DEPARTMENT OF MICROBIOLOGY
FACULTY OF SCIENCE
UNIVERSITY OF MAIDUGURI
FIRST SEMESTER EXAMINATION 2011/2012 SESSION

MCB 204: BIOINFORMATICS **3 Units** **Time allowed 3 hours**

Instruction: Answer any FOUR questions. All questions carry equal marks

Q1(a) What is bioinformatics?
(b) Using a clear sketch discuss the application of bioinformatics in biotechnology.

Q2 (a) Explain briefly what is meant by the central dogma of life.
(b) Discuss briefly the structure of DNA.

Q3 (a) List the main objectives of proteomics.
(b) Discuss the different types of bioinformatics tools related to proteomics approaches.

Q4. Describe in detail using specific example how you can search DNA data base for sequence matching.

Q5. Discuss in detail some important gateways for bioinformatics on the internet.

Q6 (a) Discuss briefly the principles of genome annotation.
(b) Discuss the different types of gene-prediction software used in the identification of genes in genomic DNA.

UNIVERSITY OF MAIDUGURI
FACULTY OF SCIENCE
DEPARTMENT OF MICROBIOLOGY

SECOND SEMESTER EXAMINATION 2014/2015 SESSION

MCB 204: BIOINFORMATICS 3 Units Time allowed 2 hours

Instruction: Answer any **FOUR** questions.

Q1. (a) Differentiate between prokaryotic and eukaryotic cells.
(b) Discuss briefly the different bioinformatics tools for processing experimental data.

Q2 (a) What is bioinformatics?
(b) Discuss gene expression in microorganisms.

Q3 (a) What are the main objectives of proteomics?
(b) Discuss the different types of bioinformatics tools related to proteomics approaches.

Q4. Describe in detail using specific example how you can search DNA data base for sequence matching.

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DEPARTMENT OF MICROBIOLOGY

SECOND SEMESTER END OF COURSE EXAMINATION 2010/2011 SESSION
MCB 202 GENERAL MICROBIOLOGY 2 TIME ALLOWED- 2 HOURS
INSTRUCTION: ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO.

1a. what are curds and whey and how are they formed?

b. List organisms commonly associated with food poisoning outbreak.

c. List two bacteria, fungi and algae that can be found in the soil.

d. Discuss the oligotrophic and eutrophic ecosystems.

e. Define extrinsic and intrinsic factors

2a. Discuss microbes in milk and microbes as food

b. Discuss the two basic methods of disease transmission

3a. Discuss the measures for preventing food poisoning and spoilage

b. State the microorganisms involved in bread production

4a.Discuss control measures employed by public health professionals to prevent the spread of infectious diseases

b. Explain the steps involved in the spoilage of unpasteurized milk

5a. Discuss the fecal oral route of disease transmission and its prevention

b. Discuss the micro flora of the mouth and the skin.

UNIVERSITY OF MAIDUGURI
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DEPARTMENT OF MICROBIOLOGY

END OF SECOND SEMESTER 2012/2013 SESSION EXAMINATION

General Microbiology II (MCB 202)

TIME ALLOWED: 2hr 30min

INSTRUCTION: Answer **all** questions in Section A and any **THREE** in Section B

SECTION A: Read **carefully** the statements below and answer TRUE or FALSE. If FALSE, give reason.

1. (a) Spores of Basidiomycota are borne externally on a basidium.

   (b) Lipopolysaccharide is an endotoxin unique to Gram negative bacteria

   (c) Gram negative bacteria appear red/pink under microscope.

   (d) *Helicobacter pylori* is a bacterium that causes peptic/gastric ulcer.

   (e) Coconut cadang-cadang is a viroid.

2. Write the aetiology of the under listed diseases.

   (a) Cholera (b) Gonorrhea (c) Syphilis (d) Meningitis (e) Whooping cough

SECTION B

1. (a) Identify four phyla of fungi and briefly describe the nature of each of their spores.
   (b) Briefly explain the features of Gram negative and Gram positive cell wall.

2. (a) Discuss Baltimore scheme of virus classification using either RNA or DNA viruses.
   (b) List any five general characteristics of fungi.

3. (a) Write orderly, the procedure for Gram stain technique. State the critical step.
   (b) Define virus classification. List five families each of RNA and DNA viruses.

4. (a) Identify three major criteria for classification of bacteria. Elaborate any one criterion mentioned.
   (b) Write short note on subviral agents

5. (a) List the three possible mode of nutrition in fungi. Explain with example any one.
   (b) Distinguish between the following:
   (i). Virion and Viroid
   (ii) Mold and Yeast
   (iii) Exotoxin and Exoenzyme
   (iv) Mycorrhizae and Lichen
   (v) Ectomycorrrhizae and endomycorrrhizae

UNIVERSITY Of MAIDUGURI

FACULTY OF SCIENCE

DEPARTMENT OF MICROBIOLOGY

END OF SECOND SEMESTER EXAMS **2014/2015 SESSION**

MCB 202: General Microbiology II

Duration: 2hrs 30minutes **Unit: 3**

SECTION A: **Answer question one and any other question in this section**

1. a. Using exclusively Whittaker's classification, outline in ascending order the various microbial taxa a named bacterium could be placed.
   b. Identify two basic characteristics each, that enable the bacterium to be placed in the **most** and **least** diverse taxon in (a) above.
   c. If the bacterium has an antigenic variant form, state the taxonomic term that can best describe it.
   d. List three distinct characteristics that can be used to identify the bacterium.
   e. State two microbes that were named based on their ecological and physiological properties.

2. a. Briefly discuss the concept of virus nomenclature.
   b. Enumerate the various characteristics used in classification of viruses.
   c. Compare and contrast between ascospores and sporangiospores.

3. a. Define numerical taxonomy.
   b. Discuss the role of taxonomy in the study of microbial diversity and universality.
   c. In a tabular form, state five differences between the major groups in the kingdom protista

SECTION B: **Answer any two questions in this section**

4. Describe two mechanisms that terrestrial bacteria use to thrive in the ever-changing soil environment and list two genera that use each mechanism

5. Describe five mechanisms by which aquatic bacteria maximize nutrient acquisition and list one genus that uses each mechanism

6. Describe one genus that inhabit the skin, two that inhabit mucous membrane and one obligate intracellular parasite

UNIVERSITY OF MAIDUGURI
(*FACULTY OF SCIENCE*)
DEPARTMENT OF MICROBIOLOGY

End-of-Course Examination Second Semester 2009/2010 Session
MCB204: Introduction to Bioinformatics (2 units)

Instructions: Answer Question 2 and any other three Questions
Time Allowed: 2 Hours

1a. What is Bioinformatics?
1b. Discuss the six (6) skills required becoming a successful Bioinformatician. 17Mks

2a. Biology is an information science and so the Computer has become an essential tool for the biologist just like the microscope. Discuss
2b. What are bioinformatics tools?
2c. Identify and explain the function of any three bioinformatics tools that you know. 19Mks

3a. Biological systems are complex systems; outline the five (5) approaches necessary for studying these biological complexities.
3b. Discuss any three challenges to System Biology 17Mks

4a. List the five (5) path to Bioinformatics
4b. The Modern bioinformatics can be classified into two broad categories, identify these two categories 17Mks

5a. What are the factors that must be taken into consideration when designing bioinformatics tools?
5b. Discuss any five application areas of Bioinformatics 17Mks

GOODLUCK!!!

UNIVERSITY OF MAIDUGURI
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SECOND SEMESTER EXAMINATION 2007/2008 SESSION
MIC: 204 GENERAL MICROBIOLOGY 2 2 Units TIME ALLOWED: 2 hrs
INSTRUCTION: ANSWER THREE (3) QUESTIONS, QUESTION ONE IS COMPULSORY

1 (a). Discuss the microbiota of the soil stating the different types of organisms that is present in the soil with examples.

(b). Define the following terms (a) Eutrophic (b) Oligotrophic (c) Starter culture (d) Resident microorganisms (e) Transient microorganisms

2 (a). Explain in detail two methods of water quality assay.

(b). Give **five** examples of organisms that indicate contamination in water and **five** water borne pathogens

3 (a). Describe the faecal oral route of contamination and state the methods by which they can be controlled or reduced.

4 (a). Differentiate between food infection and food intoxication

(b). What are the major methods of preventing food poisoning and spoilage?

5 (a). Discuss the direct and indirect methods of disease transmission stating the differences between the two methods.

(b). Write on two air borne diseases each that are of viral origin, bacterial origin and fungal origin, stating their causative organism.

Examiner: Mrs. O. O. Akinmusire

Chief Examiner: D. N. Bukbuk

UNIVERSITY Of MAIDUGURI

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SECOND SEMESTER EXAMINATION 2013/2014 ACADEMIC SESSION

MCB 202: GENERAL MICROBIOLOGY II 3 UNITS

INSTRUCTION: Answer question ONE and any other three questions Time allowed 2½ hours

1. *Pseudomonas fluorescence* is a non-spore forming small rod that do not retain crystal violet upon Gram Staining and lives in the presence of oxygen. Using your knowledge of microbial taxonomy,
   a. Show the hierarchical classification of the organism based on the kingdom system of classification.
   b. State one reason each for placing the organism in each level in (a) above.
   c. Describe briefly the process that can be used to identify the organism.
   d. If the organism exits in two physiologically distinct forms, state the taxonomic term that they can be referred to.
   e. State the nomenclature criteria used in naming the organism.

2. a. With the aid of a diagram, describe the morphology of a named fungus
   b. Discuss the significance of fungal spores in microbial taxonomy
   c. List three differences between conidiospores and ascospores

3. a. Discuss "morphology and staining" as a means of microbial identification.
   b. Describe in details the Gram's staining procedure.
   c. In a tabular form, state three differences between algae and protozoa

4. a. Highlight the various characteristics used in viral classification
   b. With the aid of a diagram, discuss the basic structure of a virion
   c. List the various classes of viruses as suggested by David Baltimore and adopted by ICVT.

5. a. Enumerate five advantages of microbial taxonomy
   b. Define any four among the following:
   i. Morphovars ii. Dimorphic fungi iii.Taxonomy iv. Nitrifiers
   v. Methanogens vi Chemoorganotrophs

6. a. Microbial taxonomy comprises three interrelated areas, list and briefly explain them
   b. Compare and contrast between polyphasic and numerical taxonomy
   c. State the criteria used in assigning names to the following microbes
   i. *Escherichiacoli* ii. *Entemoeba histolytica* iii. Picornavirus Iv. *Lactobacilluslactis*

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SECOND SEMESTER 2015/16 SESSION EXAMINATION
MCB 206: ELEMENTS OF PRACTICAL MICROBIOLOGY

4 Units

Instruction: Answer questions on the question paper

Time allowed: 2.30 hours

1. Who first observed microorganisms .....
2. Beside your answer in (1) above, which English scientist made observations of cells strands of fungi .....
3. ..... is the ability of the microscope to distinguish two closely related points which is also known as .....
4. The three major parts of the microscope are .....,
   ....., ...
   Which part of the microscope consist of a series of lenses mounted under the stage which condenses light into a strong beam and sends it through the opening of the stage?
   .....
5. In Gram staining technique, Lugol's iodine acts as
   .....
6. The Acid fast staining technique is particularly useful for observing species of the genus
   .....
7. When a microorganism such as bacterium divides in a population the result of these divisions on laboratory culture medium is a visible mass of bacteria called
   .....
8. ..... is a polysaccharide derived from a marine algae that solidify a culture medium without adding any nutrient
9. Name the method most readily used in bacteriology for the cultivation of microorganisms
   ....., ..., ...
10. Give one example of for each of the following categories of culture media
    i. Differential media .....
    ii. Enriched media .....
    iii. Enrichment media .....
    iv. Indicator media .....
    v. Natural media .....
11. ..... is the medium most widely used for the cultivation of fungi in the laboratory, in an environment that is
    .....
12. Microaerophilic bacteria require a slight oxygen atmosphere. This atmosphere can be developed by placing agar plates or tubes in a large

..... thereby establishing a microaerophilic environment.

13. Sanitization may be accomplished by cleaning with detergent, heat or any agent that lowers microbial content of an environment using ..... agent.
14. In an ordinary hot air oven, the dry heat radiates within and around microorganisms and kills them at a temperature of ..... and exposure for ..... minutes which results in sterilization.
15. ..... lowers the level of microorganisms in milk and dairy products and kills all pathogenic microorganisms present.
16. Antimicrobial agents include two important halogens – Chlorine and Iodine. While Chlorine is used is used in its gaseous form in ..... iodine is used as a 2% alcohol solution as .....
17. Phenol was one of the first disinfectants employed in microbiology by Joseph Lister in 1960. Name any two derivatives of phenol that you know and their uses.
    ..... use .....
    ..... use .....
18. Steam under 15psi pressure will kill microorganism in 15 minutes in the instrument called .....
19. Among the important producers of antibiotics is the mould-like bacterium of the soil belonging to the genus .....
20. An example of a virus that dwells within the nucleus of a host cell is the virus that cause .....
21. *Pseudomonas* spp. possess two (2) pigments that confers the characteristics green colour on the organism on nutrient agar namely ....., ... and is the biochemical test used for its identification.
22. Catalase test is used to differentiate between the genera ..... and .....
23. Pathogen *Candida albicans* can be differentiated from the non-pathogenic species by a biochemical test called .....
24. The acronym IMVC is a biochemical test which stand for:
    .....
    .....
    .....
    .....
25. Fluoride oxalate is an anticoagulant that maintains the level of ..... in the in diabetic patients
26. Malaria is probably the world's most important public health problem. The disease is caused by several species of the protozoa *Plasmodium* which include ....., ...,

.....

transmitted by mosquitoes of the genus .....

27. Name three (3) staining procedures that can be used to detect malaria parasite in the laboratory

.....

.....

.....

28. Bacterial vaginitis is an infection of the vagina usually caused by organisms that multiply when the normal flora has been disturbed. Which specimen (sample) would be collected for laboratory examination to determine the causative organism

..... Excessive use of antibiotics may result to vaginal infection with .....

29. The traditional treatment of malaria is the use of ..... and its derivative .....

30. "Determine" is a strip used for HIV antibody screening test. The result of positive test using this method is .....

31. Distilled water is produced from tap water by water distilling equipment called .....

32. In 1976, Ebola first emerged in Sudan and Zaire. It has an incubation period of 3 to 21 days. The Liberian who brought the Ebola virus to Nigeria and died in Lagos on 24th July 2014 was .....

33. Urinary tract infection may occur in the
    a. Urethra where it is called .....
    b. Bladder where it is called .....
    c. And called urethritis if it develop in the .....

34. All the fungal skin infections are collectively known as "Tinea disease", one of which is a fungal disease of the head called ....., caused by .....

35. Centrifuge is a machine used for the separation of solid suspension (undisolved solids) from a solution to obtain a supernatant solution under the principle of centrifugal force. One of such concentration methods used in stool examination is called .....

    Name any two (2) parasites that can be found in infected stool sample

    i. .....

    ii. .....

DON'T LET THE CHANCE OF A LIFE TIME SLIP AWAY!!

GOODLUCK

Examiner: Sir J. T. Waba

Chief Examiner: Dr. H.S. Bello

DEPARTMENT OF MICROBIOLOGY

I.D. NUMBER _____ **22/04/2017cd**

MCB 206 – Elements of Practical Microbiology = 4 nits C.A TEST (1)

Instructions – Answer All Questions

(Fill in the blank spaces with the appropriate answers)

Q. 1 No one is sure who made the first observation of microorganisms, but an English scientist name _____ made observations of cells in slices of cork tissue and trands of fungi by the mid- 16th century using the microscope.

Q.2 The Gram stain technique was discovered by _____ but named after Hans Christian Gram who developed it.

Q.3 In addition to the lenses, there are several features of the light microscope that enhance their usefulness. One part called the _____ consists of lenses mounted under the stage on which is mounted a shutterlike apparatus called the _____

Q.4 _____ is a polysaccharide derived from a marine algae that solidifies a culture medium on which a pure culture can be obtained by isolating a single microorganism thus, permitting that microorganism to grow and form a _____

Q.5 The two most important members of the Halogen group of disenfectants are _____ and _____ used for water and skin disinfection respectively.

Q. 6 The culture medium most widely used for the cultivation and isolation of fungi in the laboratory is _____

Q.7 The scientist who specializes in the collection of various blood is known as a _____ and the anticoagulant that maintains the level of glucose (sugar) in the diabetic patients is called _____

Q.8 Malaria is probably the words most important public health problem. The disease is caused by several species the protozoa plasmodium transmitted by _____

Q. 9. Using the centrifuge machine ,one concentration method used in stool examination is called _____

Q.10 Agglutination tests are serological tests in which _____ molecules are attached to large particles and combine with a complementary _____ in a patient's serum to form visible clumps or particles to be observer.

"Good Luck"