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Question Booklet Sl. No.

Question Booklet Alpha Code

A

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Total Number of Questions : 100

Time : 90 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 1/3 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.

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1. A neutrophil that has a phagocytised denatured nuclear material of another cell is called
 - A) Tart cell
 - B) Pelger-Huet cell
 - C) LE cell
 - D) Pyknotic neutrophil
2. Factors affecting osmotic fragility tests are
 - A) Relative volume of blood and saline
 - B) Final pH of blood in saline suspension
 - C) The temperature at which tests are carried out
 - D) All the above
3. D-dimer latex slide test for detection of cross linked fibrin is based on
 - A) Latex agglutination inhibition
 - B) Flocculation inhibition
 - C) Agglutination test
 - D) Flocculation test
4. Prothrombin time determination is helpful in
 - A) Presurgical screening
 - B) Monitoring of patients on oral anticoagulant therapy
 - C) Determination of deficiency of factors II, V, VII and X
 - D) All the above
5. First morphologically identified cell in the myeloid series is
 - A) Myelocyte
 - B) Myeloblast
 - C) Metamyelocyte
 - D) Megakaryoblast
6. Specific gravity of urine less than 1.005 is seen in
 - A) Diabetes mellitus
 - B) Diabetes insipidus
 - C) Acute nephritis
 - D) All the above
7. Crystals found in acid urine
 - A) Calcium oxalate
 - B) Calcium carbonate
 - C) Calcium phosphate
 - D) Triple phosphate
8. Which of the following method is not used as a concentration method for parasites in stool ?
 - A) Simple flotation method
 - B) Zinc sulphate concentration method
 - C) KOH concentration method
 - D) Formol ether sedimentation method

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9. Which is not true about tubercular meningitis ?
A) CSF pressure is increased B) Low CSF sugar
C) Does not show any coagulam D) High CSF protein
10. What is normal sperm count ?
A) 200 – 300 million sperms/ml B) 150 – 200 million sperms/ml
C) 100 – 50 million sperms/ml D) 60 – 150 million sperms/ml
11. FFP is given to patients with
A) Thrombocy to penia B) Anaemia
C) Leukaemia D) Coagulation factor deficiency
12. Direct coombs test positive means coombs serum has bound to
A) Antigen on RBC B) Antibody coated on RBC
C) Antibody in the plasma D) None of the above
13. JK stands for the blood group
A) Duffy B) Lutheran C) Kell D) Kidd
14. How many days blood can be stored with CPDA ?
A) 45 days B) 21 days
C) 35 days D) 7 days
15. Which is not an acute transfusion reaction ?
A) Anaphylaxis B) Allergic reaction
C) Transfusion transmitted diseases D) Acute hemolytic reaction
16. Fixative for bloody specimens in histopathology
A) Helly's solution B) Zenker's solution
C) Clarke's solution D) Bouin's solution
17. The microtome with fixed block and moving knife
A) Sliding microtome B) Rotary microtome
C) Rocking microtome D) Freezing microtome
18. Example for Alum Haematoxylene
A) Weigert's Haematoxylene B) Heidenhain's Haematoxylene
C) Loyez Haematoxylene D) Ehrlich's Haematoxylene

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19. Perl's Prussian blue reaction is used for the demonstration of
A) Ferric Iron B) Mucin C) Glycogen D) Lectin
20. Which one of the following is not an example of vapour fixative ?
A) Formaldehyde B) Osmium tetroxide
C) Formol saline D) Ethyl alcohol
21. Study of cells shed from various parts of the body is called
A) Hormonal Cytology B) Exfoliative Cytology
C) Aspiration Cytology D) Abrasive Cytology
22. Collection of a fluid specimen in a medium that will preserve the morphology up to the time of slide preparation is called
A) Fixation B) Pre fixation
C) Dehydration D) Mounting
23. Ideal fixative is used for cell block preparation of fluid specimens
A) AAF fixative B) Carbowax fixative
C) Carnoys fixative D) Diaphine fixative
24. The Feulgen stain is used for the demonstration of
A) DNA B) Fat C) Glycogen D) Iron
25. Chemical used in cytology for mailing unstained smear
A) 50% ethyl alcohol B) Glycerine
C) Mucolox D) Saccomano's solution
26. Karyotype of Turner's Syndrome
A) 45, X B) 47, XX
C) 47, XXY D) 48, XXXX
27. Missing of a chromosome from the normal complement is called
A) Disomy B) Monosomy
C) Trisomy D) Tetrasomy

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28. The fixative used in Karyotyping
- A) Ether alcohol mixture
 - B) Ethanol
 - C) Methanol
 - D) 3:1 ratio of methanol and glceal acetic acid
29. A chromosome in which the centromere is located very near to one end is called
- A) Metacentric
 - B) Acrocentric
 - C) Sub metacentric
 - D) Telocentric
30. Banding technique used for the identification of Y chromosome
- A) Q Banding
 - B) G Banding
 - C) R Banding
 - D) C Banding
31. The first vaccine developed from rabbit spinal cord suspension against Rabies was by
- A) Edward Jenner
 - B) Robert Koch
 - C) Louis Pasteur
 - D) Roux and Yersin
32. The part of compound microscope that regulates the amount of light to view the object clearly is
- A) Condenser
 - B) Planoconcave mirror
 - C) Iris Diaphragm
 - D) Objective lens
33. Culture medium containing heat labile ingredients like Lowenstein Jensen Medium can be sterilized by
- A) Membrane filtration technique
 - B) Tyndallisation
 - C) Autoclaving
 - D) Inspissation
34. Cary Blair Medium is an example for
- A) Enrichment Medium
 - B) Transport Medium
 - C) Selective Medium
 - D) Indicator medium
35. As per Biomedical Waste Management Act 2016, Contaminated material, lab specimen, culture media etc comes under which category
- A) Yellow
 - B) White
 - C) Blue
 - D) Red

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36. Sample containing infectious agents like LCM virus, HIV virus etc is to be handled in which level biosafety cabinet
- A) Basic biosafety level 1
 - B) Containment biosafety level 3
 - C) Maximum Containment biosafety level 4
 - D) None of the above
37. Filarial worms are classified under
- A) Tissue Nematodes
 - B) Tissue Cestodes
 - C) Tissue Trematodes
 - D) Gastrointestinal Trematodes
38. Definitive host for *Toxoplasma gondii* a protozoan parasite is
- A) Domestic cats
 - B) Rodents
 - C) Monkeys
 - D) Sandfly
39. For Visceral Leishmaniasis, best sample suitable for diagnosis is
- A) Blood sample collected at night
 - B) Stool specimen
 - C) Sputum for 3 consecutive days
 - D) Bone marrow biopsy
40. Multiple ring form in RBC are a common characteristic of which plasmodia causing human malaria
- A) *Plasmodium vivax*
 - B) *Plasmodium ovale*
 - C) *Plasmodium malariae*
 - D) *Plasmodium falciparum*
41. The most suitable concentration method for stool examination to detect all helminth eggs and protozoan cyst is
- A) Saturated salt solution technique
 - B) Zinc Sulphate floatation technique
 - C) Formol-ether sedimentation technique
 - D) Baermann concentration technique

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42. Of all the Romanowsky's stain used for detection of Malarial parasite, which is considered as the gold standard staining method as per the WHO for detection of malarial parasite
- A) Giemsa B) Leishman C) Fields D) Methylene Blue
43. Which among the following is not a method to test the efficiency of a disinfectant ?
- A) Triphenyl tetrazolium chloride test B) Rideal-walker test
C) Chick-Martin test D) Kelsey-sykes test
44. Biological sterilisation control of an Autoclave is
- A) Spores of Clostridium tetani
B) Spores of Bacillus subtilis
C) Spores of Bacillus pumilis
D) Spores of Geobacillus stearothermophilus
45. Which of the following statements is/are true about the stationary phase of bacterial growth curve ?
- i. Cells starts dividing and their number increases exponentially.
ii. Accumulation of toxic products.
iii. Equilibrium exist between dying and newly formed cells.
iv. Increase in size of the cells and no increase in number.
- A) i, iii and iv B) ii, iii and iv C) ii and iii D) iii and iv
46. Which among the following is not a standard strains used for checking the potency of antibiotic disc periodically ?
- A) Staphylococcus aureus ATCC 25923
B) Enterococcus faecium ATCC 31426
C) Escherichia coli ATCC 25922
D) Pseudomonas aeruginosa ATCC 27853
47. Oxidase reagent is
- A) P-dimethyl amino benzaldehyde
B) Tetramethyl-P-phenylene diamino dihydrochloride
C) L-Phenylalanine
D) O-Nitrophenyl β -D-galactopyranoside

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48. Which among the following is not a semiquantitative method of urine culture ?
- A) Filter-paper method B) Standard loop method
C) Rant-shepherd method D) Dip-slide method
49. pH of Sabouraud's dextrose agar
- A) 4.4 B) 5.6 C) 8.6 D) 10.5
50. Which of the following is a dimorphic fungi ?
- A) *Penicillium marneffi* B) *Aspergillus fumigatus*
C) *Aspergillus flavus* D) *Cryptococcus neoformans*
51. Which of the following is true regarding the sites of fungal infections ?
- A) Systemic mycosis-Dermatophytosis
B) Superficial mycosis-Sporotrichosis
C) Subcutaneous mycosis-Chromoblastomycosis
D) Deep mycosis-Rhinosporidiosis
52. Which of the following is true regarding *Candida* ?
- A) It produces infection of skin and mucosa and it will never affect the internal organs
B) *Candida tropicalis* can be identified by their ability to form germ tube
C) *Candida* is the only pathogenic yeast that cause infection in human being
D) *Candida albicans* forms chlamydospores on cornmeal agar culture at 20°C
53. Mucormycosis is caused by all the following except
- A) *Absidia* B) *Rhizopus*
C) *Mucor* D) *Exophiala*
54. Which of the following is true about *Cryptococcus* ?
- i. Demonstration of capsular antigen can be done by latex agglutination test.
ii. It can produce arthrospores.
iii. It cannot be growth on saboraud's dextrose agar.
iv. It produces opportunistic infection in AIDS patients.
- A) i, iv B) i, ii, iii, iv C) i, ii, iv D) ii, iii, iv

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55. Which among the following is not a continuous cell line ?
A) BHK 21 B) RK 13 C) WI 38 D) A 549
56. The cytopathic effect produced by measles virus infection
A) Syncytium formation B) Cytoplasmic vacuolation
C) Discrete focal degeneration D) Crenation and degeneration of cells
57. Which among the following regarding the shape of the virus is correctly matched ?
A) Ebolavirus-rod shape B) Tobacco mosaic virus-brick shaped
C) Pox virus-filamentous D) Rabies virus-bullet shaped
58. Cowdry type B inclusion bodies are seen in
A) Yellow fever B) Polio virus
C) Herpes virus D) Rabies virus
59. Which among the following is a antigenically defective virus ?
A) Hepatitis A B) Hepatitis B C) Hepatitis C D) Hepatitis D
60. Which among the following is false regarding viral diagnosis ?
A) Demonstration of negri bodies on seller's stain is a routine diagnostic method for rabies in dogs
B) Immunofluorescence offers a rapid method of demonstration of virus antigen
C) Examination of a single sample of serum for antibodies is diagnostic of any viral infection
D) Real time PCR is a very sensitive technique that can detect a single molecule of viral DNA in a clinical specimen
61. Class A glasswares are made up of
A) Sodalime glass B) Borosilicate glass
C) Fluorocarbon resins D) Polycarbonate
62. Volumetric glasswares are calibrated at a specified temperature of
A) 20°C B) 37°C
C) 4 to 6°C D) None of these

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63. The major dry chemical used in ABC type fire extinguisher is
A) Potassium chloride
B) Potassium bicarbonate
C) Mono ammonium phosphate
D) CO₂
64. Which of the following is a secondary standard chemical ?
A) Oxalic acid
B) Sodium carbonate
C) Zinc pellets
D) Sodium hydroxide
65. Which of the following method is more suitable for the preparation of pyrogen free water ?
A) ultrafiltration
B) distillation
C) deionisation
D) filtration
66. In SI units the prefix giga corresponds to
A) 10⁻⁹
B) 10⁻⁶
C) 10⁹
D) 10⁶
67. Molarity is
A) Number of moles of solvent per litre of solution
B) Number of moles of solute per litre of solution
C) Number of moles of solvent per kilogram of solute
D) Number of moles of solute per kilogram of solvent
68. Which one the following best preserves urine sediment ?
A) acetic acid
B) hydrochloric acid
C) chloroform
D) formalin
69. In sodium fluoride potassium oxalate mixture sodium fluoride inhibit the action of
A) hexokinase
B) enolase
C) phosphofructokinase
D) pyruvate kinase
70. In biomedical waste management system white coloured containers are used to dispose
A) Chemical waste
B) Anatomical waste
C) Cytotoxic drugs
D) Sharp objects
71. In spectrophotometer the monochromator used is
A) Prism
B) Filter
C) Both A) and B)
D) None of these

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72. Iodine 131 hippuran is used for
A) DNA studies
B) Treating polycythemia
C) Measuring the effective renal plasma flow
D) Radioimmunoassay
73. Hyperventillation causes
A) Respiratory acidosis
B) Respiratory alkalosis
C) Anion gap acidosis
D) Anion gap alkalosis
74. Vant Hoff's law is concerned with
A) Strong electrolytes
B) Weak electrolytes
C) Osmotic pressure
D) Ionic solutions
75. The stationary phase in the reverse phase chromatography is
A) Non polar
B) Polar
C) Not affected by polarity
D) Water
76. Purification of enzymes are proteins are best done by
A) Liquid chromatography
B) Thin layer chromatography
C) Paper chromatography
D) Affinity chromatography
77. One assay on all samples in batch can be performed by
A) Random access analyser
B) Continuous access analyser
C) Batch analyser
D) None of these
78. The basic principle of drychemistry analyser is
A) Turbidometry
B) Light scattering
C) Emission
D) Reflectance photometry
79. Which one of the following is not a laboratory accreditation agency ?
A) CDSCO
B) NABL
C) CAP
D) ISO
80. In quality control while plotting LJ chart a single control measurement exceeds a 2S control limit indicates
A) Accuracy
B) Rejection
C) Precise
D) Sensitivity

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81. Congenital renal glycosuria is due to defect in
A) SGLuT-2
B) SGLuT-1
C) GluT-2
D) GluT-3
82. Neuropsychiatric manifestations can be seen in all the following except
A) Congenital erythropoietic porphyria
B) Hereditary coproporphyrinuria
C) Variegate porphyria
D) Acute intermittent porphyria
83. All the following statements about thalassemia are true except
A) Alpha thalassemia major is not seen clinically
B) Beta thalassemia major manifests only after birth
C) Alpha thalassemia major is compatible with life
D) Beta thalassemia is more common than alpha variety
84. Iron deficiency anemia is characterized by
A) Decreased ferritin, increased transferrin, decreased TIBC
B) Increased ferritin, increased transferrin, decreased TIBC
C) Decreased ferritin, increased transferrin, increased TIBC
D) Decreased ferritin, decreased transferrin, decreased TIBC
85. Sensitive marker for alcohol abuse is
A) Alanine aminotransferase
B) Aspartate aminotransferase
C) Nucleotide phosphatase
D) Gamma glutamyl transferase
86. Which one of the following enzyme act primarily by Covalent catalysis ?
A) Pepsin
B) Chymotrypsin
C) Lysosomal cathepsin
D) Protease by HIV virus
87. Which of the following statement is true regarding ligases ?
A) Synthetases are enzymes belonging to class of ligases
B) They are ATP independent
C) Glycogen synthase belongs to ligases
D) None of the above

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88. Congenital adrenogenital syndrome is not characterised by
- A) 21-hydroxylase deficiency
 - B) High ACTH production
 - C) Precocious puberty in boys
 - D) Decreased 17-hydroxyprogesterone
89. DNA replication in Prokaryotes is characterised by
- A) Presence of single origin of replication site
 - B) Absence of proofreading
 - C) Absence of single stranded binding protein
 - D) Presence of telomerases
90. During translation GTP is utilized in all the following steps except
- A) Formation of 80S initiation complex
 - B) Translocation
 - C) Formation of 48S initiation complex
 - D) Termination
91. True statement regarding cosmids
- A) Cosmid contain co-sites
 - B) Grow in plasmid form in bacteria
 - C) Several hundred kilobases of DNA can be inserted
 - D) Both A) and B)
92. Which one of the following statement is true regarding uric acid crystals ?
- A) Seen in urine only in pathological conditions
 - B) Found in deposits of alkaline urine
 - C) They are colourless in urine deposits
 - D) Dissolves when urine warmed to 60°C
93. The test used to detect presence of hydrochloric acid in gastric juice is
- A) Ferric chloride test
 - B) Maclean's test
 - C) Giinzberg test
 - D) Uffelmann's test

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94. pH 8.6 is suitable for serum protein electrophoresis because
- A) At pH 8.6 all proteins are negatively charged
 - B) At higher pH there is chance of denaturation
 - C) At lower pH buffering capacity is low
 - D) All of the above
95. Which of the following interleukin induces the production of acute phase protein ?
- A) IL-1
 - B) IL-2
 - C) IL-4
 - D) IL-5
96. Which one of the following statement is incorrect regarding monoclonal antibodies ?
- A) It can be used in cancer screening
 - B) It can be used to monitor blood levels of many drugs
 - C) It can be used to diagnose or treat diseases
 - D) It cannot be used to diagnose infectious diseases
97. Which one of the following is not required to calculate eGFR by Cockcroft-Gault equation ?
- A) Urine volume
 - B) Age
 - C) Weight
 - D) Plasma creatinine
98. 25 year old male with 2 year history of refractory hypertension presented to the medicine O.P.D with recurrent episodes of palpitation, headache and profuse sweating. Which of the following test can be done to diagnose this condition ?
- A) 24 hour urine VMA estimation
 - B) 24 hour 5-HIAA estimation
 - C) Obermeyer test
 - D) 24 hour urine protein
99. The test used to detect mucopolysaccharide is
- A) Cetylpyridinium chloride test
 - B) Alcian blue staining
 - C) Ferric chloride test
 - D) Both A) and B)
100. True statement regarding amphetamine abuse is
- A) Immunoassay is the confirmatory test
 - B) GC-mass spectrophotometry is the confirmatory test
 - C) Drug cannot be detected in urine
 - D) Renal tubular dysfunction is a common feature
-

Space for Rough Work

