pure chemical substances: e.g., peptone water (0.5% peptone + 1% NaCl in water)

7. Lawn culture are providing a uniform surface growth of the bacterium.
8. Ionizing radiation used mainly in industrial facilities e.g., sterilization of disposable plastic syringes, gloves, specimens' containers and petri dishes.
9. Ethylene oxide kill microorganisms by damaging RNA and protein, used to sterilize disposable medical devices.
10. Blood gar used to distinguish bacteria that destroy red blood cells and platelets (hemolysis).
11. Q1: Put (T) for true, (F) for false sentences, and Correct the false sentences. /24 Marks
12. The Kirby Bauer test is a qualitative assay whereby discs of paper are impregnated with a double concentration of different antibiotics. The discs are placed on the surface of an agar plate that has been inoculated with tested bacteria.
13. Many bacteria, including both gram-positive and gram-negative, may be surrounded by an outer polysaccharide containing layer termed the capsule.
14. During the procedure of bacterial smear preparation, spread the droplets over a circular area in the lateral of the slide, and allow the slide to dry
15. Catalase test is used to identify organisms that produce the enzyme catalase, this enzyme detoxifies oxygen peroxide by breaking it down into water and oxygen gas.
16. A good smear preparation should be a thick layer of cells so that individual cells can be observed.
17. Oxidase test is used to identify microorganisms containing the enzyme cytochrome oxidase. (use the dropper to add a drop of rabbit plasma to the bacteria on the filter paper, and look for the appearance of blue or purple spots, a positive result.
18. In Gram staining techniques, crystal violet acts as the primary stain, it may also be used as a complex stain because it dyes the cell wall of any bacteria.
19. Antimicrobial susceptibility testing (AST), is a widely-used method of evaluating non fastidious bacteria resistance and determining patient treatment plans in clinical settings.
20. Motility test is used to determine whether an organism is capable of distinguish away from a stab mark.
21. Staining is an auxiliary technique used in microscopy to enhance contrast in the microscopic image.
22. Streptococcus agalactiae produces a polysaccharide capsule of (9) antigenic types that all contain sialic acid (Ia, Ib, II, III, IV, V, VI, VII, VIII).
23. The cell wall of Gram-negative bacteria is more chemically complex, thinner and more compact.

Q/ Fill the following blanks

1. Capsules are usually composed of polysaccharides; however, they may also contain …… and polyamines.
2. The purpose of the …… diffusion susceptibility test is to determine the sensitivity or resistance of pathogenic aerobic and facultative anaerobic bacteria to various antimicrobial compounds in order to assist a physician in selecting treatment options for his or her patients.
3. A stain or dyes is a substance that adheres to a cell, giving the cell color, the …… of color gives the cells significant contrast so they are much more visible.
4. Differential stains use two or more stains and allow the cells to be categorized into various groups or types, both the techniques allow the observation of cell morphology, or shape, but differential staining usually provides…… information about the characteristics of the cell wall (Thickness).
5. The Oxidase test can be performed by plate method and wet filter paper method, e.g., Oxidase test negative: Escherichia coli and ……..
6. Bacteria have the ability to develop resistance following ……or sub clinical (insufficient) doses, so more advanced antibiotics and synthetic antimicrobials are continually required to overcome them.
7. Differentiation of bacteria into Gram positive and Gram negative is the …….. step towards classification of bacteria in Gram staining technique.
8. Pass the slide slowly through the flame of a Bunsen burner 3-4 time to …… the bacteria to the slide.

Q / Multiple choice/ Choose the best answer.

1. The normal residents include an array of bacteria, fungi, protozoa, and, to a certain extent, viruses and ……..
    2. Micrococcus
    3. Arthropods
    4. Diphtheria
    5. None of them

2. Direct contact transmission requires …… contact between an infected person and a susceptible person, and then physical transfer of microorganisms.
    1. Biological
    2. Chemical
    3. Same household
    4. None of them

1. Microorganisms are generally regarded as living forms that are microscopic in …… usually unicellular, in structure.

2. Relatively simple
3. Size
4. Colony
5. Two of them

1. Bacteria of medical importance generally measure …….. in diameter.
   2. 0.2-15 µm
   3. 2-1.5 µm
   4. 0.2-1.5 m
   5. None of them
6. Most microorganisms appear almost colorless do not show much structural detail under the light. Therefore, staining techniques used to produce ……contrast.
   7. Shape
   8. Structure
   9. Color
   10. Genetic materials
11. Humans begin to acquire …… from their earliest contacts with their immediate environment, only some are capable of persisting in and on the body.
    12. Microbiota
    13. Indigenous flora
    14. Normal resident flora
    15. All of them
16. Vibrio's shape of bacteria is …… rods and derive the name from their characteristic vibratory motility.
    17. Comma shape
    18. Bacilli shape
    19. Curved shape
    20. Two of them
21. Biological interactions are the effects that the organisms in a community have on ……another.
    22. Three
    23. Some
    24. Two
    25. None of them
26. Microbial interaction may be positive interaction, for example ……..
    27. Ammensalism
    28. Antagonism
    29. Competition
    30. None of them
31. ……is one site that harbor normal flora, especially the moist areas, (such as the groin and between the toes), and it's contagious mucus membrane.
    32. Urinary tract
    33. External Eye
    34. Skin
    35. All of them

36. Q1 / What is the difference between Amensalism (Antagonism) and Commensalism with examples. /10 Mark
37. Q2 / Put (T) for true, (F) for false sentences, and correct the false sentences. /16 Marks
38. Edward Jenner (1798) introduced the term virus in microbiology، virus in Greek means poison.
39. The first documented animal infection by any fungus was made by Bassi, who studied the muscardine disease of silkworm and proved that the infection was caused by a fungus: Candida albicans.
40. Some microorganisms appear almost colorless do not show much structural detail under the light. Therefore, staining techniques used to produce color contrast.
41. Disease transmission is important for implementing proper infection control measures and small-scale prevention campaigns.
42. The large and mixed collection of microbes adapted to the body has been variously called the normal resident flora, or indigenous flora (Belonging or native) some microbiologists prefer to use the terms microflora and commensals.
43. There are four kinds of microorganisms that cause infectious disease: bacteria, fungi, parasites and archaea.
44. Mycoplasma are cell wall deficient bacteria and hence do possess a stable morphology. They occur as round or oval bodies and interlacing filaments.
45. Non-living characteristics of viruses are acellular, that contain no cytoplasm or cellular organelles.

Q/ Define the following:

1. Virion
2. Bacterial cell wall and its functions

Q/ Draw and label the of Gram-positive and Gram-negative bacterial cell wall