



(Knowledge for Development)

KIBABII UNIVERSITY

**UNIVERSITY EXAMINATIONS 2022/2023
ACADEMIC YEAR**

SECOND YEAR FIRST TRIMESTER

MAIN EXAMINATION

FOR BACHELOR OF SCIENCE IN NURSING DEGREE

COURSE CODE: NUR 213

**COURSE TITLE: MEDICAL MICROBIOLOGY AND
PARASITOLOGY**

DATE: 15/12/2022

TIME: 9.00 – 12.00PM

INSTRUCTIONS TO CANDIDATES

Answer ALL Section one (1) MULTIPLE CHOICE QUESTIONS and ALL Section two (2) SHORT ANSWER QUESTIONS and any one (1) section THREE (3) LONG ANSWER QUESTION.

TIME: 3 Hours

This paper consists of 7 printed pages. Please Turn Over
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SECTION 1 (MULTIPLE CHOICE QUESTIONS) (50 MARKS)

- Q1. The term pathogenicity is defined as _____?
- The ability of a bacterium to cause disease.
 - The degree of pathogenicity of any bacterial species.
 - The ability of the body defense mechanism to eradicate an infection.
 - The process by which a bacterium is unable to cause disease.
- Q2. The following statement is true about Gram negative bacteria.
- They stain blue with Gram stain
 - They stain pink with Gram stain
 - Their cell wall Contain 90% peptidoglycan
 - They do not stain with Gram stain dye.
- Q3. Which type of specimen is suitable to isolate *S. typhi* when you suspect bacteremia infection?
- Urine
 - Blood.
 - Stool
 - Sputum
- Q4. The following statement is true about miliary tuberculosis.?
- Is form of tuberculosis that is characterized by a wide dissemination into the human body
 - Is form of tuberculosis that is characterized by localization into the human lungs
 - Is form of tuberculosis that is NOT pathogenic to human
 - Is form of tuberculosis that is characterized by localization into the human meninges
- Q5. The following is not a clinical presentation of disease caused by *Treponema Pallidum*?
- Hard chancre occurring on the genital area.
 - Painless enlargement of the lymph nodes.
 - Painless tumors
 - Blood traces in stool.
- Q6. *Klebsiella pneumoniae rhinoscleromatis* causes the following disease
- Chronic inflammatory growth leading to deformity of the nose or distortion of respiratory passages
 - Chronic inflammatory growth leading to deformity of the mouth or distortion of respiratory passages.
 - Chronic inflammatory growth leading to deformity of the mouth or distortion of the lungs
 - Chronic inflammatory growth leading to deformity of the nose or distortion of ear drums.
- Q7. Microbiology is _____?
- A discipline of science that deals with the study of viruses
 - A discipline of science that deals with the study of microorganisms.
 - A discipline of science that deals with the study of bacteriology

- d. A discipline of science that deals with the study of pathogens
- Q8. Which of the following disease is not caused by Staphylococci?
- Pustules
 - Boils
 - Abscess
 - Rheumatoid fever
- Q9. Incubation period for typhoid fever is -----?
- 24 hours
 - 24 days
 - 14 days
 - 14 hours
- Q10. *Neisseria meningitidis* is transmitted in the following way.
- Person to person by contact with infected person
 - Person to person by airborne droplets
 - By ingesting the bacteria in contaminated food
 - Transmitted by flies.
- Q11. Which of the following is not a species of genus *Shigella* species?
- Shigella flexneri*,
 - Shigella sonnei*,
 - Shigella boydii*,
 - Shigella aureus*
- Q12. Which of following is the primary route of *shigellae* Infection.
- Ingestion of *shigellae* via fecal-oral contamination
 - Transfusion of blood and blood products contaminated by *shigallae*.
 - Inhalation of *shigellae* via aerosols.
 - By contact with a person having shigellosis.
- Q13. The sub species *Klebsiella pneumoniae* Pneumoniae.
- Causes bronchio pneumonia with lung abscesses.
 - Causes bacteremia in infants
 - Causes wound infections.
 - Causes urinary tract infections.
- Q14. The following is true about Culture media:
- Are specific mixtures of nutrients and other substances that support the growth of microorganisms.
 - Are chemicals used in the laboratory to prevent growth of microorganisms
 - Are nutrients that specifically support the growth of bacteria.
 - Are specific nutrients that support growth of microorganism at 100°C
- Q15. *Neisseria gonorrhoeae* causes the following conditions except

- a. Causes cervical disease in female where majority are asymptomatic
- b. Cause urethral infection in male where majority are asymptomatic
- c. Causes infertility in female as major complication
- d. Cause urethral infection in male where majority are symptomatic

Q16. The following statement is true about Extra pulmonary tuberculosis

- a. Tuberculosis that affects the lungs only
- b. Tuberculosis that affects lungs and other organs like kidney and heart
- c. Tuberculosis that affects the central nervous system and the lungs
- d. Tuberculosis that affects other organs apart from the lungs.

Q17. Which of the following bacteria is not routinely recovered from stool sample?

- a. *Treponema pallidum*
- b. *Shigella dysenteriae*
- c. *Salmonella typhi*
- d. *E. coli*

Q18. Which of the following strains of *E. coli* causes traveler's diarrhea?

- a. Enterotoxigenic *E. coli*
- b. Enteropathogenic *E. coli*
- c. Enteroaggregative *E. coli*
- d. Enteroinvasive *E. coli*

Q19. Which of the following is a Gram-positive bacterium.?

- a. *Shigella boydii*
- b. *Salmonella typhi*
- c. *Klebsiella pneumoniae*
- d. *Staphylococcus aureus*

Q20. If you want to select for a specific type of bacteria, what type of media would you use?

- A. Nutrient broth
- B. Differential media
- C. Selective media
- D. An autoclave

Q21. The culture media used turn bacteria different colors on a is called a ____ media?

- A. selective
- B. differential
- C. Natural
- D. Broth

Q22. Regardless of the media type, the best temperature for most bacteria is

- A. 10 -15 °C

- A. 25 – 40 °C
- B. 60 °C
- C. 100 °C

Q23. What is the difference between nutrient agar and nutrient broth.

- A. one is liquid and one is solid
- B. one is sterile and one is not sterile
- C. one is acidic and one is basic
- D. one has extra sugar and one does not

Q24. Which of the following require chocolate agar to grow?

- A. *E. coli*
- B. Neisseria
- C. Proteus
- D. Salmonella

Q25. Bacteria that require low oxygen concentration to grow are called?

- A. Microaerophilic
- B. Aerobic anaerobic
- C. Oxidative
- D. Facultative

Q26. Which of the following organisms is gram positive cocci?

- A. *Streptococci aureus*
- B. *Staphylococci epidermidis*
- C. *Staphylococci pneumonia*
- D. *Staphylococci agalactiae*

Q27. Which one of the following is not a component of gram stain?

- A. Methylene blue
- B. Grams iodine
- C. Safranin
- D. Acetone

Q28. Counter stain used in gram stain is?

- A. Methylene blue
- B. Crystal violet

- C. Iodine
- D. Neutral red

Q29. Differential staining property of gram stain is based on?

- A. Difference in techoic acid content
- B. Difference in lipid content
- C. Difference in protoplasmic content of gram negative and gram positive organisms
- D. All of the above

Q30. What is the approximate size of viruses?

- a. 20-400mm
- b. 20-400 μ m
- c. 20-400nm
- d. 20-400ml

Q31. Capsomeres are _____

- a. Protein coat that covers the neoclocapsid.
- b. A membrane structure that covers the envelope.
- c. Individual structural subunits that makes up the capsid.
- d. Is a combination of capsid and nucleic genome

Q32. Based on light and electron microscopic morphology, protozoa are classified into?

- a. Four Phyla
- b. Five Phyla
- c. Six Phyla
- d. Seven Phyla

Q33. The most common form of asexual reproduction in protozoa is called?

- a. Binary fission
- b. Multiple fission
- c. Both
- d. None

Q34. Protozoal parasites belonging to class Rhizopoda are characterized by having

- a. Cilia
- b. Flagella
- c. Cyst
- d. Rhizopoda

Q35. Amoebic dysentery in man and animals is caused by?

- a. Entamoeba (E.) coli
- b. E. gingivalis
- c. E. histolytica
- d. None

Q36. Metronidazole is the drug of choice for?

- a. Amoebiasis
- b. Trypanosomiasis
- c. Giardiasis
- d. Trichomoniasis

Q37. *Trypanosoma brucei* causes _____ disease in human?

- a. African Trypanosomiasis
- b. Sleeping sickness
- c. Both
- d. Nagana

Q38. The suitable sample for identification of Malarial parasite, trypanosome and microfilariae.

- a. Blood sample
- b. Urine sample
- c. Stool sample
- d. Lymphatic fluid

Q39. The main method of prevention and control against parasitic diseases is?

- a. Cleanliness
- b. Vaccination
- c. Deworming
- d. Antibiotics

Q40. Which class does not belong to phylum arthropoda

- a. Diplopoda
- b. Merostoma
- c. Arachnida
- d. Oligochaeta

Q41. Which of the following is a fungal characteristic?

- a. Fungi have a rigid cell wall and are non-motile.
- b. They are prokaryotic cells
- c. All fungi possess cell wall made of peptidoglycan.
- d. Fungi have chlorophyll and are therefore autotrophic

Q42. Superficial mycoses affect _____

- a. Hair, skin and nails
- b. Skin and nails only
- c. Lungs and skin only
- d. Liver and lungs only

Q43. Which of the following causes Tinea corporis?

- a. *E. floccosum*
- b. *M. audouinii*
- c. *T. schoenleinii*

d. *T. tonsurans*

Q44. Pityriasis versicolor is caused by _____?

- a. *Candida albicans*
- b. *Malassezia furfur*
- c. *Piedria hortae*
- d. *Trichosporon beigelli*

Q45. The following statement is true about candidemia.

- a) An invasive candidiasis of the bloodstream
- b) A superficial candidiasis of the blood stream
- c) An invasive candidiasis of the intestines
- d) A superficial candidiasis of the mouth and throat

Q46. The following is the definition of the term disinfection.

- a. The elimination of pathogens by use of physical or chemical procedure, except spores, from inanimate objects.
- b. The elimination of pathogens by use of chemical procedure, except spores, from inanimate objects.
- c. The use of chemical procedure to destroy all microbial life, including large numbers of highly resistant bacterial spores.
- d. The use of a physical or chemical procedure to destroy all microbial life, including large numbers of highly resistant bacterial spores

Q47. The following is true about nucleocapsid.

- a. Nucleic genome enclosed in the capsid
- b. Nucleic acid enclosed in an envelope
- c. Capsomeres enclosed in nucleic acid
- d. Nucleic acid enclosed in capsomeres

Q48. Which of the following is not a disease caused by staphylococci.

- a. Stye
- b. Pustules
- c. Mastitis
- d. Scarlet fever

Q49. *Coccidiomycosis* is acquired by?

- a. Inhalation of conidia
- b. Direct contact with the infected individuals
- c. Sexual intercourse with the infected individual
- d. Ingestion of contaminated food or water

Q50. The dermatophyte infection that penetrates into the hair shaft is called?

- a. Ascus
- b. Endothrix
- c. Exothrix
- d. Conidiospores

SECTION 2 (SHORT ANSWER QUESTIONS) (30 MARKS)

- Q1. Outline the factors to consider in order to produce a good viral vaccine (6mks)
Q2. State the differences between Gram positive and Gram negative bacteria (6mks)
Q3. Describe the clinical presentation of dermatophytosis (6mks)
Q4. Describe the pathogenesis of Amoeba in human (6mks)
Q5. Describe the factors to consider when selecting an Ideal Disinfectant (6mks)

SECTION 3 (LONG ANSWER QUESTIONS) (20 MARKS)

- Q1. Discuss the three clinical stages of syphilis (20mks)
Q2. Discuss the importance of microorganisms (20mks)