

HARAR HEALTH SCIENCE COLLEGE

MEDICAL LABORATORY DEPARTMENTS

Questions on different medical laboratory fields of departments for MODEL Standard internal qualification examination to evaluate final GC student`s certification to passed and failed status assessments at HHSC for their four years of complete and successful requirements.

Good luck

1. Mr. A 40 years old had been showing within these three months for more repeated Headache , fast breathing and weight loss , at his visit of doctors he got Diagnosis and notified that as had exposed for genetically inherited anemia ,so what types of anemia may be Mr.'s is exposed to Genetic disorder type Hemoglobin defect ?

- A. Hemorrhage Pernicious D.
C. Thalassemia ? B. Aplastic

2. If 1 micro liter of your blood contains 5000 Red blood cells and each RBC contains 100,000 molecules of hemoglobin, then each micro liter of blood can transport?

- A. 2 billion molecules of Oxygen?**
B. 103 trillion molecules of Oxygen
C. 1 million molecules of Oxygen
D. 5×10^{30} molecules of Oxygen

3. A 37- year old man presents with dark , blackened spots in his sclera and ear cartilage as well as back pain and restriction of motion with pain and swelling of both knee joints and ankles on foot for this reason lab test showed that with elevated urine homogentistic acid(defective gene disorder on chromosome 3 and autosomal disorder of tyrosine metabolism with absence of enzymes) which caused urine to darken upon standing or with addition of alkaline substances so what will be the major problem in the body of this patient?

- A. Alkaptonuria
B. Proteinuria
C. **Arthritis of spine and fingers?**

D. Albino with acitinic keratosis

4. A. 15 year old woman is brought to the emergency room from school following the sudden development of Severe,, intermittent right flank pain together with nausea, vomiting, and blood in urine a picture typical renal stone, her lab diagnosis shows that was _____ and doctors discussion indicated for Autosomal recessive genetically inherited disorder of amino acid metabolism problem and impaired renal tubular reabsorption that leads to increased cysteine in urinary excretion and kidney stone formation.

- A. Hematuria with bright red urine physical appearance and chemical tests
- B. Hemoglobinuria with dark red urine physical appearance and chemical tests
- C. Hexagonal amino acid crystal in urine microscopically examination
- D. Ketoacidosis with chemical dipstick tests for Ketones
- E. **A and C**

5. An 11 years old male is sent to the Audiometer clinic by his pediatrician for an elevation of Deafness. His teachers note that has not been paying attention at school and add that his academic performance has suffered as a result, PE Assessment from the doctor indicated as coarse faces and large tongue; short stature Corneas clear and his laboratory investigations showed that increased urinary heparan sulfate and dermatan sulfate also his micro pathology looked for amniotic fluid culture during pregnancy / bone marrow leukocytes REILLY BODIES Granules may detect abnormality so that the doctors indicated those for X- linked recessive diseases type II Mucopolysacchardosis what was the Genetic disease type ?

- A. Hunter`s Syndrome
- B. **Down Syndrome ?**
- C. Huller`s Syndrome
- D. Hemophilia A Syndrome
- E. Turner Syndrome

6. A 27 years white male complains of excessive thirst (POLYDIPSIA) and increased urination (POLYURIA) with very diluted urine with his laboratory result low specific gravity (< 1.0006); Low urine Osmolarity (< 200mOsm/L) due to high treatment dosage of ADH - RELEASING Chlorpropamide, Carbamazepine and Clofibrate., so what could be the main reason ?

A. Diabetes insipidus ?

B. Diabetes Mellitus

C. Turner Syndrome

D. Klinefelter Syndrome

7. _____ is a cell-free amplification technique for synthesizing multiple identical copies (billions) of any DNA of interest?

A. PCR

B. Electrophoresis ?

C. ELISA

D. Northern

blotting

8. Sickle cell anemia, the molecular basis of the sickle cell anemia mutation is an AT → TA transversion causing the normal glutamic acid codon in the hemoglobin to be replaced with valine. Is under which types of Mutation

A. Frame-shift

B. Silent ?

C. Nonsense

D.

Missense

9. Which one of the following Bacteria that mostly used and important to study basic molecular biology and genetics?

A. Salmonella

C. Epstein Barr virus

B. Vibrio Cholera

D. E. Coli

10. _____ is the extent to which an experiment, test or any measuring procedure yields the same results on repeated trials

A. Reliability

B. Requirements of quality system

C. Error

D. Validity

11. Which one of the following statement is incorrect?

A. Blood is about 55% cells; 45% plasma

B. Plasma is a complex solution of proteins, Hormones & metabolic substances

C. Plasma/serum is about 55% & 45% corpuscles (formed elements)

12. MCV is can be calculated using the following formula:

a. (Hct /RBC)x10

c. (Hct /Hgb)x10

b. (Hgb/Hct)x100

d. (Hgb /RBC)x10

13. Correct , about capillary blood collection

A. Samples from cold sites give falsely high results of hemoglobin.

B. Preferred when only large volume of blood are required.

C. Samples from cold sites give falsely low results of hemoglobin.

D. Used when vein puncture is visible and practical.

E. all

14. Which one is incorrectly matched with their relationship to the sizes or numbers?

a. WBC > RBC > Platelet in size

b. RBC > Plat > WBCs in number

c. **RBC < WBC < Plates in Size**

d. WBC < Plate < RBC in #

e. Plates < RBC < WBC in size

15. The average amount of hemoglobin in blood of an adult female is closest to which of the following?

a. 0.16g/dl

b. **14g/dl**

c. 27g/dl

d. 45g/dl

e. 200gm%

16. Mr. Nejib Dawid has : PCV = 0.45(l/l) and RBC = $5 \times 10^{12}/l$ result to his whole blood sample from his own specimen and Mr. Habtamu Abate has done test on his blood sample get similar result, what are their result of MCV if these technologist need to know in Fimatoliter

a. 88fl

b. **90fl**

c. 30pg

d. 45%

e. 110fimatoliter

17. A manual WBC count was performed by M.r Abdi Kedir, Hospital Lab technologist. This technologist counted both side of the counting areas of the chamber and his report the WBC for the following: (counting areas = 8 corner square ,total WBC count with 220 and 200cells of hemocytometer/ front and back side of hemocytometer) ?

hint: TWBC = # of WBC counted X d. c. f X 10

Area of counted

a. $2.1 \times 10^3/\mu l$

b. $3.5 \times 10^3/\mu l$

c. $5.3 \times 10^3/\mu l$

d. **$21.0 \times 10^3/\mu l$?**

e. $10.6 \times 10^3/\mu l$

18. During performing ESR test, tilting the ESR tube will

a. Increase the value of ESR

b. Increase the value of ESR?

c. Does not affect the ESR value

19. Which parameter does correlate to each others from the following tested results? From this tested results as RBC = 4.00 million/cmm , Hb = 14.0 g/dl and HCT = 36.0%(hint: Used to estimate values or check data correlation, 'Rules' only apply if red cells are normal in size and Hgb content Relationship: $Hb \times 3 = HCT \pm 3\%$, $RBC \times 3 = Hb$ or $RBC \times 9 = HCT$.)

a. RBC & HCT correlate, Hgb error

b. ESR & HCT correlate, Hct error

c. Hb & HCT correlate, RBC error

d. RBC & Hb correlate, Hgb error

e. Hgb & RBC correlate, Hgb error

20. What are the difference and similarities between Antiseptics & Disinfectants? Mention and discuss both _____.

21. Normally, wet mount is prepared from _____ Specimen.

A. Urine sample

B. Stool Specimen

C. Blood specimen

D. Buffy coat sample

22. Specialist vein finder & blood sample collection professionals are named _____.

A. Phlebotomist

B. Virologist

C. Penologist

D. Veinologist

23. M.rs (mis)-W wants to collect blood sample for CBC like (WBC , Hemoglobin & PCV requested form physician in these case which are needed procedure during sample collection on the patients (clients) for hematological examination? you can choose more recommended type of Anticoagulant.

A. Using EDTA collected blood

- B. Using double oxalate collected whole blood
- C. Using Heparin collected blood sample
- D. Using Sodium Citrate collected blood specimen

24. Which type of urine sample is more bladders incubated & concentrated?

- A. 24 Hrs urine specimen
- B. Random urine specimen
- C. Midstream urine specimen
- D. 1st Morning fecal specimen

E. None

25. Counted 100 cells on one side of Hemacytometer, 110 cells on the other side, Calculate using TLC formula (hint: that mean the total number of WBCs are counted on both side of the channel on same hemocytometer , 100 wbc on the one side channel of the charged 4WS and 110wbc on the other side of this same chameber for the same patient and the same sample) so your answer will be

A. $5.3 \times 10^3/\mu\text{L}$

B. $10.5 \times 10^9/\text{L}$

C. $10.0 \times 10^3/\mu\text{L}$

D. $11.0 \times 10^3/\mu\text{L}$

26. Using Z formula, calculate the WBC for the following: WBC area (4 corner squares) =160 number of WBC total of one sides of the chamber are counted (WBC dilution: 1:20 used for the total Cells counted) so that the answer is

A. $8.0 \times 10^3/\mu\text{L}$

B. $4.0 \times 10^3/\mu\text{L}$?

C. $15.0 \times 10^3/\mu\text{L}$

D. $16.0 \times 10^3/\mu\text{L}$

27. A sample of blood is diluted 1:20 with 2% acetic acid and the Neubauer counting chamber was filled with the thoroughly mixed cell suspension. After a settling time of 2 minutes, 150 white blood cells were counted in four corner squares each with an area of 1mm^2 . the number of white blood cells per liter in the sample is:
- A. 7,500
 - B. 7.5×10^3**
 - C. 7.5×10^{12}
 - D. 7.5×10^9
28. Mrs. Samerawit Ermias (Technologist) was done 1:200 dilution of whole blood on a patient's sample was made and 336 RBCs were counted in an area of 0.2mm^2 . What is her report of the result of the RBCs count?
- A. $3.36 \times 10^{12}/\text{L}$
 - B. $3.36 \times 10^9/\text{L}$
 - C. $7.20 \times 10^{12}/\text{L}$**
 - D. $6.76 \times 10^{12}/\text{L}$
29. Laboratory Technologist , M.r Mohammed was calculating the MCHC using his measured values of Hgb:15/dl, RBC: $4.5 \times 10^6/\text{microliter}$ and Hct : 47ml/dl, so what is his result on Mean cell hemoglobin concentration(MCHC)
- A. 39.1%
 - B. 36.9%
 - C. 67.4%
 - D. 0.674
30. A manual WBC count was performed by M.r Bean, Hospital Lab technologist. This technologist counted both side of the counting areas of the chamber and his report the WBC for the following: (counting areas = 8 corner square ,total WBC count with 220 and 200cells of hemocytometer/ front and back side of hemocytometer)

hint: Total WBC counting calculation

- A. $3.5 \times 10^3/\mu\text{l}$
 - B. $5.3 \times 10^3/\mu\text{l}$?**
 - C. $10.6 \times 10^3/\mu\text{l}$
 - D. $2.1 \times 10^3/\mu\text{l}$
31. Which of the following is not true about stool sample collection?
- a) Diarrheic stool should be examined within 30 minutes of arrival to the laboratory
 - b) Formed stool sample can be examined within 24hours without use of preservatives
 - c) Morning stool sample should be collected to identify load of the intestinal parasites.
 - d) Diarrheic stool should be examined with immediate arrival to the laboratory
 - e) **Formed stool specimens can be examined within weeks without use of preservatives**
32. One is correct about general feature of parasites
- a) Smaller than their host
 - b) Shorter life span than host
 - c) Outnumber than the host
 - d) Can be uni or multi-cellular**
 - e) Have long life span than their hosts
 - f) None
33. Which of the following method is /are used in the prevention and control of the parasites
- a) Safe water supply
 - b) Hand washing after toilet and wearing shoes
 - c) Proper excreta disposal
 - d) Diagnosis and use of treatments
 - e) All**
34. Which one is the function of reference range?
- A. Used to correlate with absence of disease
 - B. Help physicians to have a cut off value
 - C. Used to determine the analyte by quantity
 - D. All**
35. What are the major areas of focus in pre-analytical quality control?
- A. Specimen collection and transport condition

- B. Specimen Receipt, processing and transport to testing lab or referral lab.
- C. Involve Specimen and equipment
- D. All**

36. -----can affect many hematology and clinical chemistry tests. Correct anticoagulant should be used since many anticoagulants interfere with cell morphology or clinical chemistry testing.

- A. **Hemo-concentration** B. Hemo-deletion C. Hemorrhage
- D.

37. Blood specimen collection from vein needs the following issues

- A. Correct site for vein puncture C. Proper patient identification
- B. Enough volume **D. All**

38. Dermal skin puncture selection

- A. **Skin puncture site should be warm, pink and free of cuts, bruises or rashes.**
- B. Do not choose a site that is cool, cyanotic or swollen.
- C. Avoid hemolysis by not squeezing too hard.
- D. All

39. M.r U is a manufacturer/distributor, or donor will not be able to supply equipment of the correct specifications unless the user provides the supplies with sufficient information. If M.r A is inventory manager and user in Bilal Hospital Lab technician. His concepts to include as the correct specifications letter to order the inventor (M.r U) so their communication to include is

- A. Need & Facilities required
- B. Cost, Spares and consumables
- C. Use , maintenance & Reliability and safety
- D. User manual, warranty & support
- E. User Service manuals & Climatic considerations
- F. All of the above must be understood with both M.r U & M.r A**

40. Which of the following chemicals reagents is/are used storage`s condition need temperature under refrigerator?

- A. Creatinine clinical chemistry reagent that used for Kidney function test(KFT)
- B. Tri-sodium citrate ESR determining reagent (anticoagulant)

C. Ammonium oxalate dilution fluid for Platelet count in Hematology order ?

D. A and C are chemical reagents that need refrigerator

E. All

41. Which of the following are/is not correct about lab specimen collection processing, analysis, storage and transportation?
- a. Sample containers have to be dry/sometimes sterile.
 - b. Free from any detergents/contaminations.
 - c. All lab technicians or technologists have to wear
 - d. **All medical lab samples are not infectious.**
 - e. None of the above.
42. Mr. Zy is laboratory technologist in Bilal General Pediatric Referral Hospital and there are the physician lab test orders for many CBC counts (WBC and Hgb e.t.c) that need large amount of blood to do Hematological blood tests on specimen collections to the ordered child coming in to the lab so how and on which site of vein Mr. Zeydan has to withdraw as procedure of choice to obtain blood sample easily?
- a. Basilica vein site of the ante-cubital fossa of arm
 - b. **Medial cubital vein**
 - c. Cephalic vein
 - d. Capillary blood collection
 - e. A & B are correct
43. Which one of the following urine preservatives is crystal and salt form.
- a. **Thymole**
 - b. Chloroform
 - c. Toluidine blue
 - d. Formalin
 - e. Diluted HCL fluid
44. Which of the following urine sample is bladder incubated and more concentrated.
- a. Random urine samples.
 - b. **First morning urine sample.**
 - c. Post prandial urine specimen.
 - d. Clean catch urine samples.
 - e. 24hrs urine and catheterized urine samples
45. One of the following samples is used to test TB patient diagnosis.

- a. Urine
- b. CSF**

- c. Blood
- d. Semen
- e. None

46. Quality specimen and Test results is depend up on the following except.

- a. Time of sample collection.
- b. Diagnostic Treatment before collection of lab samples.**
- c. Site of sample collection.
- d. Amount of specimen processing.
- e. Method of sample transportation before tests.
- f. None

47. Normal color of stool specimen is _____

- a. Brawn
- b. Brown**
- c. White
- d. Dark black
- e. Bulky

48. Which of the following is/ are Safety during collection, processing & transportation?

- a. Masks (e.g. sputum)
- b. Gloves**
- c. Protective eye wear (goggles)
- d. Protective clothing (gown)
- e. A & B
- f. All

49. Preservation of stool, If possible, process before analysis of wet mount:

- a. Liquid stool: $\leq$ 30 minutes of passage, RT.
- b. Semi-formed stool: $\leq$ 1 hour of passage, RT.
- c. Formed stool: $\leq$ 24 hours of passage, 4 °C.
- d. **All are correctly matched.**

50. Translation involves _____, _____ & _____ in correct order of genetic code synthesis

A. **Initiation, elongation & termination ?**

B. elongation , termination &

Initiation

C. termination ,Initiation, & elongation

D. A and B are correct

51. Which one of the following is homozygous recessive individuals die heterozygous individual die?

A. **Recessive lethal allele ?**

B. dominant lethal allele

C. Post pranadial sample

D. Epistasis

52. By convention, we read DNA strands in direction of transcription: -----?

A. **from 5' end to 3'end**

B. from 3' end to 5'end

C. from everywhere

D. from 50' to 30'

53. _____ Refers to conversion of genomic messages from template DNA into messenger RNA.

A. **Transcription** B. translation

C. replication D. termination

54. Which one of the following is start codon that begins during Protein synthesis?

A. **AUG**

B. UGA

C. UAG

D. UAA

55. Which are/is mostly correct about Molecular biology, like DNA, & RNA

A. Study includes from the distribution of human traits

B. Studies family pedigree

C. Studies to the biochemistry of the genetic material

D. **All**

56. _____ is sum of all biological processes by which particular characteristics transmitted from parents to their offspring:

A. **Heredity**

B. Allele

C. Genetics

D. Mitosis

57. Charles Darwin studies & put blue print about genetics and remembered due to?

A. **evolutionary changes**

B. Speciation over time

C. Evolution

D. All

58. _____ talks about mapping of disease genes to specific locations on the chromosomes & Analysis of the molecular mechanism through w/h genes cause disease?

A. **Medical genetics**

B. Molecular genetics

C. Medallion genetics

D. A and B

59. Who was responsible in 1900, that discovered ABO blood group.

A. **Landstainer**

B. Archbald Garrod

C. Johannses

D. Crick & Fredric

60. Which of the following are correctly matched

A. Crystal Violet reagent -----AFS/Zeinheel Neelson stain on TB identification

B. Carbol fuschine----- Gram stain for bacterial gram reaction identification

C. Geimsa staining reagent ----- Sputum smear staining reagent

D. **Methylene blue & Safranin -----used as counter staining reagent**

E. A & C

61. The correct steps of Gram staining chemical?

A. Primary stain ---- Mordant ---- Decolorizer ---- Counter stain

B. **Primary stain ---- Decolorizer---- Mordant ---- Counter stain**

C. Counter stain ---- Decolorizer---- Mordant ---- Primarystain

D. Counter stain ---- Mordant ---- Decolorizer---- Primarystain

62. Of the ff chemical used for WBC dilution fluid to save reagent by Test tube method 10µl with 190µl dilution fluid. (Used if not tomm pipette is available for whole blood dilution)?
 A. Turk`s solution B. 0.01mol/l HCL C. Acetic acid
 D. All?
63. One of the following is source of error in collection of urine specimen except
 A, loss of specimen or inclusion of two morning specimen in 24 hr collection
 B, Wrong type of urine specimen
 C, In adequate mixing of specimen b/f examination
 D, **Appropriate storage condition** E, None
64. Changes that occur in old urine specimen is?
 A, Bacteria will grow and change the PH C, Acetones will evaporate
 B, The concentration of glucose will decrease D, **All**
 E, None
65. which of the following is correct about physical method of urine preservation refrigeration?
 A, Used for short period of time C, Turbidity may occur with precipitate
 B, Prevent bacterial growth D, **All but not" C "**
66. It prevents most urine constituents; it is added in to urine by making small crystal limitation of this method is it causes false positive result of protein test
 A, Boric acid B, Formaldehyde C, Thymole? D, Toluene
 E, Chloroform
67. what type of specimen would be appropriate for both routine urinalysis and bacteriological culture
 A, **Clean-catch** B, Post -prandial C, Random specimen D, First morning
 E, None
68. One is the use of measuring volume of urine? Except

E, None

C, tuber necrosis

E. None

76. Protein is either precipitated out of the urine specimen by means of chemical or it is coagulated out of solution with heat which are ring forming?
 A, Robert-test & Sulphosalicylic acid test? C, Roberts test & Heller's test
 B, Heat & acetic acid & Sulphosalicylic acid test D, Heller's test & Heat & acetic acid
77. _____ is a red pigment found in cytoplasm of cardiac and skeletal muscle cells
 A, Hemoglobin ? B, myoglobin C, Melanin D, Urobilin E, Bilirubin
78. _____ is appears in urine when the normal degradation of cycle is disrupted by obstruction of bile duct or the integrity of liver is damaged due to hepatitis and cirrhosis it does not appear in urine due to jaundice or increase destruction of RBC.
 A, Urobilinogen B, Bilirubin C, Urobilin D, Prohobilinogen E, All
79. After observing the distribution of leukocytes under 40x objective, in at least 10 fields of microscope? Reports as
 A. 5-10 leukocytes / HPF are seen--→ few leukocytes / HPF
 B. 10-20 leukocytes/HPF are seen---> moderate leukocytes/ HPF
 C. When 0-5 leukocytes / HPF are seen--→ normal
 D. **Above 30 leukocytes / HPF / are seen -→ full/field**
 E. All
80. After observing the distribution of Red blood cell under 40x objective, at least 10 fields of microscope
 A. presence of a few is normal
 B. higher numbers are indicator of renal disease
 C. result of bleeding at any point in urinary system
 D. **All**
81. Epithelial Cells from pelvis and urethra of the kidney
 A. Size is larger than renal epithelia's
 B. Those from pelvis area are granular with sort of tail, while those from urethra are oval in shape
 C. Most of the time urethral epithelia is seen with together of leukocytes and filaments
 D. Pelvic epithelia's seen usually with no leukocyte and mucus trade, and are few in number
 E. **All**

82. Epithelial cells distribution reported after looking under 10x objective of microscope
- A. 1-3 epithelial cells /LPF when normal
 - B. 6-14 epithelial / LPF when few
 - C. Full of epithelial cells / LPF when the whole of 10 x objective covered by epithelial cells
 - D. All are correct answers**
83. Major casts that shows highly chronic kidney's fail
- A. hyaline
 - B. white blood cell, and. red blood cell casts
 - C. granular (coarse / fine). waxes, Fatty
 - D. epithelial casts
 - E. All**
84. Which is/are the cause of genetically mutations that is/are inherited from parents to the offspring?
- A. Hemophilia**
 - B. Malaria
 - C. TB
 - D. Diabetics Mellitus
 - E. All
85. Which one of Z ff is /are shortest chromosomes from the others
- A. Y -chromosomes ?
 - B. X- chromosomes
 - C. 25th chromosomes
 - D. A & C are correct
86. Which Types of RNA polymerase in eukaryotes include: Responsible for transcribing all primary transcript for mRNA as well as small nuclear RNAs used in RNA processing.
- A. RNA polymerase II
 - B. RNA polymerase I?
 - C. RNA polymerase III
 - D. None
87. The bond between the base and sugar is called a _____
- A. Glycosidic**
 - B. Hydrogen
 - C. Covalent bond
 - bond.**
 - bond
 - D. All
88. The symbol 5' refers to the carbon in the sugar to which ----- functional group is attached. The symbol 3' refers to the carbon in the sugar ring to which ----- functional group is attached.
- A. a phosphate (PO₄) and a hydroxyl (OH)**
 - B. a hydroxyl (OH) and a phosphate (PO₄)
 - C. CH₄OH Methyl and C₂H₅OH
 - D. None
89. Permanent association between two different organisms that life apart is impossible
- A. Mutualism
 - B. Commensalism
 - C. Parasitism**
 - D. Host
90. Parasite change host tissue cell type to another type is ?

- A. Metaplasia B. Hyperplasia C. Neoplasia D.

Hypertrophy

91. In which of the following consistency of stool the Trophozoites stage of the protozoa distribution is high relatively :
A. Formed B. Soft C. Loose D. **Watery**
92. Preservation of parasites in fecal samples is important for
A. maintaining parasite structure C. Training purposes
B. Future quality control D. **ALL**
93. Test is used for screening for parasitic infection, for detection of bleeding in the intestine is?
A. Kato - Katz technique B. **Occult blood** C. Sedimentation techniques D. ALL
94. Parasite(*Ascaris lumbricoides*) secretes trypsin inhibitor, secretes trypsin prevents host from digesting
A. Carbohydrat B. **Protein** C. Fat D. Meniral
95. "tea tray eggs" or barrel- shaped with a colorless protruding mucoid plug at each end and yellow brown in Color is features of
A. *Ascaris lumbricoides* C. **Trichuris trichuria**
B. Hook worm D. *Enterobius vermicularis*
96. Postmenopousal bleeding is caused by:
A. *Trichuris trichuria* C. *Strongyloides stercoralis*
B. *Enterobius vermicularis* D. **Hook worm?**
97. The infective stage for *Strongyloides stercoralis* is
A. Unfertilized eggs C. Filariform larvae
B. Fully embryonated eggs D. **Rhabditiform larvae**
98. Which of the following Parasites can cause anemia
A. **Hook worm** C. *Trichuris trichuria*
B. *Strongyloides stercoralis* D. ALL
99. Which of the following is the infective stage of Loa loa:
A. **L1 Larval stage ?** C. L2 Larval stage
B. L3 Larval stage D. L4 Larval stage
100. River blindness is cause by:
A. **Onchocerca volvulus** C. *Loa loa*
B. *Wuchereria bancrofti* D. *Brugia timori*
101. Which of the following is True about *T. saginata*
A. Not reported from Ethiopia
B. Strobila : 1000-2000 proglottides
C. Transmitted by Ingesting ova in food or water
D. **Transmitted by ingesting raw or undercooked pork meat infected**

102. Which of the following *Schistosomes* cause bloody diarrhea
 A. **S. mansoni** C. *S. japonicum*
 B. *S. intercalatum* D. *S. haematobium*
103. The sputum is usually bloody, mucoid and rusty brown is features of
 A. *Fasciolopsis buski* C. *Heterophyes heterophyes*
 B. *Metagonimus yokogawi* D. **Paragonimus westermani**
104. Extraintestinal amoebiasis Primarily affect
 A. Lungs B. **Liver** C. Brains D. Heart
105. The only way to distinguish *E. dispar* from *E. histolytica* microscopically is by
 A. Motility C. Size & Shape
 B. Number of Nucleus D. **Erythrophagocytosis ?**
106. Which of the following is TRUE about *Giardia lamblia*
 A. "Falling leaf" in fresh liquid stools
 B. Trophozoites teardrop Shape
 C. Cyst survive 2 months at 8°C in cold water
 D. **ALL**
107. Under the influence of trypsin, *Giardia* trophozoites produce..... , which can causes them to adhere to the surface of enterocytes
 A. Tyrosin B. **Lectin?** C. Eosien D. ALL
108. Which of the following is TRUE about *Trichomonas vaginalis*
 A. Jerky, non-directional motility C. **Has trophozoite stage only**
 B. non-sexual contact Transmission is possible D. ALL
109. is the diagnostic stage of *Trypanosome* species
 A. **Promastigote** C. Epimastigote
 B. Trypomastigote D. Metacyclic
 Trypomastigote
110. You are on duty hour Perform wet mount preparation to stool specimen. The wet mount preparation result indicate 2 sporocysts & 4 sporozoites .
 In your judgment which intestinal coccidian can have such kinds of Microscopic feature?
 A. **Cryptosporidium parvum** C. *Cyclospora cayetanensis*
 B. *Isospora belli* D. *Sarcocystis hominis*
111. Stages the malaria metabolically active form living within the RBC
 A. **Sporozoite** B. Trophozoite C. Merozoite D. Gametocyte
 B. Black water fever is caused by

- A. *P. vivax* B. *P. ovale* C. *P. malariae* D. *P. falciparum*

112. Which of the following is blood stages of Malaria EXCEPT

- A. Trophozoites B. Schizonts C. Gametocytes D. ALL

113. Physician calls to request blood films; a 35 yr old gentleman sent to the laboratory for Microscopic examination of Malaria. The Infected red cell show no change in size.

In your judgment which *Plasmodium species* can have such kinds of feature?

- A. *P. falciparum* B. *P. vivax* C. *P. ovale* D. ***P. malariae***

114. Children who have infections with beta-hemolytic streptococci can develop:

- A. Acute pyelonephritis
B. Acute glomerulonephritis
 C. Chronic glomerulonephritis
 D. Nephrosis

115. *Haemophilus influenza* becomes resistant to ampicillin when the organism produces a(n):

- A. Capsule of polysaccharide material**
 B. Affinity for the beta-lactum ring of the ampicillin
 C. Requirement for hemin
 D. Beta-lactamase

116. Which of the following specimen request is acceptable?

- A. Feces submitted for anaerobic culture**
 B. Foley catheter tip submitted for aerobic culture
 C. Rectal swab submitted for direct smear for gonococci
 D. Urine for culture of acid- fast bacilli

117. A gram- positive coccus isolated from a blood culture has the following characteristics:

Optochin susceptibility	negative
Bacitracin susceptibility	negative
Bile esculin hydrolysis	negative
Hippurate hydrolysis	positive
Catalase	negative

The organism is most likely:

- A. *Staphylococcus aureus*
 B. *Staphylococcus pneumoniae*
C. Streptococcus pyogenes (group A)?
 D. *Streptococcus agalactiae*

118. A urine gram stain shows gram-positive cocci in clusters. To SPECIATE this organism from culture, the technician should perform a coagulase test and a(n):

- A. Catalase
- B. Novobiocin inhibition
- C. Oxidase?**
- D. β - lactamase

119. The following results were obtained from a culture of unknown origin:

Gram stain	Gram- negative intracellular diplococcic
Indophenol oxidase	positive
Glucose	positive
Maltose	negative
Sucrose	negative

The most likely sources of the specimen would be the:

- A. Respiratory tract
 - C. Genitourinary tract**
 - B. Cerebrospinal fluid
 - D. Blood
120. Receiving cannot accept a specimen unless it has:
- A. A correct, legible label
 - B. An uncontaminated, signed requisition with all necessary information
 - C. An intact container with correct media
 - D. All of the above**
121. In pre-analytical stage of quality control one is not important:
- A. Labeling specimen
 - C. sample transport
 - B. Techniques used to identify pathogens**
 - D. specimen management
122. Which of the following sample must be collected for culture before providing antibiotics for the patients?
- A. Urine
 - C. CSF
 - B. Blood**
 - D. stool
123. Mamo a laboratory technician in Dil chora hospital wants to transport stool sample for further test a medium for this purpose is:
- A. Amies transport medium
 - C. MaConkey
 - B. Cary- Blair medium?**
 - D. KIA
124. Loeffler's polychrome (McFadyean) methylene blue stained smear is used to diagnose:
- A. *B. cerus*
 - C. *clostridium tetani*
 - B. *B. anthracis*
 - D. *clostridium perfringes*
125. The deadliest toxin is produced by:
- A. **C. tetani**
 - C. *C. perferenges*
 - B. *C. botulinum*
 - D. *C. difficile*
126. Clear, Complete lysis of RBC by *streptococcus species* is designated as:
- A. **Alpha hemolysis**
 - C. non hemolytic

- B. Beta hemolysis
D. none
127. All are the properties of Neisseria Species except _____?
A. They are oxidase positive
B. **They are motile**
C. They produce acid from oxidation of carbohydrates, not from fermentation
D. Most are Catalase Positive

128. final identification of *C. perfringens* is confirmed by:
A. Nagler reaction
C. lactose reaction
B. McFadyean reaction
D. **coagulase reaction**
129. A 62 year old male patient presented with vague abdominal discomfort, nausea, change in appetite, weakness. Further investigation revealed that he has also experienced a discomforting perianal sensation with migrating flatworm like structure. The most probable parasite causing his sickness is?
A. *E. granulosus*
B. *T. saginata*
C. *Hymenolepis nana*
D. **T. solium**

130. What is the microscopic stage for the parasite above in the question 129 above?
A. Egg
C. cysticercus
B. Adult
D. **hydatid cyst**

131. A 55-year-old Chinese male patient presents abdominal pain, loss of appetite and neurological disorders. The stool examination indicates egg of a parasite. He has recently fed raw pork while he was at camp trip. Given the symptoms, history and the laboratory test, the parasite infected the Chinese man is:
A. *T. saginata*
B. *T. solium*
C. **E. granulosus**
D. *E. multicularis*

132. A child brought by his mother has dizziness and convulsion. His mother reports he has also vomiting, weight loss, & diarrhea. The stool examination indicates a dwarf tapeworm infection. What is the infective stage for this infection ?
A. Cestercus
B. **Proglottids**
C. Egg
D. Scolex

133. A patient admitted to the inpatient ward has fever, pruritus and urticaria. He has also abdominal pain and a palpable swelling at the right upper quadrant. The CT scan indicates the possibility of hydatid cyst on liver. What is the causative agent?
- A. *T.saginata*
 - B. *T.solium*
 - C. E. granulosus**
 - D. *E. multicularis*
134. A marine returned from his mission has abdominal discomfort, loss of weight, loss of appetite and neurological problems. The laboratory test reveals megaloblastic anemia and helminthic infection. What is the most probable helminthic infection he has?
- A. *T.saginata*
 - B. T.solium**
 - C. *E. dimunita*
 - D. *E. multicularis*
135. A person complained of irritation & skin rash after washing his hands and legs at the side of slowly flowing river. He has also noticed that the side of the river was infested with small snails. From the information given, what is the most probable parasitic causative agent?
- A. *S.mansoni*
 - B. S.hematobium**
 - C. *S.japonicum*
 - D. *S. interculatum*
136. In the question 135 above the infective stage of the parasite is:
- A. Eggs
 - B. Cercaria**
 - C. Rhabdity form larva
 - D. Filariform larva
137. A farmer from Ethiopian rural area presents with fever, sweating and abdominal pain. The blood test is negative for any blood parasites, but the stool examination reveals a liver fluke parasite, which usually infects cattle, sheep, and goat. What is the most probable intestinal fluke infected this farmer?
- A. *F.paragonimus*
 - B. *F.buski*
 - C. F.hepatica**
 - D. *F.giganitica*

138. A fisherman from far-east presents abdominal pain, diarrhea, jaundice, and hepatomegaly. The stool examination indicated a liver fluke infection. What is the species of the parasite?

A. *C. sinensis*

B. *P. Westermanni*

C. C. Opisthorichs

D. *O. Felinus*

139. A patient complained of fever, cough, abdominal pain and bloody diarrhea. The physical examination indicated he has hepatosplenomegaly. Laboratory tests revealed eosinophilia and blood fluke. The most probable cause of this complaint is:

A. S. mansoni

B. *S. hematobium*

C. *S. japonicum*

D. *S. intercalatum*

140. A 12 year old boy who came from Awash Arba presents with hematuria. Further investigation indicates he has cystitis and urethritis that result in hematuria. Laboratory test revealed he has parasite in his urine. The parasite is:

A. *S. mansoni*

B. S. hematobium

C. *S. japonicum*

D. *S. intercalatum*

141. The most common form of childhood leukemia is:

A. Acute lymphocytic

B. Acute granulocytic

C. acute monocytic

D. Chronic granulocytic

142. Which of the following measures platelet function?

A. Bleeding time

B. Prothrombin time

C. Thrombin time

D. Partial thromboplastin time

143. The enzyme-linked immunosorbent assay (ELISA) technique for detection of HBsAg :

A. Requires radiolabeled C1q

B. Is quantitated by degree of fluorescence

C. Uses anti-HBs linked to horseradish peroxidase

- D. Uses coated with HBsAg
144. Rheumatoid factor is:
- A. An antigen found in the serum of patients with rheumatoid arthritis
 - B. Identical to rheumatoid arthritis precipitin
 - C. IgG or IgM autoantibody**
 - D. Capable of forming circulating immune complexes only when IgM-type autoantibody is present
145. The antigen marker most closely associated with transmissibility of HBV infection is:?
- A. HBs
 - B. HBe**
 - C. HBc
 - D. HBV
146. Which of the following complement components is a strong chemotactic factor as well as a strong anaphylatoxin?
- A. C3a
 - B. C3b
 - C. C5a**
 - D. C4a
147. Delayed type hypersensitivity is related to:
- A. Contact sensitivity to inorganic chemicals
 - B. Transfusion reaction
 - C. Anaphylactic reaction**
 - D. Bacterial septicemia
148. High titers of antimicrobial antibodies are most often found in:
- A. Rheumatoid arthritis
 - B. Systemic lupus erythematosus**
 - C. Chronic hepatitis
 - D. Thyroid disease
149. A serologic test for syphilis that depends upon the detection of cardiolipin- lecithin - cholesterol antigen is:
- A. FTA- ABS**
 - B. RPR
 - C. MHA- TP
 - D. TPI
150. A patient has the following test results:
- | | |
|------------|-----------------|
| ANA | positive, 1:320 |
| ASO | 50 Todd units |
| Complement | Decreased |

RA Positive

The above results could be seen in patients with:

A. Rheumatic fever

B. Rheumatoid arthritis

C. Lupus erythematosus

D. Glomerulonephritis

151. Immunoassays are based on the principle of:

A. Separation of bound and free analyte

B. Antibody recognition of homologous antigen

C. Protein binding to isotopes

D. Production of antibodies against drugs

152. Which of the following describes an antigen -antibody reaction?

A. The reaction is reversible

B. The reaction is the same as a chemical reaction

C. A lattice is formed at prozone

D. A lattice is formed at postzone

153. Bence Jones protein is:

A. Immunoglobulin catabolic fragments in the urine

B. Monoclonal light chains synthesized de novo

C. Bound light chains in the urine

D. Fab fragments of a monoclonal protein

154. A patient received two units of red blood cells and had a delayed type hemolytic transfusion reaction. Pre transfusion records indicate a negative antibody screen. Repeat testing of the pre transfusion specimen detected an antibody at the antiglobulin phase. What is the most likely explanation for the original results?

A. Red cells were over washed

B. Centrifuge time was prolonged

C. Patient's serum was omitted from the original testing

D. Ant globulin reagent was neutralized

155. The values below were obtained on an automated blood count system performed on a blood sample from a 25 year old man:

	Patient	Normal value
WBC	$5.1 \times 10^3/\mu\text{L}$	$5.0 - 10.0 \times 10^3/\mu\text{L}$
RBC	$2.94 \times 10^6/\mu\text{L}$	$4.6 - 6.2 \times 10^6/\mu\text{L}$
Hgb	13.8 g/dL	14 - 18 g/dL
Hct	35.4%	40 % - 54 %
MCV	128fL	82 - 90 fL
MCH	46.7 pg	27 - 31 pg
MCHC	40%	32% - 36%

These results are most consistent with which of the following?

A. Megaloblastic anemia

B. Hereditary spherocytosis

C. A high titer of cold agglutinins ?

D. An elevated reticulocyte count

156. A Cameroonian diplomat to far east region brought to emergency room by his colleagues has chest pain, cough, night sweats, & hemoptysis. His history also indicates he is experiencing an epilepsy like symptoms. The chest x-ray examination indicates pleural effusion. A laboratory test report shows ova of the parasite in the sputum. Further examination by CT scan reveals a granulomatous abscess in the brain. The most probable parasitic infection of these man is:

A. P. heterotremus

B. *P. miyazakii*

C. *P. uterobilateralis*

D. *P. mexicanus*

157. A 6-year-old child presented with abdominal pain and diarrhea. Further physical examination shows stunt growth, cognitive impairment, & pneumonitis. Stool test report shows Ova of a parasite. The larval form of the parasite is also detected in the sputum. Which of the following is the most probable cause of this compliant?

E. A. lumbricoids

F. *Hook worm*

G. *Pinworm*

H. *S. stercoraries*

158. A 3 year old child attending the pediatric clinic had edematous prolapsed rectum. He had also anemia, malnutrition, and weight loss. His recent history indicted that he was suffering from chronic profuse mucoid & bloody diarrhea with abdominal pains. The stool examination revealed ova of a parasite. Which of the following is the most probable cause of this compliant?

A. *A. lumbricoids*

B. *Hook worm*

C. *Pinworm*

D. T. trichuria

159. A 41 year old HIV positive female patient presents abdominal pain, mucoid diarrhea, nausea, and vomiting. A stool examination indicates larva of a parasite, and blood test shows anemia. Which of the following is the most probable cause of this compliant?

A. *A. lumbricoids*

- B. *Hook worm*
- C. *Pinworm*
- D. S. stercoraries**

160. A 47-year-old woman from the very rural part of Ethiopia complains of anorexia, epigastric pain, weakness & fatigue. A blood test indicates hemoglobin (9g/dl) and WBC count (6000/mm³). A stool examination reveals high load of ova a parasite.

- a. *A. lumbricoids*
- b. Hook worm**
- c. *Pinworm*
- d. *T. trichuria*

161. A father explained that his two pre-school children have nocturnal anal pruritis and sleeplessness. A stool examination was negative for both children. What is the most probable parasitic infection they have?

- A. *A. lumbricoids*
- B. *Hook worm*
- C. Pinworm**
- D. *S. stercoraries*

162. A 55-year-old man from southwestern Ethiopia presents fever, chills, headache, vomiting, & malaise. The physical examination shows epididymitis and Lymphadenitis. The blood test reveals high ESR & marked eosinophilia. The blood film examination detects microfilaria.

- A. *Wuchereria bancrofti* ?
- B. *Brugia malayi*
- C. *Loa loa*
- D. *Onchocerca volvulus*

163. A 44-year-old man recently returned from western Ethiopian region shows itchy, red, and non-pitting swollen areas on the skin of the wrists. He has experienced the bite of black fly while he was in the region. The blood film examination reveals microfilaria. Most probable parasite is:

- A. *Wuchereria bancrofti*
- B. *Brugia malayi*
- C. *Loa loa*
- D. Onchocerca volvulus**

164. When performing a Kovac's indole test, the substrate must contain:

- A. Indole
- B. Tryptophane**
- C. Ornithine

D. Paradimethylaminobenzaldehyde

165. A vaginal smear is submitted for a Gram stain for *Nisseria gonorrhoeae*. The technologist ? finds the following results on the gram stain:

Many white blood cells

Few epithelial cells

Many gram- positive rods

Few gram negative diplococci

Few gram positive cocci in chains

The technologist should:

A. Report out smear positive for gonorrhea

B. Report out smear negative for gonorrhea

C. Request a new specimen due to number of white blood cells

D. **Not** read or report a gram stain on vaginal specimen

166. Which of the following is dimorphic fungus?

A. Sporothrix schenckii

B. *Candidia albicans*

C. *Cryptococcus neoformans*

D. *Aspergillus fumigatus*

167. Cerebrospinal fluid from a febrile 25- year - old man with possible meningitis is rushed to the laboratory for a stat Gram stain and culture. While performing the gram stain, the technologist accidentally spills most of the specimen. The smear shows many neutrophils and no microorganisms. Since there is only enough CSF to inoculate one plate, the technologist should use a:

A. Blood agar plate

B. Chopped agar plate

C. Chocolate agar plate

D. Thayer - Martin plate

168. A small gram - negative rod isolated from an eye culture has the following test results:

X factor requirement	YES
V factor requirement	YES
Hemolysis on rabbit blood agar	NO

The organism is most probably haemophilus:

A. *Influenza*

B. *Parainfluenzae*

C. Haemolyticus

D. *Parahaemolyticus*

169. Antibiotic tested for isolates of *Pseudomonas* species include:
- A. Penicillin
 - B. Erythromycin
 - C. Clindamycin**
 - D. Gentamycin
170. Gram stain examination of a CSF specimen indicates the presence of yeast - like cells with gram- positive granular inclusions. Which of the following techniques should be used next to assist in the identification of this organism?
- A. 10% KOH
 - B. Lactophenol cotton blue
 - C. Indian ink ?**
 - D. Periodic acid - Schiff
171. Which type of microscope would be the most useful in examining viruses and the structure of microbial cells?
- A. Electron**
 - B. Phase contrast
 - C. Dark-filled
 - D. Bright - filled
172. Infection rate is highest for laboratory professionals exposed to blood and body fluids containing.
- A. Hepatitis A
 - B. Hepatitis B**
 - C. CMV
 - D. HIV
173. Which technique can identify HSV, CMV, and adenovirus infection within 24 hours?
- A. Tube monolayers
 - B. Shell vial
 - C. Electron microscope
 - D. PCR ?**
174. A malnourished child has fever, malaise, chills and diarrhea. There is slight hepatomegaly and splenomegaly. Tests show low WBC count. There is no eosinophilia. Amastigotes were found in some tissue. What is the causative agent?

A. Leishmania donovani

B. Leshmania

tropica

C. Leshmania major

D. Leishmania

aethopica

175. This disease causes few lesions that develop slowly and can take more than a year to heal. It is found in Asia, Africa, India, and the middle east. This disease is also found in North western part of Ethiopia. It is a parasitic disease.

A. Leishmaniasis

B. Trypanosomiasis

C. Draconculiasis

D. Filariasis

176. What is the means of transmission for the parasitic disease explained in question number 2?

A. Sexual transmission

B. through Vector's

bite

C. Through contaminated food

D. All

177. A patient complains of burning and itching sensation at her down stairs with some slight discharge. A laboratory examination reveals infection with a flagellate parasite. What is the name of the parasite identified?

A. Enterobius vermicularies

B. Giardia lamblia

C. Dientamoeba fragilis

D. **Trichomona**

vaginalis

178. A football player returning from Sudan was admitted to the intensive care unit of Black lion Hospital with fever and coma. Blood picture revealed severe anaemia. The white blood cells and platelets counts were normal. The serum bilirubin level was elevated. The CSF revealed no parasite while the blood film revealed the causative organism. What is the most probable parasitic infection?

A. Leishmaniasis

B. Malaria

C. **Trypanosomiasis**

D. Filariasis

179. A patient complained of pallor and abdominal distension. On examination, the doctor found that the cause of such distension was increase in size of liver and spleen. Which of the following parasites may cause such clinical presentation?

A. Plasmodium falciparum

B. Leishmania donovani

C. Giardia lamblia

D. **A & B**

180. A 40-year-old man returns from a trip to Thailand with a four-day history of fever and a one-day history of hallucinations and bloody diarrhea. The temperature is 39°C; the rest of the physical examination is normal. A thin blood film reveals that 6% of erythrocytes are parasitized with Plasmodium species. Which Plasmodium species is responsible for this clinical manifestation?

A. Plasmodium falciparum

B. Plasmodium vivax

C. **Plasmodium ovale ?**

D. Plasmodium

malarea

181. A 42-year-old patient with AIDS presents to your office with chronic, intractable, debilitating diarrhea. He says it began not long after returning from a camping trip. He admits to drinking water from a stream without using a filter or boiling it. The stool wet mount examination was negative for any form of parasite. What is the most likely parasitic causative agent?

A. Entamoeba histolytica

B. Giardia lamblia

C. **Cryptosporidium Parvum**

D. Trichomonas

hominis

182. A 24-year-old male patient presents to your office with a fever, headache, and lethargy. He has recently returned from a medical mission, which placed him in many underserved African villages. Your physical exam confirms the fever and also reveals significant lymphadenopathy. His girlfriend states she has noticed increased irritability over the past few days. Given the symptoms and history, what is the most likely diagnosis?

A. American Trypanosomiasis

B. **Sleeping**

Sickness

C. Malaria

D. Toxoplasmosis

183. A biology graduate student who recently visited a rural area in Jimma presents with new visual impairment and the sensation that something

is moving in her eye. She tells you that she is concerned because she had been warned about eye disease transmitted by black flies. When in there, she was in a river area, and despite her best efforts she received a lot of blackfly bites. She also has some sub-cutaneous nodules. what is the most likely causative agent?

A. Loa Loa

B. Dracunculus

medinensis

C. **Onchocerca volvulus**

D. Wuchereria

bancrofti

184.A 53 year old female presented with fever, rigors, malaise, and headaches for the past 2 days. She had lived in Zaire for 8 months, where she had been hospitalized with similar complaints and treated empirically with chloroquine. She returned to the US two days prior to admission. Her temperature was 102 degrees, Pulse 90, and BP 130/70. On physical examination, the spleen tip was palpable. The WBC count was 4100 / mm³, and the hemoglobin was 8.5 g /dl. What is the most likely parasitic infection she has?

A. **Malaria**

B. Leishmaniasis

C. Loasis

D. Onchocerchiasis

185.A 31-year-old man comes to your office complaining of diarrhea and abdominal cramping for the past month. The diarrhea is watery. On further questioning, he admits that he is homosexual. His HIV antibody

test is negative. A protozoan parasite is seen on examination of the stool. What is the most likely parasite identified?

A. Entamoeba histolytica

B. Giardia lamblia

C. Cryptosporidium parvum

D. **Toxoplasma**

gondii

186. Patient complains of intense watery diarrhea. It is likely that it was ingested by contaminated drinking water, as chlorine does not kill the oocysts. This patient also has AIDs. What can be the most likely Causative agent?

A. Entamoeba histolytica

B. Giardia lamblia

C. **Cryptosporidium parvum**

D. Toxoplasma

gondii

187. A female patient from Asosa complained of sudden attack of chills, headache & fever. This was followed by profuse sweating. The symptoms were repeated after 48 hours. Clinical examination revealed enlarged liver and spleen. Her skin was also pale. What is your provisional diagnosis?

A. **Malaria**

B. Leishmaniasis

C. Loasis

D. Onchocerciasis

188. A patient visited his physician complaining of recurrent attacks of dysentery alternating with constipation. A stool examination revealed cyst of a parasite. What is the identified parasite?

A. **Entamoeba histolytica**

B. Giardia

lamblia

C. Cryptosporidium parvum

D. Toxoplasma

gondii

189. An HIV positive patient visited her doctor complaining of ocular pain.

The physical examination revealed corneal lesions. The patient had a history of wearing contact lens. The laboratory test demonstrated amoeba in corneal scrapings. What is the causative agent?

A. Entamoeba histolytica

B. Naegleria fowleri

C. **Acanthamoeba species**

D. Toxoplasma

gondii

190. A 45-year-old male patient presents headache, lethargy, and disorientation. He was admitted to inpatient for better follow up. The blood film, urine and stool examination were negative for any infection. The physician ordered CSF analysis suspected the patient might have meningitis. The CSF analysis revealed amoebic trophozoite. What is the identified causative agent?

A. Entamoeba histolytica

B. **Naegleria**

fowleri

C. Acanthamoeba species

D. Toxoplasma

gondii

191. A 14 year old boy has sudden explosive and watery diarrhea. The diarrhea does not have blood and mucus. He has also flatulence,

abdominal cramps, and anorexia. A week ago he was at a camp trip in the rural area where there is shortage of safe and clean water supplies. A stool examination reveals trophozoite of a protozoan parasite. What is the most probable causative agent?

A. *Entamoeba histolytica*

B. **Giardia**

lamblia

C. *Cryptosporidium parvum*

D. *Toxoplasma*

gondii

192. A 55-year-old woman arrives from Gamogofa where she was working as a laborer and living in campus at the dam project. She has a dry chronic ulcer in her face. The ulcer resists treatment by known antibiotics. The examination from the skin slit reveals amastigote of leishmania species. What is the most probable causative agent?

A. **Leishmania tropica ?**

B. *Leishmania donovani*

C. *Leishmania major*

D. *Leishmania Mexicana*

193. Mr. X a laboratory technician in Dilchora hospital wants to transport stool sample for further test a medium for this purpose is:

C. Amies transport medium

C. MaConkey

D. **Cary- Blair medium**

D. KIA

194. The best biochemical test for differentiation of salmonella and shigella is:

A. Indole

C. H₂ gas production

B. **lysine**

D. Citrate

195. Laboratory diagnosis of salmonella is 80% positive in one of the following specimen.

A. Urine

C. stool

B. **Blood**

D. CSF

196. One of the following bacterial genus **is not** associated with super antigen production

A. **Shigella**

C. streptococci

B. Staphylococci

D. E.coli

197. The blood smear from critically ill patient indicates 20 nucleated red cells per 100 white cells in the differential WBC count. The patient's total leucocyte count is $12,000/\text{mm}^3$. The corrected total leucocyte count is.....

A. $6,000/\text{mm}^3$

B. $120,000/\text{mm}^3$

C. $10,000/\text{mm}^3$

D. $12,000/\text{mm}^3$

198. The clinical diagnosis of a 34 years old male patient was suggestive of anemia. His total erythrocyte count, hemoglobin level and hematocrit indicate $4 \times 10^{12}/\text{L}$, 100g/L and $0.36(\text{L/L})$ respectively. Calculate his MCV

A. 75fl

B. 60fl

C. 80fl

D. 90fl

199. For the question 198, what is the MCHC?

A. **28%**

B. 21%

C. 22%

D. 29%

200. The Lab. Technologist conducted reticulocyte count manually by inserting a paper with a square hole at center in the eye piece. He counted 94 reticulocytes while counting 1000 erythrocytes. Calculate reticulocyte count (%)

A. 18.6%

B. 9.4%

C. 7%

D. 10%

201.

