100/2026

Question Booklet Alpha Code	A	Question Booklet Serial Number:

Total Number of Questions : 100	Time : 1 Hour 30 Minutes
Maximum Marks : 100	

INSTRUCTIONS TO CANDIDATES

1. **The question paper will be given in the form of a Question Booklet. There will be four versions of question booklets with question booklet alpha code viz. A, B, C & D.**
2. **The Question Booklet Alpha Code will be printed on the top left margin of the facing sheet of the question booklet.**
3. **The Question Booklet Alpha Code allotted to you will be noted in your seating position in the Examination Hall.**
4. **If you get a question booklet where the alpha code does not match to the allotted alpha code in the seating position, please draw the attention of the Invigilator IMMEDIATELY.**
5. **The Question Booklet Serial Number is printed on the top right margin of the facing sheet. If your question booklet is un-numbered, please get it replaced by new question booklet with same alpha code.**
6. **The question booklet will be sealed at the middle of the right margin. Candidate should not open the question booklet until the indication is given to start answering.**
7. **Immediately after the commencement of the examination, the candidate should check that the question booklet supplied to him/her contains all the 100 questions in serial order. The question booklet does not have unprinted or torn or missing pages and if so, he/she should bring it to the notice of the Invigilator and get it replaced by a complete booklet with same alpha code. This is most important.**
8. **A blank sheet of paper is attached to the question booklet. This may be used for rough work.**
9. **Please read carefully all the instructions on the reverse of the Answer Sheet before marking your answers.**
10. **Each question is provided with four choices (A), (B), (C) and (D) having one correct answer. Choose the correct answer and darken the bubble corresponding to the question number using Blue or Black Ball Point Pen in the OMR Answer Sheet.**
11. **Each correct answer carries 1 mark and for each wrong answer 1/3rd mark will be deducted. No negative mark for unattended questions.**
12. **No candidate will be allowed to leave the examination hall till the end of the session and without handing over his/her Answer Sheet to the Invigilator. Candidates should ensure that the Invigilator has verified all the entries in the Register Number Coding Sheet and that the Invigilator has affixed his/her signature in the space provided.**
13. **Strict compliance of instructions is essential. Any malpractice or attempt to commit any kind of malpractice in the Examination will result in the disqualification of the candidate.**

DO NOT WRITE HERE

1. Coagulation factor IX deficiency is associated with

   (A) Hemophilia A

   (B) BJP

   (C) Pernicious anaemia

   (D) Hemophilia B

2. The WBC increased in parasitic infections

   (A) Monocyte

   (B) Lymphocytes

   (C) Eosinophils

   (D) Neutrophils

3. The anticoagulant used for osmotic fragility test is _____

   (A) Heparin

   (B) EDTA

   (C) Double oxalate

   (D) Citrate

4. ESR is not increased in

   (A) Tuberculosis

   (B) Sickle cell anemia

   (C) Anemia

   (D) Rheumatoid arthritis

5. Which sample is used for LE cell preparation?

   (A) Urine

   (B) Buffy coat

   (C) Serum

   (D) Plasma

6. Yellow or red-brown coloured diamond rhombic crystals are _____

(A) Calcium oxalates

(B) Uric acid

(C) Amorphous urates

(D) All of these

7. An absence or marked reduction in sperm movement is _____

(A) Azoospermia

(B) Teratozoospermia

(C) Oligospermia

(D) Asthenozoospermia

8. The normal cells found in cerebrospinal fluid is _____

(A) Neutrophil

(B) Monocytes

(C) Lymphocytes

(D) All of these

9. _____ is the main sugar of semen.

(A) Sucrose

(B) Lactose

(C) Glucose

(D) Fructose

10. _____ is the test for ketone bodies.

(A) Rothera's test

(B) Gerhardt's test

(C) Acetest

(D) All of these

11. Which of the following is the correct sequence in routine tissue processing?

(A) Clearing → Dehydration → Fixation → Embedding

(B) Dehydration → Clearing → Infiltration → Embedding

(C) Embedding → Clearing → Dehydration → Fixation

(D) Fixation → Embedding → Dehydration → Clearing

12. Which of the following is a desirable property of a good fixative?

(A) It should cause excessive tissue distortion

(B) It should preserve tissue morphology

(C) It should dissolve all tissue components

(D) It should prevent staining

13. One important use of frozen sections is the demonstration of

(A) Lipids

(B) Paraffin wax

(C) Water only

(D) Formalin

14. What is the purpose of water bath during preparation of paraffin sections?

(A) To fix the tissue

(B) To dehydrate the tissue

(C) To flatten the tissue sections

(D) To stain the tissue

15. A cryostat is essentially a

(A) Heated microtome

(B) Staining machine

(C) Tissue processor

(D) Microtome placed inside a refrigerated chamber

16. A simple dual ended tool used to collect cell samples from cervix and vagina for Pap smear is

(A) Spatula

(B) Swab

(C) Scalpel blade

(D) Ayre's spatula

17. The inactive, tightly condensed X chromosome found in the somatic cells is called

(A) Barr body

(B) F body

(C) None of these

(D) Both (A) and (B)

18. The primary stains used for Fine Needle Aspiration Cytology (FNAC)

(A) May Grunwald-Giemsa Stain

(B) Papanicolaou stain

(C) Haematoxylin and eosin stain

(D) All of the above

19. Which method can remove mucous, bacteria, pus and yeast in a sample and spread the cervical cells more evenly on the slide?

(A) Liquid-based cytology

(B) FNAC

(C) Ayre's spatula

(D) None of the above

20. The fixative used in cytology is

(A) 95% ethanol

(B) 100% methanol

(C) 95% denatured alcohol

(D) All of the above

21. All of the following are autosomal disorders, except

(A) Hereditary spherocytosis

(B) Achondroplasia

(C) Familial polyposis coli

(D) Hemophilia

22. The total number of chromosomes in humans is

(A) 22 pairs of autosomes + 1 pair of sex chromosomes

(B) 23 pairs of autosomes

(C) 22 pairs of autosomes

(D) 21 pairs of autosomes + 1 pair of sex chromosomes

23. All of the following are the structural alterations in chromosomes, except

(A) Ring chromosome

(B) Isochromosome

(C) Deletion

(D) Trisomy

24. Down's syndrome is due to

(A) Trisomy of 21

(B) Trisomy of 18

(C) Trisomy of 13

(D) Monosomy of 21

25. All of the following are the methods of molecular cytogenetics, except

(A) Karyotyping

(B) Fluorescent in situ hybridization

(C) DNA microarray

(D) ELISA

26. The first blood group system to be discovered is

(A) ABO blood group

(B) Rh blood group

(C) Lewis blood group

(D) Duffy blood group

27. The ideal temperature for storage of platelet concentration is

(A) 20°C to 24°C for 5 days

(B) –20°C to –24°C for 5 days

(C) –7°C to –10°C for 10 days

(D) 7°C to 10°C for 10 days

28. The count at which prophylactic platelet transfusion is indicated for adult surgical points is

(A) 50,000/mm^3

(B) 20,000/mm^3

(C) 10,000/mm^3

(D) 1,00,000/mm^3

29. All of the following are transfusion reactions, except

(A) Urticaria

(B) Air embolism

(C) Graft versus host reaction

(D) Acute Leukemia

30. The transfusion-transmitted infections for which screening is mandatory in India include all, expect

(A) HIV 1 and 2

(B) Malaria

(C) Hepatitis B and C

(D) CMV

31. The best method for the disposal of human anatomical waste is

(A) Chemical disinfection

(B) Autoclaving

(C) Incineration

(D) Composting

32. Peritrichous arrangement of flagella refers to

(A) Single flagellum at one pole

(B) Flagella all around the cell

(C) Flagella at both poles

(D) Tuft of flagella at one pole

33. Sterilization of culture media containing serum is by

(A) Filtration

(B) Gamma radiation

(C) Ethylene oxide

(D) Autoclave

34. Prions are discovered by

(A) Stanley B. Prusiner

(B) Joseph Lister

(C) Kary Mullis

(D) Élie Metchnikoff

35. Electron microscope differs from light microscope in all, except

(A) Highest practical magnification

(B) Medium of travel

(C) Resolution

(D) No need for specimen preparation

36. Which of the following is known as Eaton's agent?

(A) *Burkholderia pseudomallei*

(B) *Mycobacterium Intracellulare*

(C) *Mycobacterium paratuberculosis*

(D) *Mycoplasma pneumoniae*

37. Lipopolysaccharide is a component of cell wall of

(A) Gram-positive bacteria

(B) Gram-negative bacteria

(C) Fungi

(D) Virus

38. Bacterial capsule can be best demonstrated by

(A) Gram staining

(B) Acid-fast staining

(C) Negative staining

(D) Albert's staining

39. The indicator in MacConkey agar is

(A) Neutral red

(B) Phenol red

(C) Bromothymol blue

(D) Methylene blue

40. The principle of widal test is

(A) Precipitation

(B) Agglutination

(C) Complement fixation

(D) Immunofluorescence

41. Increasing the agar concentration to approximately which level helps prevent swarming of proteus species?

(A) 0.5 %
(B) 2 %
(C) 1.5 %
(D) 6 %

42. Which medium is commonly used for routine antimicrobial susceptibility testing by the disc diffusion method?

(A) Blood agar
(B) MacConkey agar
(C) Mueller–Hinton agar
(D) Nutrient agar

43. The infective stage of *Entamoeba histolytica* for humans is

(A) Trophozoite
(B) Mature cyst
(C) Immature cyst
(D) Oocyst

44. The characteristic motility of Giardia lamblia is

(A) Corkscrew motility
(B) Tumbling motility
(C) Falling-leaf motility
(D) Darting motility

45. Which of the following parasites is transmitted by the bite of an infected sandfly?

(A) Wuchereria bancrofti
(B) Plasmodium species
(C) Leishmania donovani
(D) Trypanosoma species

46. Which of the following describes *Enterobius Vermicularis* ova?

(A) Bile-stained eggs with mamillary coat
(B) Barrel-shaped eggs with bipolar plugs
(C) Planoconvex eggs
(D) Operculated eggs

47. In a patient with malaria, peripheral blood smear shows multiple ring forms in some RBCs. The most likely species is

(A) Plasmodium falciparum

(B) Plasmodium malariae

(C) Plasmodium vivax

(D) Plasmodium ovale

48. Acanthamoeba infection is acquired through

(A) Ingestion of contaminated food and water

(B) Contact with contaminated water through eye

(C) Bite of an infected mosquito

(D) Inhalation of cysts from infected animals

49. Which of the following species of Candida is capable of forming germ tubes?

(A) *Candida krusei*

(B) *Candida albicans*

(C) *Candida glabrata*

(D) *Candida auris*

50. Which of the following is a false statement regarding *Cryptococcus neoformans*?

(A) Its capsule can be demonstrated using India ink preparation

(B) Is a yeast producing pseudohyphae

(C) Found in pigeon droppings

(D) Produces urease enzyme

51. Which of the following species of dermatophytes does not infect hair?

(A) *Trichophyton species*

(B) *Microsporum species*

(C) *Epidermophyton species*

(D) All of the above

52. **Which of the following microscopic characteristics is seen with Aspergillus species?**

(A) **Broad aseptate hyphae with sporangiophores, ending in sporangium containing spores**

(B) **Clusters of blastoconidia along pseudohyphae**

(C) **Branched septate hyphae with conidiophores ending in vesicles giving rise to conidia**

(D) **Spherules with endospores**

53. **Which of the following culture media stimulates chlamydospore production in *Candida albicans*?**

(A) **Brain heart infusion agar**

(B) **Xylose 1ysine deoxycholate agar**

(C) **Mueller-Hinton agar**

(D) **Cormeal agar with Tween 80**

54. **All of the following are dimorphic fungi, EXCEPT**

(A) ***Rhizopus arrhizus***

(B) ***Histoplasma capsulatum***

(C) ***Sporothrix schenckii***

(D) ***Blastomyces dermatitidis***

55. **Cell line that undergo 10-50 divisions before cell death is**

(A) **Monkey kidney cell line**

(B) **Human fibroid cell line**

(C) **HeLa cell line**

(D) **Vero cell line**

56. **Cell tropism of cytomegalovirus is**

(A) **Red blood cells**

(B) **Lymphocytes**

(C) **Monocyte/Macrophages**

(D) **Neutrophils**

57. Erythema infectiosum or fifth disease is caused by

(A) Human papillomavirus

(B) Parvovirus 19

(C) Ebstein-Barr Virus

(D) Human Herpesvirus 8

58. Laboratory diagnostic methods of choice for detection of viral infection include all, except

(A) Fluorescent microscopy

(B) PCR

(C) ELISA

(D) Vitek 2 test

59. The recommended temperature for transporting most viral specimens to the laboratory is

(A) –20°C in a deepfreezer

(B) 2-8°C (on ice or cold packs)

(C) Room temperature (25°C)

(D) 37°C

60. The correct statement about viruses

(A) They possess both DNA and RNA

(B) They are larger than bacteria

(C) They possess enzymes necessary for protein and nucleic acid synthesis

(D) Not susceptible to antibiotics

61. Glassware, contaminated with material that is difficult to remove is treated with ____

(A) Acetic acid

(B) Sodium hydroxide

(C) Distilled water

(D) Nitric acid

62. Which of the following substances can be used to standardize 1.0 mL volumetric pipette?

(A) Dilute hydrochloric acid

(B) Mercury

(C) Concentrated nitric acid

(D) Sodium dichromate

63. As a first aid measure, polyethylene glycol mixed with water is used for irrigation of skin affected by contact with

(A) Concentrated sulphuric acid

(B) Sodium hydroxide

(C) Phenol

(D) Infectious specimen

64. A chemical compound or a mixture of compound, usually in solution, used for the chemical analysis or for detecting biological constituents is called _____

(A) Catalyst

(B) Reagent

(C) Solution

(D) Analyte

65. Pick out the false statement.

(A) Type II water should be used for the preparation of primary and secondary standards

(B) Type III may be used for washing glassware

(C) Type I water should be used for all special types of quantitative investigations

(D) Type II water may be used for routine qualitative tests

66. The SI unit for molality is

(A) litre per litre

(B) mole per mole

(C) mole per litre

(D) mole per kilogram

67. Which of the following is the most appropriate primary standard for standardizing a freshly prepared 1N hydrochloric acid solution?

(A) Methyl orange

(B) Sodium hydroxide

(C) Sodium carbonate

(D) Glacial acetic acid

68. Pick the item that should NOT be disposed of in the red biomedical waste bag.

(A) Used intravenous tubing

(B) Used urinary catheter

(C) Used urine collection bag

(D) Waste paper and thermocol

69. Which among the following is preferred for preserving glucose concentration in a blood sample intended for estimation of glucose?

(A) Sodium citrate

(B) Sodium fluoride and Potassium oxalate

(C) Heparin

(D) EDTA

70. Identify the change that is least likely to occur in an unpreserved urine specimen left standing at room temperature for a prolonged period.

(A) Conversion of glucose to lactic acid

(B) Conversion of urobilinogen to urobilin

(C) Conversion of bilirubin to biliverdin

(D) Urine becomes acidic by bacterial action

71. Which sample holder is typically employed in a flameless atomic absorption technique?

(A) Borosilicate glass cuvette

(B) Flame

(C) Carbon rod in an enclosed chamber

(D) Reflective surface

72. Which of the following is the application of radioactivity in medical diagnosis?

(A) Thyroid scanning

(B) PET scan (Positron Emission Tomography scan)

(C) Bone scan

(D) All of the above

73. Increased anion gap acidosis is seen in all the following conditions, except

(A) Methanol toxicity

(B) Renal tubular acidosis

(C) Ethyl alcohol toxicity

(D) Lactic acidosis

74. Relation between pH, pKa and buffer concentration are explained by which equation?

(A) Michaelis–Menten equation

(B) Henderson–Hasselbalch equation

(C) Gibbs–Donnan equation

(D) Nernst equation

75. All the following glucose transporters are not under the control of insulin, except

(A) GLUT3 (B) GLUT7

(C) GLUT1 (D) GLUT4

76. Friedewald equation should not be used in following conditions, except

(A) Samples containing significant quantities of chylomicron

(B) Dysbetalipoproteinemia patients

(C) Samples having triglyceride concentration below 400 mg/dL

(D) Samples having triglyceride concentration above 400 mg/dL

77. Increase methylmalonic acid in urine sample is the characteristic of deficiency of

(A) Vitamin C

(B) Folate

(C) Vitamin B12

(D) Vitamin B1

78. Which is the best specimen type for analyzing porphobilinogen?

(A) Blood anticoagulated with EDTA and protected from light

(B) Fresh early morning urine sample collected without preservative and protected from light

(C) Heparinized plasma separated and frozen immediately after collection

(D) 24 hour urine sample collected in a dark brown container and preserved with 0.1% HCl

79. Following are the enzymes used for diagnostic purposes, except

(A) Alkaline phosphatase

(B) Hexokinase

(C) Streptokinase

(D) Glucose oxidase

80. All of the following are the requirements of an ideal cardiac biomarker, except

(A) Sensitivity

(B) Specificity

(C) Rapid release from heart into circulation

(D) Rapid removal from circulation

81. Which of the following enzymes is included in liver enzyme?

(A) Creatine kinase

(B) Acid phosphatase

(C) Lipase

(D) Alanine aminotransferase

82. Which of the following hormones is synthesized as prehormone and modified within β cells of pancreas?

(A) Insulin

(B) Glucagon

(C) TSH

(D) PTH

83. The main function of Eukaryotic DNA polymerase γ is

(A) DNA repair

(B) Mitochondrial DNA synthesis

(C) Leading strand synthesis

(D) Lagging strand synthesis

84. Blotting technique used to visualize specific RNA fragment is

(A) Western blotting

(B) Southern blotting

(C) Northern blotting

(D) Southwestern blotting

85. Which of the following vectors has a cloning capacity of several hundred kilobase?

(A) Plasmids

(B) Phages

(C) Cosmids

(D) YAC

86. Which among the following is the gold standard method for assessing GFR?

(A) Urea clearance

(B) Creatinine clearance

(C) Insulin clearance

(D) Cockcroft-Gault formula

87. The most accurate method to estimate specific gravity of urine is

(A) Urinometer

(B) Refractometer

(C) Osmometric

(D) Dipstick

88. Stain used for lipoprotein electrophoresis is

(A) Amido Black 0.5%

(B) Sudan Black 0.1%

(C) Bromophenol blue 0.1%

(D) Azocarmine 0.5%

89. On chemical analysis of urinary calculi, pale blue flame is given by

(A) Uric acid

(B) Cystine

(C) Oxalate

(D) Phosphate

90. Which of the following chromatographic techniques separates protein based on stokes radius?

(A) SDS-PAGE

(B) Isoelectric focusing

(C) HPLC

(D) Gel filtration chromatography

91. The most widely used method for detecting purity of protein is

(A) SDS-PAGE

(B) Isoelectric focusing

(C) HPLC

(D) Gel filtration chromatography

92. Histamine fast achlorhydria is a characteristic of

(A) Pernicious anemia

(B) Zollinger–Ellison syndrome

(C) Carcinoid tumour

(D) Duodenal ulcer

93. Which of the following statements is/are correct about Quality Control Charts?

(i) In Levi-Jenning's (L-J) chart, when control values are within the control limits {+ or – 3SD}, patient's value can be reported

(ii) In Westgard's multirule chart, two different controls are used. When both the controls are within 2s, the values are acceptable.

(iii) In Westgard's multirule chart, if a single value exceeds plus or minus 2s, it is to be taken as a warning.

(A) Only (i) and (ii)

(B) Only (ii) and (iii)

(C) Only (i) and (iii)

(D) All of the above

94. Transferring electrophoretically-separated proteins into a strip of nylon membrane by electroblotting is the second step in

(A) Radial immunodiffusion

(B) Western blotting

(C) Enzyme-linked immunosorbent assay

(D) Immunofixation

95. Which of the following immunochemical assays requires separation of the free label from the bound labelled substance?

(A) Enzyme-linked Immunosorbent Assay

(B) Luminescent Oxygen Channeling Immunoassay

(C) Enzyme-Multiplied Immunoassay Technique (EMIT)

(D) Cloned Enzyme Donor Immunoassay (CEDIA)

96. To confirm heroin use, testing of which urinary metabolite is considered unique and specific for this drug?

(A) 6-Acetylmorphine

(B) Morphine

(C) Codeine

(D) Meperidine

97. Which of the following statements is/are correct about cardiac markers?

(i) Peak values of Troponin I occurs at 14-24 hours after acute myocardial infarction

(ii) Patients with congestive cardiac failure have high plasma concentration of brain natriuretic peptide

(iii) Myoglobin is released 6-8 hours after onset of symptoms during acute myocardial infarction

(A) Only (i) and (ii)

(B) Only (ii) and (iii)

(C) Only (i) and (iii)

(D) All of the above

98. Which of the following are used for automatic identification and data collection?

(i) Barcoding

(ii) Radio frequency identification

(iii) Optical mark readers

(A) Only (i) and (ii)

(B) Only (ii) and (ii)

(C) Only (i) and (iii)

(D) All of the above

99. The transport of a quantity of analyte or reagent from one specimen reaction into a subsequent one is referred to as

(A) Batching

(B) Carryover

(C) Misdelivery

(D) Indiscrete handling

100. Which of the following statements is/are correct about Immunoglobulin?

(i) Immunoglobulin G is seen in secondary immune response and can pass from vascular compartment to interstitial space

(ii) Immunoglobulin M are dimers and is seen in seromucous secretions of gastrointestinal tract

(iii) Immunoglobulin E mediates hypersensitivity and anaphylaxis

(A) Only (i) and (ii)

(B) Only (ii) and (iii)

(C) Only (i) and (iii)

(D) All of the above

A

SPACE FOR ROUGH WORK