JEPAS(PG)-2021 **1102000001**

Subject: M. Sc in Medical Laboratory Technology (M. Sc MLT)

Duration: 90 minutes **Full Marks: 100**

Instructions

1. All questions are of objective type having four answer options for each. Only one option is correct. Correct answer will carry full marks 1. In case of incorrect answer or any combination of more than one answer, ¼ mark will be deducted.
2. Questions must be answered on OMR sheet by darkening the appropriate bubble marked A, B, C, or D.
3. Use only **Black/Blue ball point pen** to mark the answer by complete filling up of the respective bubbles.
4. Mark answers only in the space provided. Do not make any stray mark on the OMR.
5. Write question booklet number and your roll number carefully in the specified locations of the **OMR**. Also fill appropriate bubbles.
6. Write your name (in block letter), name of the examination centre and put your full signature in appropriate boxes in the OMR.
7. The OMR is liable to become invalid if there is any mistake in filling the correct bubbles for question booklet number/roll number or if there is any discrepancy in the name/ signature of the candidate, name of the examination centre. The OMR may also become invalid due to folding or putting stray marks on it or any damage to it. The consequence of such invalidation due to incorrect marking or careless handling by the candidate will be sole responsibility of candidate.
8. Candidates are not allowed to carry any written or printed material, calculator, log-table, wristwatch, any communication device like mobile phones etc. inside the examination hall. Any candidate found with such items will be **reported against** and his/her candidature will be summarily cancelled.
9. Rough work must be done on the question paper itself. Additional blank pages are given in the question paper for rough work.
10. Hand over the OMR to the invigilator before leaving the Examination Hall.

MSc MLT MCQ 2021

Group – A

1. Albumin, Alpha1, Alpha2, Beta and Gamma globulin are electrophoric part of
   a) Hemoglobin.
   b) Urine.
   c) Serum.
   d) Tissue extract.

2. Which of the following is not a cause of acute pancreatitis?
   a) Hyperlipidemia.
   b) Ethanol.
   c) Steroids.
   d) Hypotension.

3. Which of the following is not directly related with Alzheimer's disease?
   a) Senile plaques.
   b) Diabetes mellitus.
   c) Tangles.
   d) Dementia.

4. A substance that produces prolonged prothrombin time when given orally is
   a) Heparin.
   b) Protamin sulfate.
   c) Coumarin.
   d) Salicylate.

5. Fibrinogen determination is performed on
   a) Plasma only.
   b) Serum Only.
   c) Either Plasma or Serum.
   d) Any body fluid other than Serum or Plasma.

6. To make 1:5 dilution of serum sample, one have to make
   a) 1 ml serum + 5 ml diluent.
   b) 5ml serum + 1 ml diluent.
   c) 1 ml serum + 4 ml Diluent.
   d) 1 ml Serum + 6 ml Diluent.

7. In human body sodium is responsible for the maintenance of
   a) Cardiac muscle contraction.
   b) Blood coagulation.
   c) Osmotic balance.
   d) Salt intake.

8. Which of the following enzymes are present in heart muscle 1. Lactate dehydrogenase (LDH), 2. Creatinine Phosphokinase (CPK), 3. Serum Glutamate Oxaloacetate Transaminase (SGOT)
   a) 1 and 2.
   b) 2 and 3.
   c) Only 2.
   d) 1, 2 and 3.

9. Blood Glucose level is directly regulated by the hormone
   a) Insulin.
   b) Thyroxin.
   c) ACTH.
   d) ADH.

10. What is the arithmetic mean of the data set: 4, 5, 0, 10, 8, and 3?
   a) 4.
   b) 5.
   c) 6.
   d) 7.

11. Which is the total yield of ATP in a TCA cycle in eucaryotic cell
   a) 38.
   b) 30.
   c) 32.
   d) 2.

12. Which of the following is not directly related with Hasimoto's thyroiditis?.
   a) Hypothyroidism.
   b) Slow onset.
   c) Neuropathy.
   d) Autoimmune disease.

13. When using a buffer of pH 8.6, each of the serum proteins in an electrical field migrates towards
   a) Cathode (+ve electrode).
   b) Anode (-ve electrode).
   c) Towards both.
   d) Either depending upon molecular weight.

14. The Ketone bodies include Acetoacetic acid, Acetone and.
   a) Oxalic Acid.
   b) Beta hydroxy butyric acid.
   c) Lactic acid.
   d) Pyruvic acid.

15. Alkaline phosphatase is GREATLY elevated in
   a) Myocardial infarction.
   b) Obstructive jaundice.
   c) Liver disease.
   d) Kidney disease.

16. Clot retraction can be employed as a function of
    a) Factor VII deficiency.
    b) Factor IX deficiency.
    c) Hemophilia.
    d) Platelet function.

17. Which of the following amino acids if added to a acidic solution will have buffer action on solution at physiological pH
    a) Alanine.
    b) Glycine.
    c) Histidine.
    d) Arginine.

18. An Alpha helix represents
    a) Primary structure of protein.
    b) Secondary structure of protein.
    c) Tertiary structure of protein y.
    d) Quaternary structure of protein.

19. Which one of the disease is not related to thyroid gland
    a) Cretinism.
    b) Myxoedema.
    c) Goitere.
    d) Acromegaly.

20. Proteinuria can be defined as the presence of protein in urine greater than
    a) 30 mg/dl.
    b) 300 mg/dl.
    c) 10 mg/dl.
    d) 3 mg/dl.

21. Creatinine clearance test is used for
    a) Estimation of renal blood flow.
    b) Estimation of glomerular filtration rate.
    c) Evaluation of glomerular Nephroticthiasis.
    d) None of the above.

22. What is the rate limiting enzyme in glycolysis
    a) Hexokinase.
    b) Phosphofructokinase isomerase.
    c) Glyceraldehyde 3 phosphate dehydrogenase.
    d) Enolase.

23. The catalytic activity of two different enzymes can be compared by
    a) Km value.
    b) pH of the optimum value.
    c) Molecular size of the enzyme.
    d) Formation of product.

24. Which of the following is/are unsaturated fatty acids
    a) Liniolenic acid.
    b) Oleic acid.
    c) Palmitic acid.
    d) All of the above.

25. Which force maintain the 3D structure of protein mainly
    a) Non Co-valemt.
    b) Covalent.
    c) Coordinate.
    d) Covalent & Non covalent.

26. Which of the following hormone inhibit Gluconeogenesis?
    a) Insulin.
    b) Glucagon.
    c) Growth Hormone.
    d) None.

27. Which of the following is the end product of purine metabolism in human?
    a) Xanthine.
    b) Uric acid.
    c) Urea.
    d) Allantoin.

28. Arrangement of nucleotides in DNA can be seen by
    a) Ultra Centrifugation.
    b) X Ray Crystalography.
    c) Light microscope.
    d) Electron microscope.

29. Values at 3SD limits are called
    a) Action limit.
    b) Warning limit.
    c) Assay is satisfactory.
    d) None of the above.

30. What is the name of an instrument used to measure the absorbance of a coloured compound?
    a) Spectrofluorometer.
    b) pH meter.
    c) Voltameter.
    d) Colorimeter.

31. The β-hCG secreted from
    a) Adrenal medulla.
    b) Prostate gland.
    c) Ovarian follicles.
    d) Syncytiotrophoblastic cells of the placenta.

32. The concentration of oxalate used to prevent clotting
    a) 10mg/ml.
    b) 20mg/ml.
    c) 2mg/ml.
    d) 15mg/ml.

33. Heller's nitric acid test of urine is done to detect
    a) Sugar.
    b) Protein.
    c) Ketone bodies.
    d) Bile salt.

34. The measure of closeness of the estimated value to the true value
    a) Precision.
    b) Accuracy.
    c) Internal quality.
    d) External quality.

35. If 500mg glucose is dissolved in 100mL water then the concentration of glucose in 2mL solution is
    a) 5mg.
    b) 200mg.
    c) 10mg.
    d) 20mg.

36. Elevated phosphorus levels are seen in
    a) Renal failure.
    b) Vit-D overdosage.
    c) Pancreatitis.
    d) Liver disease.

37. Hemophilia is due to absence of
    a) Factor VI.
    b) Factor VII.
    c) Factor VIII.
    d) Factor X.

38. Which of the following is not an essential amino acid?
    a) Proline.
    b) Histidine.
    c) Leucine.
    d) Methionine.

39. The DNA molecule is a double helical strand having the following nucleotide bases:
    a) Cytosine, thymine, alanine, guanine.
    b) Adenine, guanine, valine, thymine.
    c) Cytosine, lysine, adenine, guanine.
    d) Adenine, guanine, cytosine, thymine.

40. Maltose is a disaccharide of -
    a) Glucose & galactose.
    b) Glucose & Glucose.
    c) Glucose & Lactose.
    d) Fructose & Lactose.

41. Enzymes for beta oxidation of fatty acids are located in
    a) Mitochondria.
    b) Mitochondria & cytoplasm.
    c) Mitochondria & Golgi.
    d) Mitochondria & peroxisome.

42. Gout is caused by the buildup of what substance in the body?
    a) WBCs.
    b) Synovial fluid.
    c) Uric acid.
    d) Blood plasma.

43. Indirect ELISA, which is detected in sample?
    a) Antigens.
    b) Antibody.
    c) Both option1&2.
    d) None of the above.

44. The enzyme used for the synthesis of cDNA
    a) DNA Polymerase.
    b) DNA Ligase.
    c) Reverse transcriptase & Taq polymerase.
    d) Reverse transcriptase.

45. Bence-Jones protein can be detected in urine by-
    a) Biuret test.
    b) Heat test.
    c) Rother's test.
    d) Millon's test.

46. Name the coenzyme of riboflavin
    a) NAD or NADP.
    b) FAD or FMN.
    c) Coenzyme A.
    d) Thiamine pyrophosphate.

47. Which of the following mineral deficiency may result into impaired growth and development, skin lesson and loss of appetite?
    a) Zinc.
    b) Cobalt.
    c) Iron.
    d) Magnesium.

48. When Antigen is particulate the AG-Ab reaction occurs called
    a) Precipitation.
    b) Opsonization.
    c) Agglutination.
    d) Floculation.

49. Example of basic amino acid-
    a) Arginine.
    b) Proline.
    c) Leucine.
    d) Alanine.

50. All are precipitation reaction except
    a) VDRL test.
    b) Kahn test.
    c) Widal Test.
    d) Ascoli's test.

Group – B

51. Fungi are commonly identified on the basis of their
    a) Serologic and biochemic characteristics.
    b) Staining properties of polychrome dyes.
    c) Solubility in 20% potassium hydroxide.
    d) Sporulation and spore arrangement in hyphae.

52. In serologic tests of syphilis, reagin test may result from an acute or chronic infection such as
    a) Pneumonia.
    b) Infectious hepatitis.
    c) Lupus erythematosus.
    d) Helicobactor pylori.

53. Only receiving cannot accept a specimen unless it has
    a) An uncontaminated signed requisition with billing information.
    b) A correct legible label.
    c) An intact container with correct media.
    d) All of the above.

54. Which one of the following differentiates staphylococcus aureus from other species of staphylococci
    a) Oxidase.
    b) Coagulase.
    c) Dehydrogenase.
    d) Fibrinolysin.

55. A trophozoit of entamoeba histolytica usually contains
    a) Bacteria and coarse granules in the cytoplasm.
    b) Eccentracillay located endosome in the nucleus.
    c) Red blood cells in the cytoplasm.
    d) A coarse, granular blunt pseudopod.

56. Monocytes differentiate into which kind of phagocytic cells?
    a) Neutrophil.
    b) B cell.
    c) Macrophage.
    d) T cell.

57. Which of the following cells is involved in cell-mediated immunity?
    a) Leukaemia.
    b) T cells.
    c) Mast cells.
    d) Thrombocytes.

58. Which media is used to isolate Staphylococcus aureus from a sample containing mixed bacterial flora such as feces
    a) Mannitol salt agar.
    b) An enrichment broth.
    c) Mac Conky agar.
    d) EMB agar.

59. A compound light microscope allows clear visualization of objects no smaller than a:
    a) Typical virus.
    b) DNA molecule.
    c) Small bacterium.
    d) Large protozoa.

60. Chemicals released from mast cells during an allergic reaction include all of the following except:
    a) Histamine.
    b) Interferons.
    c) Prostaglandins.
    d) Leukotrienes.

61. A structural component that is found in all viruses is:
    a) The envelope.
    b) Capsid.
    c) DNA.
    d) Spikes.

62. Which of the following microscope was used to first identify human rotavirus?
    a) Light microscope.
    b) Phase-contrast microscope.
    c) Dissection microscope.
    d) Electron microscope.

63. What is the other name for *coccidioidomycosis*?
    a) Yellow fever.
    b) San Joaquin Valley fever.
    c) Rocky mountain fever.
    d) Relapsing fever.

64. Which of the following is the usual route of infection for *histoplasmosis*?
    a) Nose.
    b) Skin wounds.
    c) Both of the above.
    d) None of the above.

65. Which of the following is not a recognised cause of diarrhoea?
    a) Vibrio cholerae.
    b) Escherichia coli.
    c) Clostridium perfringens.
    d) Enterococcus faecalis.

66. Ring worm is a disease caused by
    a) Fungus.
    b) Bacteria.
    c) Tape worm.
    d) Round worm.

67. Microbes which are capable of growing over a wide range of temperature are called
    a) Stenothermal.
    b) Thermotolerant.
    c) Thermophilic.
    d) Eurythermal.

68. The disease commonly called by “lock jaw” is caused by
    a) Bacillus pertussis.
    b) Mycobacterium.
    c) Clostridium tetani.
    d) Treponema pallidum.

69. Weil felix test is done for trhe diagnosis of
    a) Rickettsia.
    b) Patussis.
    c) Cholera.
    d) African sleeping sickness.

70. The vector for the transmission of the disease KALA AZAR is
    a) Ades.
    b) Anopheles.
    c) Glossina.
    d) Sandflies.

71. Exponential growth observed in which phase of Bacterial growth curve
    a) Log phase.
    b) Lag phase.
    c) Stationary phase.
    d) Decline phase.

72. The microorganism which synthesises all vitamin is
    a) Prototrophic.
    b) Pleotrophic.
    c) Hydrotrophic.
    d) Methanotrophic.

73. Infective form of Taenia solium is
    a) Cysticercus cellulosae.
    b) Both cysticercus cellulose and egg.
    c) None.
    d) Only egg.

74. Negri bodies are found in
    a) Hepatitis B.
    b) Rabies.
    c) Dengue.
    d) None.

75. Donated blood undergoes screening for which diseases
    a) HIV.
    b) Viral Hepatitis.
    c) Diabetes.
    d) A and B.

76. Which is needed for performing Direct Coomb's test?
    a) Patient's RBC.
    b) Patient's serum.
    c) Haemolysis.
    d) Cells from buffy coat.

77. An epitope is
    a) Antigenic determining site.
    b) Antibody.
    c) T-cell.
    d) B-cell.

78. Eosinophilia is found in all, except
    a) Allergic condition.
    b) Parasitic condition.
    c) Typhoid.
    d) Skin disease.

79. Which antibody type protects against bacteria, virus and toxins in secondary immune response?
    a) Ig A.
    b) Ig D.
    c) Ig E.
    d) Ig G.

80. A 17 years-old develops *Neisseria meningitidis* meningitis. What was the first event?
    a) Crossing the blood-brain barrier.
    b) Meningococcemia.
    c) Skin lesions.
    d) Upper respiratory colonization.

81. A vaccine can be
    a) An antigenic protein.
    b) Weakened pathogen.
    c) Live attenuated pathogen.
    d) All of these.

82. In which of the following phases of growth is a Gram-positive Bacterium most susceptible to the action of penicilin?
    a) Lag.
    b) Exponential.
    c) Stationary.
    d) Death.

83. A premature baby, 4 days old, has developed a white coating on her buccal mucosa extending onto her lips. It appears to be painful. What is the most likely causative agent?
    a) Aspergillus.
    b) Fusobacterium.
    c) Candida.
    d) Microsporum.

84. Injection of anti-venom to a patient for snake bite is an example of
    a) Naturally acquired active immunity.
    b) Artificially acquired active immunity.
    c) Naturally acquired passive immunity.
    d) Artificially acquired passive immunity.

85. Receptors for steroid hormones usually reside at
    a) Plasma membrane.
    b) Cytoplasm.
    c) Nuclear membrane.
    d) Nucleoplasm.

86. A burn patient has an infected area with odiferous, blue-green pus.What is the most likely causative agent?
    a) Aspergillus fumigatus.
    b) Pseudomonas aeruginosa.
    c) Staphylococcus aureus.
    d) Streptococcus pyogenes.

87. Hybridoma technology was developed by
    a) Kohler & Milstein.
    b) Khorana & Nirenberg.
    c) Khorana & Korenberg.
    d) Beedle & Tautum.

88. Spirochaetes are most difficult to demonstrate in:
    a) Primary syphilis.
    b) Secondary syphilis.
    c) Tertiary syphilis.
    d) Congenital syphilis.

89. In the following pairs of organisms, which two are easiest to distinguish from each other by Gram stain?
    a) Bacillus & Clostridium.
    b) Listeria & Proteus.
    c) Salmonella & Shigella.
    d) Haemophillus & Lactobacillus.

90. MHC class I is a cell surface molecule present on
    a) B cells.
    b) All nucleated cells.
    c) APCs.
    d) T cells.

91. Transfer of DNA from one bacterium to another by a bacteriophage is called-------
    a) Conjugation.
    b) Transduction.
    c) Transformation.
    d) Transposition.

92. Tuberculin test is which type ofhypersensitivity reaction
    a) IgE type.
    b) Cytolytic & cytotoxictype.
    c) Immune complex.
    d) Delayed type.

93. A single Ig molecule contains-----
    a) 1 light &1 heavy chain.
    b) 2 light &1 heavy chain.
    c) 2 light & 2 heavy chain.
    d) 1 light & 2 heavy chain.

94. The culture methods usedfor antibiotic sensitivity testing is------
    a) Streak method.
    b) Stoke's method.
    c) Lawn culture.
    d) Pour platemethod.

95. The biochemical reaction that helps in the identification of M.tuberculosis is ------
    a) Niacin test.
    b) Aryl sulfatasetest.
    c) Heat stable catalase test.
    d) Oxidase test.

96. Which lab diagnostic method is used in identification of Herpes infection?
    a) Widal test.
    b) RPR test.
    c) PCR.
    d) None of the above.

97. What is the full form of VDRL?
    a) Venereal disease research laboratory test.
    b) Vison detectedresearch test.
    c) Variation in different research laboratory test.
    d) None of the above.

98. Filarial larva can be collected from man's---
    a) Peripheral bloodat mid night.
    b) Smears ofspleen.
    c) Biopsy of liver.
    d) Smears of intestinal contents.

99. Streptococcus pyogens is
    a) Alpha heamolytic.
    b) Beta heamolytic.
    c) Gamma heamolytic.
    d) No heamolysis.

100. Gas gangrene caused by
    a) Clostridium botulinum.
    b) Clostridium tetani.
    c) Clostridium perfringens.
    d) Clostridium difficile.