GMCH COMBINED ENTRANCE TEST (GCET-2023)

Paper for 10+2 / Vocational / Diploma: Medical Laboratory Technology

QUESTION BOOKLET

Time: 120 Minutes **Number of Question: 100** **Maximum Marks: 100**

Roll Number: In figure **In Words**

Signature of the Candidate: _____

DO NOT OPEN THE SEAL ON THE BOOKLET UNTIL ASKED TO DO SO

INSTRUCTIONS-

1. Write your Roll Number and other details on the Question Booklet and also on the OMR Sheet in the spaces provided.
2. Do not make any identification marks on the OMR Answer Sheet or Question Booklet.
3. Please check that the Question Booklet contains 100 questions. In case of any discrepancy, inform the Assistant Superintendent/Invigilator within 10 minutes of the start of the test.
4. Each question has four alternative answer (A, B, C, D) out of which **only one is correct**. For each question, **darken only one bubble** (A, B, C, or D**),** whichever you think is the correct answer, on the OMR Answer sheet with **Blue / Black Ball Pen only**. Do not use Gel Pen/ ink pen /Pencil etc. Do not Tick √ or × on the OMR Sheet.
5. Darken the bubbles in the OMR Answer Sheet according to the Serial No. of the Questions given the Question Booklet.
6. In case more than one bubble is darkened no marks will be given and the question will be treated as wrong.
7. There will be no negative marking. If you do not want to answer a question, leave all the bubbles corresponding to that question blank in the OMR Answer sheet.
8. For rough work, use the blank sheet at the end of the Question Booklet.
9. The question paper includes 30 MCQ Anatomy/ Physiology (1-30); 35 MCQ Biology and Chemistry (31-65); 35 MCQ Laboratory Techniques Biochemistry, Microbiology, Haematology and Histopathology (66-100).
10. The OMR Answer sheet is designed for computer evaluation. Therefore, if you do not follow the instructions given on the OMR Answer sheet, it may make evaluation by the computer difficult. Any resultant loss to the candidates on the above account, i.e. not following instructions completely and properly, shall be the responsibility of the candidates only.
11. After the test, handover the Question Booklet and OMR sheet to the Invigilator on duty.
12. Candidate who creates disturbance of any kind or changes his/her seat or is found in possession of any paper or the any assistance or found giving or receiving assistance or found using any other unfair means during the examination will be expelled from the examination by the Centre superintendent/Observer whose decision shall be final.
13. Telecommunication equipment such as pager, cellular phone, wireless, scanner, smart watch/watch etc. is not permitted inside the examination hall. Use of calculators is not allowed.
14. Candidate should ensure accuracy of their personal details on the OMR Sheet i.e. Name and Roll No., signature and Left thumb impression. The personal details are to be filled in by the candidates with his/her own hand writing.

1. The animal cells are interconnected by:
   A. Cell wall
   B. Desmosomes
   C. Plasma membrane
   D. Plasmodesmata

2. Myelin sheath to the axons of the CNS is provided by:
   A. Astrocyes
   B. Oligodendrocyte
   C. Microglia
   D. Ependymal cells

3. The aortic valve prevents blood from flowing backwards into:
   A. Right ventricle
   B. Left ventricle
   C. Aorta
   D. Left atrium

4. The main Pacemaker of the heart is
   A. AV Node
   B. SA Node
   C. Purkinje fibres
   D. Bundle of His

5. The endocrine component in kidney that secretes renin is the:
   A. Bowman's capsule
   B. Adrenal gland
   C. Juxta glomerular apparatus
   D. Vasa recta

6. Intercalated discs are characteristic of:
   A. Smooth muscle
   B. Cardiac muscle
   C. Skeletal muscle
   D. Muscularis mucosa

7. The peritoneal fold that stabilizes and supports the small intestine is the:
   A. Serosa
   B. Lesser omentum
   C. Mesentery
   D. Parietal peritoneum

8. Intrinsic factor is secreted by cells in the stomach wall called:
   A. Parietal cells
   B. Chief cells
   C. Acinar cells
   D. G cells

9. Largest lymphoid organ of the body is
   A. Lymph node
   B. Spleen
   C. Palatine tonsil
   D. Appendix

10. Parathyroid hormone (PTH) secretions regulate:
   A. Blood calcium
   B. Blood glucose
   C. Protein synthesis
   D. Fat metabolism

11. The primary function of the lens of the eyes is to:
   A. Absorb light passing through the retina
   B. Interact with the photoreceptors of the retina
   C. Focus the visual image on the retina
   D. Secrete aqueous humour

12. The auditory ossicles of the middle ear include the:
   A. Sacculus, utriculus, ampulla
   B. Vestibule, cochlea, organ of corti
   C. Malleus, stapes, incus
   D. Otoliths, maculae, otoconia

13. The bones of the pectoral girdle include:
   A. Clavicle and scapula
   B. Ilium and ischium
   C. Humerus and femur
   D. Ulna and radius

14. The structure piercing the central tendon of the diaphragm is:
   A. Inferior vena cava
   B. Thoracic duct
   C. Aorta
   D. Oesophagus

15. Failure of descent of testis to its normal position is called:
   A. Cholecystitis
   B. Cryptorchidism
   C. Hypogonadism
   D. Sterility

16. Structure of RBC membrane is maintained by
    A. Elastin
    B. Collagen
    C. Spectrin
    D. Laminin

17. The normal sequence of cell cycle is
    A. G0-G1-S-G2-M
    B. G0-G1- G2-M-S
    C. G0-G1-S- M -G2
    D. G0- M -G1-S-G2

18. End plate potential is characterized by
    A. All or none law
    B. Propagation
    C. Depolarization
    D. Hyperpolarization

19. Rheobase is an indicator of
    A. Specificity of impulse transmission
    B. Magnitude of current
    C. Rate of discharge
    D. Velocity of nerve conduction

20. All are essential in heme synthesis <u>except</u>
    A. Ferrous iron
    B. Glycine
    C. Succinyl CoA
    D. Lead

21. Helper and Cytotoxic cells are
    A. B cells
    B. T cells
    C. Monocytes
    D. Macrophages

22. Erythropoiesis is promoted by
    A. Erythropoietin
    B. Interleukin -5
    C. Colony stimulating factor
    D. Interleukin-4

23. The normal Arterial Carbon dioxide level in human blood is:
    A. 25 mmHg
    B. 40 mmHg
    C. 50 mmHg
    D. 60 mmHg

24. Diffusion capacity for carbon dioxide compared to oxygen is
    A. 20 time more
    B. 10 times more
    C. 5 times more
    D. 2 times more

25. Blood pressure is defined as the product of
    A. Systolic pressure and pulse rate
    B. Cardiac output and peripheral resistance
    C. Pulse pressure and pulse rate
    D. Diastolic pressure and pulse rate

26. Nitric oxide is released by
    A. Smooth muscle cells
    B. Mesenchymal cells
    C. Pericytes
    D. Endothelial cells

27. Digestion of dietary fiber by colonic bacteria produces
    A. Free radicals
    B. Sucrose
    C. Butyrate
    D. Glycerol

28. Excessive ingestion of carbohydrate free diet (Diet not containing carbohydrates) causes
    A. Diabetes insipidus
    B. Ketosis
    C. Obesity
    D. Bleeding

29. Most powerful vasopressor is
    A. Renin
    B. Angiotensin II
    C. Aldosterone
    D. Cortisol

30. Inhibitory neurotransmitter in CNS neurons is
    A. Glutamate
    B. Aspartate
    C. GABA
    D. Taurine

31. The thick wall developed in a fruit from the ripened ovary is called
    A. Parenchyma
    B. Hilum
    C. Pleurae
    D. Pericarp

32. Lysosomes are produced by
    A. Mitochondria
    B. Leucoplasts
    C. Nuclear membrane
    D. Golgi bodies

33. What is the process of the production of non- parental phenotypes called?
    A. Linkage
    B. Recombination
    C. Mutation
    D. Replication

34. Filiform apparatus occurs in
    A. Synergids
    B. Antipodals
    C. Egg nucleus
    D. Secondary nucleus

35. Which one of these microbes is used in the commercial production of butyric acid?
    A. Clostridium butylicum
    B. Streptococcus butylicum
    C. Trichoderma polysporum
    D. Saccharomyces cerevisiae

36. Baker's yeast is
    A. Propionibacterium shermanii
    B. Saccharomyces cerevisiae
    C. Trichoderma polysporum
    D. Lactobacillus

37. Negatively regulatory proteins are called
    A. Repressor
    B. Catalytic proteins
    C. Accessory proteins
    D. All of the above

38. Difference between ZIFT and IUT lies in the
    A. Methodology of fertilisation
    B. Nature of the sperms that fuse ova
    C. Nature of the cells transferred
    D. Number of the cells transferred

39. Plants having little or no secondary growth are
    A. Conifers
    B. Deciduous angiosperms
    C. Grasses
    D. Cycads

40. In which of the following muscle component are actin binding sites present?
    A. Troponin
    B. Tropomyosin
    C. Meromyosin
    D. Intercalated disc

41. During which stage of spermatogenesis are chromosomes associated with tetrads:
    A. Pachytene
    B. Leptotene
    C. Zygotene
    D. Diplotene

42. Malacophily is pollination by
    A. Insects
    B. Birds
    C. Snails
    D. Mammals

43. ICSI stands for
    A. Intra Cytoplasmic Smegma Infusion
    B. Intra Cytoplasmic Sperm Injection
    C. Intra Cytoplasmic Sperm Incubation
    D. Intra Cervical Semen Injection

44. The overlapping zone in between two ecosystems is known as:
    A. Ecozone
    B. Biotope
    C. Ecotone
    D. Horizon

45. Stock and scion are used in:
    A. Grafting
    B. Cutting
    C. Layering
    D. Micro-propagation

46. The experimental proof for semiconservative replication of DNA was first shown in a:
    A. Plant
    B. Virus
    C. Fungus
    D. Bacterium

47. Genes which are located only in the Y-chromosome are known as:
    A. Epistatic genes
    B. Holandric genes
    C. Operator genes
    D. Anti-epistasis genes

48. The drug Quinine is:
    A. Antiviral
    B. Anti-Malarial
    C. Anti-Bacterial
    D. Anti-Fungal

49. Which one of the following population interactions is widely used in medical science for the production of antibiotics?
    A. Parasitism
    B. Amensalism
    C. Commensalism
    D. Mutualism

50. Industrial melanism is a/an:
    A. Effect of mutation
    B. Effect of industrial pollution
    C. Skin pigmentation in workers
    D. Evidence of natural selection

51. An example of an exothermic reaction is:
    A. Electrolysis of water
    B. Burning of natural gas
    C. Photosynthesis in plants
    D. Decomposition of calcium carbonate

52. The chemical formula of the solution used for white-washing (Choona) is:
    A. CaO
    B. $CaHCO_3$
    C. $CaSO_4$
    D. $CaCO_3$

53. When oxygen is removed from a substance, the chemical process is called:
    A. Oxidation
    B. Corrosion
    C. Combustion
    D. Reduction

54. The empirical formula and molecular mass of a compound are CH_2O and 180g respectively. What will be the molecular formula of the compound?
    A. $C_9H_{18}O_9$
    B. CH_2O
    C. $C_6H_{12}O_6$
    D. $C_2H_4O_2$

55. Which of the following statements about the electron is incorrect?
    A. It is a negatively charged particle.
    B. The mass of electron is equal to the mass of neutron.
    C. It is a basic constituent of all atoms.
    D. It is a constituent of cathode rays

56. The elements in which electrons are progressively filled in 4f orbital are called
    A. Actinoids
    B. Transition elements
    C. Lanthanoids
    D. Halogens

57. Which of the following angle corresponds to sp^2 hybridisation?
    A. 90^0
    B. 120^0
    C. 180^0
    D. 109^0

58. Which of the following properties of water can be used to explain the spherical shape of rain droplets?
    A. Viscosity
    B. Surface tension
    C. Critical phenomena
    D. Pressure

59. Acidity of BF_3 can be explained on the basis of which of the following concepts?
    A. Arrhenius concept
    B. Bronsted Lowry concept
    C. Lewis concept
    D. Bronsted Lowry and Lewis concept

60. The radioactive isotope of hydrogen is
    A. Protium
    B. Deuterium
    C. Tritium
    D. Hydronium

61. Alkali metals react with water vigorously to form hydroxides and dihydrogen. Which of the following alkali metals reacts with water least vigorously?
    A. Li
    B. Na
    C. K
    D. Cs

62. By adding gypsum to cement
    A. Setting time of cement becomes less
    B. Setting time of cement increases
    C. Colour of cement becomes light
    D. Lustrous surface is obtained

63. Quartz is extensively used as a piezoelectric material, it contains
    A. Pb
    B. Si
    C. Ti
    D. Sn

64. Isomerism is not possible in the following functional group
    A. Alcohols
    B. Aldehydes
    C. Alkyl halides
    D. Cyanides

65. If sewage containing organic waste is disposed in water bodies, the fishes in such a polluted water die because of
    A. Large number of mosquitoes
    B. Increase in the amount of dissolved oxygen
    C. Decrease in the amount of dissolved oxygen
    D. Clogging of gills by organic waste

66. Refractive index of oil immersion used in light microscopy is:
    A. 1.48
    B. 1.15
    C. 1.51
    D. 1.23

67. Frozen section is used to demonstrate:
    A. Lipids
    B. Proteins
    C. Pigments
    D. Melanin

68. Fixative of choice in electron microscopy is:
    A. Uranium tetraoxide
    B. Acetone
    C. Glutaraldehyde
    D. Formalin

69. Decomposition of tissue by action of enzymes is known as:
    A. Autolysis
    B. Haemolysis
    C. Putrefaction
    D. Osmosis

70. The most commonly used mounting medium is:
    A. Glycerine
    B. Distilled water
    C. DPX
    D. Canada Balsam

71. The special stain used to demonstrate fungus is:
    A. Congo red
    B. Haematoxylin Eosin
    C. Silver stain
    D. Von Kossa

72. All of the following except one are clearing reagents:
    A. Toluene
    B. Chloroform
    C. Xylene
    D. Alcohol

73. The melting point of paraffin wax used in histopathology lab is:
    A. 60° - 62° C
    B. 46° - 48° C
    C. 75° - 77° C
    D. 68° - 70° C

74. Oil immersion objective lens has power of:
    A. 100 x
    B. 40 x
    C. 20 x
    D. 10 x

75. Haematopoiesis in an adult human takes place in:
    A. Bone marrow
    B. Lung
    C. Liver
    D. Skin

76. The anti-coagulant "double oxalate" is combination of:
    A. Ammonium and calcium oxalate
    B. Potassium and ammonium oxalate
    C. Calcium and potassium oxalate
    D. Potassium and magnesium oxalate

77. The precursor cell of a neutrophil is:
    A. Megaloblast
    B. Myeloblast
    C. Erythroblast
    D. Plasmablast

78. Anti-coagulant of choice for coagulation studies is:
    A. Double oxalate
    B. EDTA
    C. Heparin
    D. Potassium oxalate

79. A buffy coat contains:
    A. Red blood cells
    B. Serum
    C. Leucocytes
    D. Plasma

80. What is colour code of EDTA container for blood collection:
    A. Orange
    B. Purple
    C. White
    D. Grey

81. Which vitamin is important for coagulation studies:
    A. Vitamin K
    B. Vitamin D
    C. Vitamin A
    D. Vitamin B12

82. Length of Wintrobe tube used for estimation of ESR is:
    A. 110 mm
    B. 120 mm
    C. 150 mm
    D. 160 mm

83. If the temperature is doubled, the average velocity of gaseous molecules increases by
    A. 1.4
    B. 2.0
    C. 2.8
    D. 4.0

84. The major cation found in extracellular fluid is
    A. Sodium
    B. Potassium
    C. Chloride
    D. Bicarbonate

85. The enzyme that produces DNA from RNA is
    A. RNAase P
    B. Reverse transcriptase
    C. Ribonuclease
    D. RNA polymerase

86. The following sugar will give a positive test with Seliwanoff test:
    A. Glucose
    B. Fructose
    C. Galactose
    D. Lactose

87. The agarose derived from seaweeds is used for:
    A. Spectrophotometry
    B. Gel electrophoresis
    C. Polymerase chain reaction
    D. Tissue culture

88. The destruction of all micro-organisms including spores is called:
    A. Sanitation
    B. Antisepsis
    C. Sterilization
    D. Disinfection

89. The pipette that has a bulged out portion in the middle is called:
    A. Mohr
    B. Pasteur
    C. Volumetric
    D. Micropipette

90. The durable material for making heat resistant glass-ware is
    A. Polyethylene
    B. Soda lime
    C. Polystyrene
    D. Borosilicate

91. The vitamin that is essential for calcium absorption is:
    A. Vitamin D
    B. Vitamin A
    C. Vitamin K
    D. Vitamin E

92. The universal disinfectant used in the Laboratory workplace is:
    A. Methylated spirit
    B. Formalin
    C. Hypochlorite
    D. Isopropyl alcohol

93. Kala azar is an infection caused by
    A. Trypanosomes
    B. Giardia
    C. Plasmodium
    D. Leishmania

94. The method used for estimation of serum creatinine is
    A. Ortho-toluidine
    B. Uricase
    C. Diacetyl-monoxime
    D. Jaffe

95. The first antibody that is produced in response to an infection is:
    A. Ig M
    B. Ig G
    C. Ig A
    D. Ig E

96. A patient has acute watery diarrhea and stool exam reveals motile comma shaped organisms. The infection is likely to be:
    A. Ulcerative colitis
    B. Cholera
    C. Diphtheria
    D. Staphylococcus

97. The following is a rickettsial infection:
    A. Rocky mountain spotted fever
    B. Typhoid and Paratyphoid fever
    C. Acute Rheumatic fever
    D. Brucellosis

98. The virus infection that commonly leads to cirrhosis of the liver is:
    A. Hepatitis A
    B. Hepatitis B
    C. Dengue
    D. Rotavirus

99. The first phase in the Growth curve of bacteria inoculated into a medium is:
    A. Log Phase
    B. Lag Phase
    C. Stationary Phase
    D. Generation Phase

100. The following organ does NOT function as a lymphoid organ:
    A. Thymus
    B. Liver
    C. Bone marrow
    D. Lymph Node

MLT Vocational

Q No	Key	Q No	Key	Q No	Key	Q No	Key	Q No	Key
1	B	21	B	41	A	61	A	81	A
2	B	22	A	42	C	62	B	82	A
3	B	23	B	43	B	63	B	83	D
4	B	24	A	44	C	64	C	84	A
5	C	25	B	45	A	65	C	85	B
6	B	26	D	46	D	66	C	86	D
7	C	27	C	47	B	67	A	87	B
8	A	28	B	48	B	68	C	88	C
9	B	29	B	49	B	69	A	89	C
10	A	30	C	50	D	70	C	90	D
11	C	31	D	51	B	71	C	91	A
12	C	32	D	52	A	72	D	92	C
13	A	33	B	53	D	73	A	93	D
14	A	34	A	54	C	74	A	94	D
15	B	35	A	55	B	75	A	95	A
16	C	36	B	56	C	76	B	96	B
17	A	37	A	57	B	77	B	97	A
18	A	38	D	58	B	78	C	98	B
19	B	39	C	59	C	79	C	99	B
20	D	40	C	60	C	80	B	100	B