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(A State Govt. University)

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Answer Keys

for the post of Laboratory Technician Examination **held on 9th October, 2022**

If a candidate does not satisfy with the key answers, he/she can make representation with documentary proof to the COE, Atal Medical and Research University, HP, at Nerchowk, Distt. Mandi, HP-175008 through email on coomedicaluniv.mandi@gmail.com up to 11.10.2022 by 05:00 PM and thereafter, no representation will be entertained under any circumstances.

1. Which of the following is the most labile constituent of urine:

- A. Uric acid
- B. Urea**
- C. Creatinine
- D. Ammonia

2. In a fasting person, triglyceride concentration (mg/dl) divided by 5 is equivalent to:

- A. LDL mg/dl
- B. HDL mg/dl
- C. VLDL mg/dl**
- D. None of the above

3. A 10% weight/volume solution contains:

- A. 10 g solute in 100 g solution
- B. 10 g solute in up to 100 ml of solution**
- C. 10 g solute in 100 ml solvent
- D. 10 ml solute in 100 ml solvent

4. Which ray is emitted by ^{125}I in radioactivity:

- A. Alpha ray
- B. Gamma ray**
- C. Beta ray
- D. Beta particles

5. In flame photometer, Lithium produces which color of flame:

- A. Violet
- B. Blue
- C. Red**
- D. Green

6. Which method is used for estimation of hormones:

- A. ELISA
- B. Fluorimetric assay
- C. Radio-immunoassay

D. All of the above

7. Which pathway of metabolism of glucose occurs in specialized tissue e.g. liver, erythrocytes:

- A. Kreb's cycle
- B. Kreb's Hansleit cycle
- C. Hexose monophosphate shunt**
- D. Citric acid cycle

8. What is the cause of respiratory acidosis:

- A. Excess carbonic acid**
- B. Low carbonic acid
- C. Excess bicarbonate
- D. Low bicarbonate

9. Which enzyme in serum acts as a marker for prostatic cancer:

- A. Amylase
- B. Acid phosphatase**
- C. Alkaline phosphatase
- D. Isocitrate dehydrogenase

10. Coenzyme A is the coenzyme form of :

- A. Pantothenic acid**
- B. Niacin
- C. Riboflavin
- D. Folic acid

11. The value of blood urea nitrogen concentration can be converted to urea in mg/ml by multiplying it by:

- A. 3.18
- B. 3.16
- C. 2.14**
- D. 1.15

12. Which of the following is the final end product of purine metabolism in humans:

- A. Ammonia
- B. Creatinine
- C. Urea
- D. Uric acid**

13. Which polysaccharide yields more than one type of monosaccharides on hydrolysis:

- A. Inulin
- B. Heparin**
- C. Glycogen
- D. Starch

14. Spectrophotometry is based on the principle of:

- A. Koch's postulate
- B. Lambert's law
- C. Beer's law
- D. Both B & C**

15. How much quantity of NaOH is dissolved in 1 litre of distilled water to prepare 0.1 N solution of NaOH:

- A. 1.0 g
- B. 2.0 g
- C. 3.0 g
- D. 4.0 g**

16. Specific test for amino acid Arginine is:

- A. Sakaguchi Test**
- B. Xanthoproteic test
- C. Millon's Test
- D. Biuret test

17. Increased accumulation of ketone bodies in blood is known as:

- A. Ketolysis
- B. Ketogenesis
- C. Ketosis
- D. None of the above**

18. Main sugar of semen is:

- A. Glucose
- B. Galactose
- C. Fructose**
- D. Maltose

19. Normal range of standard bicarbonate in plasma is:

- A. 22.4- 25.8 m mol/L**
- B. 17.4-19.6 m mol/L
- C. 13.5-16.8 m mol/L
- D. 10.2-14.5 m mol/L

20. Cushing's syndrome is caused due to hyperactivity of:

- A. Adrenal cortex**
- B. Adrenal medulla
- C. Thyroid gland
- D. Parathyroid gland

21. In a normal non-diabetic person, fasting blood glucose level is approximately:

- A. Less than 5.5 m mol/l**
- B. 7.5 m mol/l
- C. 8.5 m mol/l
- D. None of the above

22. Which test is used to for detecting bilirubin in urine:

- A. Gerhard's test
- B. Rothera's test
- C. Fouchet's test**
- D. None of the above

23. Polyuria is seen in all except:

- A. Dehydration
- B. Diabetes insipidus
- C. Diabetes mellitus
- D. Diuretic intake

24. Which of the following is essential amino acid:

- A. Valine
- B. Threonine
- C. Phenylalanine
- D. All of them

25. In oxidase-peroxidase method of glucose estimation, which colored complex is measured colorimetrically:

- A. Yellow
- B. Pink
- C. Green
- D. Blue

26. Who introduced the methods of obtaining bacteria in pure culture using solid media?

- A. Peyton-Rous
- B. Max Theiler
- C. Robert Koch
- D. Louis Pasteur

27. Steam sterilisation at 100°C for 20 minutes on three successive days is known as:

- A) Vaccine Bath
- B) Tyndallisation
- C) Pasteurisation
- D) Inspissation

28. Bacteria which can grow at temperature below 20 °C are known as:

- A) Mesophiles
- B) Thermophiles
- C) Psychrophiles
- D) Capnophiles

29. Who introduced the techniques of sterilisation?

- A) Robert Koch
- B) Louis Pasteur
- C) Joseph lister
- D) Edward Jenner

30. Ring test is used for:

- A) C-reactive protein
- B) Streptococcal grouping by the Lancefield technique
- C) Both of the above
- D) None of the above

31. Direct immunofluorescence test may be used for detection of:

- A) Rabies virus antigens
- B) Antibodies in Syphilis
- C) Both of the above
- D) None of the above

32. During mutation, when one pyrimidine is replaced by another pyrimidine and one purine by another purine i.e. AT replaced by GC, it is named:

- A) Transversion
- B) Induced mutation
- C) Transition
- D) None of the above

33. Vi antigen is present in the following bacteria except:

- A) Salmonella typhi
- B) S. paratyphi B**
- C) S. paratyphi C
- D) S. dublin

34. Stool specimens from cholera cases can be collected and transported to the laboratory using:

- A) Carry-Blair medium
- B) Strip of thick blotting paper
- C) Alkaline peptone water C
- D) All of the above**

35. What is the colour of colonies of Corynebacterium diphtheriae on tellurite blood agar medium?

- A) White
- B) Grey to black**
- C) Golden yellow
- D) Cream

36. What is the generation time of Mycobacterium leprae?

- A) 20 minutes
- B) 20 hours
- C) 12-13 days**
- D) 6-12 weeks

37. Liquid medium for isolation of Mycobacterium tuberculosis is:

- A) Middle Brook 7H9**
- B) Middle Brook 7H10
- C) Middle Brook 7H11
- D) Dorset egg medium

38. Levinthal's medium is used to cultivate:

- A) Legionella pneumophila
- B) Leptospira interrogans

C) Haemophilus influenzae

D) Brucella melitensis

39. Which of the following Shigella species does not ferment mannitol?

- A) Shigella dysenteriae**
- B) Shigella boydii
- C) Shigella Sonnei
- D) Shigella flexneri

40. Which of the following mycobacteria is non-photochromogen?

- A) M. kansasii
- B) M. scrofulaceum
- C) M. gordonae
- D) M. ulcerans**

41. Which of the following serological tests is employed for diagnosis of congenital syphilis?

- A) FTA-ABS test
- B) IgM FTA-ABS test**
- C) TPHA test
- D) Reiter protein complement fixation test

42. Which of the following fungi has not been cultured?

- A) Sporothrix
- B) Rhinosporidium**
- C) Acremonium
- D) Blastomyces

43. Which of the following is the continuous cell line used in the diagnostic virology?

- A) Rhesus monkey kidney cell culture
- B) Human amnion cell culture
- C) Human embryonic lung cell strain
- D) Human carcinoma of cervix cell line**

44. How many nuclei are there in cyst of Giardia lamblia?

- A) 1
- B) 2
- C) 4
- D) 8

45. Which form of the malarial parasite is infective to mosquitoes?

- A) Ring form
- B) Sporozoite
- C) Gametocyte
- D) None of the above

46. Hook worm infection occurs by:

- A) Eggs present in food
- B) Auto infection
- C) Penetration of skin by infective larvae
- D) All of the above

47. Microbiological waste should be segregated in which colour bags?

- A) Yellow
- B) Red
- C) Blue
- D) Black

48. Which of the following disinfectant is currently not used for fogging of operation theatres?

- A) Formaldehyde
- B) Glutaraldehyde based
- C) Hydrogen peroxide based
- D) Quaternary ammonium compound

49. Which antibody crosses placenta?

- A) IgA

B) IgG

C) IgM

D) IgE

50. The smallest virus in size is?

- A) Picornaviruses
- B) Adenovirus
- C) Parvovirus
- D) Hepatitis D virus

51. A sensitive and specific indicator of both vitamin B12 and folate deficiency is:

- A. Serum Red cell folate
- B. Total Iron binding capacity
- C. Deoxyuridine suppression test
- D. Schilling test

52. Assessment of Iron stores in bone marrow is done by:

- A. Prussian Blue reaction
- B. Methylene blue test
- C. Acid elution test
- D. Congo Red staining

53. Non-Specific esterase positivity is seen in AML:

- A. M1 & M2
- B. M0 & M1
- C. M4 & M5
- D. M0 & M6

54. Glycogen can be distinguished from other PAS positive substances by:

- A. Congo Red stain
- B. Its sensitivity to diastase digestion
- C. Giemsa staining
- D. Electron microscopy

55. Erythropoietin regulates:

- A. Red cell production
- B. WBC production
- C. Platelet production
- D. Megakaryocyte production

56. Salah needle is used for:

- A. Performing ESR
- B. Making peripheral smear
- C. Bone marrow aspiration
- D. Performing WBC count

57. Normal range of Neutral alkaline phosphatase score is:

- A. 40 to 60
- B. 40 to 70
- C. 40 to 80
- D. 40 to 100

58. RBCs in Blood group O have:

- A. A antigen
- B. B antigen
- C. AB antigen
- D. No antigen

59. Hemophilia A has:

- A. Normal Bleeding time
- B. Increased Prothrombin Time
- C. Increased Factor VIII
- D. Positive Hess test

60. Platelet Function tests does not include:

- A. Adhesion tests
- B. Aggregation tests
- C. Coagulation tests
- D. Investigation of granular content

61. Osmotic Fragility test is used in the diagnosis of:

- A. Multiple myeloma
- B. Hereditary spherocytosis
- C. Bleeding disorder
- D. Leukemia

62. Total Iron binding capacity increases in:

- A. Iron deficiency anemia
- B. Thalassemia minor
- C. Sideroblastic anemia
- D. Macrocytic anemia

63. Dacie's fluid is:

- A. Mounting media
- B. Diluting fluid for RBC estimation
- C. Colouring media
- D. embedding media

64. EDTA is not useful for:

- A. RBC count
- B. WBC count
- C. Hb electrophoresis
- D. Coagulation studies

65. Absolute Eosinophil count is done using:

- A. Dunger's fluid
- B. Turk's fluid
- C. Hayem's fluid
- D. Dacie's fluid

66. Normal platelet count is:

- A. 20,000 to 50,000/cmm
- B. 50,00-1 lac/cmm
- C. 75,000-1.5 lac/cmm.
- D. 1.5-4 lac /cmm

67. Which is a Romanowsky stain:

- A. Congo Red stain
- B. Perl's stain
- C. Giemsa stain**
- D. Reticulin stain

68. Macrocytes are found in:

- A. Megaloblastic anemia**
- B. Iron deficiency anemia
- C. Thalassemia
- D. Sideroblastic anemia

69. Red cell life span is shortened in:

- A. Iron deficiency anemia
- B. Megaloblastic anemia
- C. Haemolytic anemia**
- D. Sideroblastic anemia

70. Sulfosalicylic acid test is used to detect:

- A. Glycosuria
- B. Proteinuria**
- C. Haematuria
- D. Pyuria

71. Thin and thick peripheral blood smears are made to detect:

- A. Schistostoma
- B. Ectoparasites
- C. Ascaris lumbricoides
- D. Plasmodium vivax**

72. Leucocytes having coarse deep red staining cytoplasmic granules:

- A. Basophil
- B. Neutrophil
- C. Eosinophil**
- D. Monocyte

73. Which anticoagulant is used for ESR estimation by Westergren's method:

- A. Sodium citrate**
- B. EDTA
- C. Heparin
- D. Sodium fluoride

74. According to WHO, Diagnosis of acute leukemia is based on cut off:

- A. >10%
- B. >20%**
- C. >30%
- D. >40%

75. LE factor is:

- A. Antinuclear Antibody**
- B. Antigen
- C. Coagulation factor
- D. platelet fraction

76. Honing of microtome knife is done for:

- A. Polishing the edge of knife
- B. Sharpening the edge of knife**
- C. Heating the edge of knife
- D. Cooling the edge of knife

77. The basic functional unit of kidney is:

- A. Nephron**
- B. Tubule
- C. Medulla
- D. Cortex

78. Crypts of Lieberkuhn are present in:

- A. stomach
- B. Pancreas
- C. Small intestine**
- D. Urethra

79. Techniques specific for the identification of DNA are:

- A. Feulgen reaction
- B. Acridine orange
- C. Chrome alum technique
- D. Methyl green pyronin

80. Reticulin fibres are best demonstrated by:

- A. PAS staining
- B. Silver impregnation
- C. Ziehl Neelsen staining
- D. Giemsa staining

81. Dyes appear colored because they absorb radiation between wavelengths of:

- A. 150-250nm
- B. 200-350 nm
- C. 400-650nm
- D. 600-750nm

82. Acid fast bacilli can be identified by which of these stains:

- A. Congo Red stain
- B. Reticulin stain
- C. Methylene blue stain
- D. Ziehl Neelsen stain

83. In-situ hybridization is a technique useful for all except:

- A. The detection of abnormal genes
- B. Identification of viral infection
- C. Tumor phenotyping
- D. Diagnosing jaundice

84. Bence Jones proteins are excreted in:

- A. Anemia
- B. Paraproteinemias
- C. Thrombocytopenia
- D. Lymphocytosis

85. Total leucocyte count in CSF is calculated using :

- A. Vernier callipers
- B. Immunohistochemistry
- C. Improved Neubauer's chamber
- D. Sahli's hemoglobinometer

86. Papanicolaou staining is used for:

- A. Staining cervicovaginal smears
- B. Detecting amyloid deposits
- C. Diagnosing glomerulonephritis
- D. Staining air dried smears

87. Name the anticoagulant present in purple capped vacutainer:

- A. Sodium citrate
- B. Heparin
- C. EDTA
- D. Nil

88. Which cytochemical stain is used to identify fungal hyphae and spores in a lung aspirate:

- A. Modified Ziehl Neelsen
- B. Periodic Acid Schiff
- C. Myeloperoxidase
- D. Non specific esterase

89. Sixth cranial nerve is:

- A. Olfactory
- B. Optic nerve
- C. Trigeminal nerve
- D. Abducens nerve

90. The ability to reveal closely adjacent structural details as separate and distinct:

- A. Resolution
- B. Dissolution
- C. Magnification
- D. Microdissection

91. Blood clotting factor IX is

- A. Fibrinogen
- B. Prothrombin
- C. Stuart Prower factor
- D. Christmas factor**

92. The lining epithelium of stomach is:

- A. Transitional epithelium
- B. Stratified squamous epithelium
- C. Columnar epithelium**
- D. Pseudostratified columnar epithelium

93. Constituent of Turk's Fluid that lyses RBC's is:

- A. Acetic acid**
- B. Gentian violet
- C. Sulphuric acid
- D. Nitric acid

94. Dark field microscopy helps in the identification of :

- A. Treponema pallidum organism**
- B. Actinomycosis
- C. Amyloid deposits
- D. Mycobacterium TB

95. Van Gieson's stain is used for identifying:

- A. Fungal infection
- B. Collagen fibres**
- C. Acute leukemia
- D. Glycogen

96. Which is the biggest lake of Himachal Pradesh?

- A. Renuka Lake**
- B. Revalsar Lake
- C. Khajjar Lake
- D. Chandra Taal

97. In which year Shimla was declared the summer capital of British India?

- A. 1858
- B. 1864**
- C. 1869
- D. 1871

98. Which Viceroy of India had inaugurated the Kalka- Shimla Railway Line?

- A. Lord Reading
- B. Lord Hardinge
- C. Lord Curzon**
- D. Lord William Bentinck

99. Which district has highest literacy rate in Himachal Pradesh as per 2011 census?

- A. Kullu
- B. Shimla
- C. Hamirpur**
- D. Una

100. Who was the speaker of the first Vidhan Sabha of Himachal Pradesh?

- A. Krishan Chander
- B. Jaiwant Ram**
- C. Desraj Mahajan
- D. Tapinder Singh

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