**NAME HANZALAH**

**SUBJECT MEDICAL MICROBIOLOGY**

**ID 14092**

**SUBMITTED TO PASHMINA**

**Q NO1**

**ANS**

|  |  |
| --- | --- |
| **PROKARYOTES** | **EUKARYOTES** |
|  |  |
| Organisms made up of cell that lack a cell nucleus or any membrane encased organelles. | Organisms made up of cells that possess a membrane bound nucleus as well as membrane bound organelles. |
| **Major group**  Bacteria archae and blue green algae. | **Major group**  Algae, fungi, protozoa, plants, animals. |
| **Origin**  Around 3.5 billion year ago. | **Origin**  Around 2 billion years ago. |
| **Size**  0.1-5.0 UM | **Size**  5-100 UM |
| **DNA**  DNA Content is low | **DNA**  DNA lie inside nucleus, mitochondria and plastids. |
| **DNA**  DNA is generally circular | **DNA**  DNA is commonly linear |
| **Nucleolus**  Absent | **Nucleolus**  present |
| **Nucleus membrane**  No nuclear membrane | **Nucleus membrane**  Classic membrane present |
| **Chromosome number**  One | **Chromosome number**  More than one |
| **Chromosome shape**  circular | **Chromosome shape**  Linear |
| **Plasmids**  Plasmids may occur | **Plasmids**  Plasmids are rare |
| **Mesosome**  Cell membrane may have in folding called mesosome. | **Mesosome**  Mesosome absent |
| **Genes**  Expressed in groups called operons. | **Genes**  Expressed individually. |
| **Genome**  DNA haploid genome | **Genome**  DNA diploid genome |
| **Membrane bound organelles**  Absent | **Membrane bound organelles**  Present |
| **Mitochondria**  Are absent | **Mitochondria**  Are often present |
| **Ribosomes**  Are 70 s | **Ribosomes**  Are 80 s occur in cytoplasm. |
| **Golgi bodies**  absent | **Golgi bodies**  present |
| **Endoplasmic reticulum**  absent | **Endoplasmic reticulum**  Present |
| **Lysosomes**  absent | **Lysosomes**  Present |
| **Peroxisomes**  Absent | **Peroxisomes**  present |
| **Cytoskeleton**  May be absent | **Cytoskeleton**  Present |
| **Cell wall**  Complex structure containing protein, lipids, and peptidoglycans. | **Cell wall**  Present for plant cells and fungi otherwise absent. |
| **Zygote**  Merozygotic partially diploid. | **Zygote**  Diploid. |
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**Q NO 2**

**ANS**

**NORMAL FLORA**

Normal flora are the microorganism that live on another living organism (human or animal ) or inanimate object without causing disease.

**OR**

The normal flora influences the anatomy, physiology, susceptibility to pathogens, and morbidity of the host.

**ADVANTIGES OF NORMAL FLORA**

* They prevent colonization by pathogens by competing for attachment and nutrients.
* Some synthesize vitamins that are absorbed as nutrients by the host E.G. K and B12.
* Some produce substances that inhibit pathogenic species.
* They stimulate the development of certain tissues e.g. colon and lymphatic tissues in gastrointestinal tract.
* They stimulate production of cross reactive antibodies. Since the normal flora behave as antigens in an animal they induce low levels of antibodies that cross react with similar antigens on pathogens preventing infection or invasion.

**DISADVNDIGES OF NORMAL FLORA**

* Although the normal flora can inhibit pathogens many of its membrane can produce disease in humans.
* Anaerobic in the intestine tract are the primary agents of intraabdominal abscesses and peritonitis.
* Bowel perforations reduce by cancer infarction surgery or gun shoot wounds almost always seed peritoneal cavity and adjacent organs with the normal flora
* Anaerobes can also cause problems within the gastrointestinal lumen. Treatment with antibiotics may allow certain anaerobic species to become predominant and cause disease.
* For example clostridium difficile ,which can remain viable in a patient undergoing antimicrobial therapy may produce pseudomembranous colitis
* Others intestinal pathologic condition for surgery can cause bacterial over growth in the upper small intestine
* Caries ,periodontal diseases abscess foul smelling discharges endocarditis or hallmarks of infection with members of the normal human flora.

**Q NO3**

**PART A**

**ANS- DIFFERENCE BETWEEN ARCHEA AND BACTERIA**

|  |  |  |
| --- | --- | --- |
|  | **ARCHAEA** | **BACTERIA** |
| **cell type** | prokaryotic | Prokaryotic |
| **Cell wall** | Non peptidoglycan | Contains peptidoglycan |
| **Membrane lipid** | Ester linked | Ester linked |
| **1st amino acid in all proteins** | Methionine | Formalmethionine |
| **Antibiotic sensitivity** | No | Yes |
| **DNA organization** | Circular with histone | Circular |
| **Known for** | Extreme environment none infects human | Both helpful and harmful relationships with human |
|  |  |  |

**PART B-**

**DIFFFERENCE BETWEEN EEXOTOXIN AND ENDOTOXIN**

|  |  |  |
| --- | --- | --- |
| **PROPERTIES** | **EXOTOXIN** | **ENDOTOXIN** |
| ORIGIN | G+ AND G- | G- |
| RELEASE | Secreted from living cells or released upon bacterial lysis | Release upon bacterial lysis |
| CMPOSITION | Protein | LPS |
| HEAT RESISTANT | Sensitive | Resistance |
| IMMUNITY | High ,antitoxin toxoid | Low, no toxoid |
| TOXICITY | High, tissue specificity | Low, no tissue specificity |

**PART C-**

**ANS-** **DIFFERENCE BETWEEN PROTOZOA AND FUNGI**

|  |  |  |
| --- | --- | --- |
|  | **FUNGI** | **PROTOZOA** |
| KINGDOM | Fungi | Protista |
| NUTRITIONAL TYPE | **Chemoheterotroph** | Chemoheterotroph |
| CELLULAR | All except yeast | None |
| ARRANGEMENT | Unicellular | Unicellular |
| FOOD ACQUISITION | Filamentous such as mashrooms | Absorptive cytostome |
| **CHARACTERISTICS FEATURE** | Absorptive sexual and asexual spores | **Motility some form cysts** |
| EMBRYO | **none** | None |
|  |  |  |
|  |  |  |

**PART D**

**ANS- DIFFERENCE BETWEEN HOST AND PARASITE**

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| --- | --- |
| **HOST** | PARASITE |
| In organism that harbors and parasitic mutualistic or a commensalist guest the guest typically being provided with nourishment and shelter | In organism that obtains nourishment and shelter on another organism |
| May either get benefited harmed or neither | Always benefits |
| Large | Small |
| Always has a higher organization | Always less organized than the host |

**PART E-**

**ANS- DIFFERENCE BETWEEN PLANT CELL AND ANIMAL CELL**

|  |  |
| --- | --- |
| **ANIMAL CELL** | **PLANT CELL** |
| Smaller | Larger |
| No cell wall | Cell wall |
| Nucleus in center | Nucleus on the side |
| Many vacuoles | One vacuole |
| Cannot synthesis nutrients | Synthesis nutrients |
| No plasmodesmata | Has plasmodesmata |