

06/23

Question Booklet Alpha Code

A

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| | Question Booklet Sl. No. |
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A

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. Acid present in chromic acid solution is
 - A) Phosphoric Acid
 - B) Nitric Acid
 - C) Hydrochloric Acid
 - D) Sulphuric Acid
2. Beer-Lambert law is applied in the instrument
 - A) Microscope
 - B) Colorimeter
 - C) pH meter
 - D) Incubator
3. Laboratory incubator is usually set with a temperature of
 - A) 8°C
 - B) 56°C
 - C) 100°C
 - D) 37°C
4. Which of the following is used to keep chemicals free from water ?
 - A) Hot air oven
 - B) Desiccators
 - C) Incubator
 - D) Seitz filter
5. Bleaching powder is prepared from
 - A) Benzaldehyde
 - B) Gluteraldehyde
 - C) Hypochlorite
 - D) Sodium chloride
6. Solution in which no more salt is able to dissolve is
 - A) Saturate solution
 - B) Percent solution
 - C) Molar solution
 - D) Standard solution
7. Which of the following is an inflammable chemical ?
 - A) Xylene
 - B) Chloroform
 - C) Alcohol
 - D) All the three
8. Reverse osmosis is used to prepare
 - A) Disinfectants
 - B) Deionised water
 - C) Distilled water
 - D) None of these
9. Example for a chemical that is kept under water
 - A) Sodium
 - B) Picric acid
 - C) Calcium carbonate
 - D) Sodium hypochlorite

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10. Hospital wastes like used syringe, needle etc. are stored in which coloured bin ?
A) Red B) Yellow C) White D) Blue
11. ABO blood group system was introduced by
A) Antonie Van Leeuwenhoek B) Robert Frost
C) Louis Pasteur D) Karl Landsteiner
12. In ACD solution erythrocytes get energy from
A) Glucose B) Citric acid
C) Citrate D) Haemoglobin
13. Which of the following is not investigated during donor selection in blood bank ?
A) Hb B) Weight of donor
C) Relationship with patient D) Pulse
14. Vaccutainer with red top containing
A) Heparin B) EDTA
C) No anticoagulant D) Sodium citrate
15. Which anticoagulant inhibits thrombin ?
A) Double oxalate B) EDTA
C) Citrate D) Heparin
16. Which type of the cells present in a healthy adult as 3 lakhs/cu mm of blood ?
A) RBC B) Platelets
C) Neutrophils D) Agranulocytes
17. Leishman stain is an example for
A) Romanowsky stains B) Acidic stains
C) Basic stains D) Supravital stains
18. RBCs are lysed by acetic acid in
A) Piolets fluid B) Hinglemans fluid
C) Turkes fluid D) Dacies fluid

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19. In a centrifuged blood sample, WBC appear
- A) As a top layer
 - B) As a bottom layer
 - C) Between RBC and platelet
 - D) Below the plasma and above the platelets
20. Reticulocytes are
- A) Immature RBC
 - B) Immature WBC
 - C) Antibody producing cells
 - D) Cells help in blood clotting
21. Length of westergrens pipette is
- A) 100 cm
 - B) 10 cm
 - C) 100 mm
 - D) 300 mm
22. For CBC, blood is collected with anticoagulant
- A) No anticoagulant is used
 - B) Sodium citrate
 - C) EDTA
 - D) Double Oxalate
23. Coulter counter is used for
- A) ESR determination
 - B) Prothrombin time
 - C) CBC
 - D) Blood smear preparation
24. In case of blood glucose estimation, delay in separation of serum from blood results in
- A) High glucose level
 - B) Low glucose level
 - C) No change
 - D) None of the above
25. In Diabetes Mellitus, fruity odour of urine is due to the presence of
- A) Glucose
 - B) Protein
 - C) Pus cells
 - D) Acetone

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26. Esbach's reagent is
A) Picric acid and citric acid
B) Acetic acid and picric acid
C) Acetic acid and citric acid
D) None of the above
27. Ketonuria is seen in
A) Diabetes Mellitus
B) Alkalosis
C) Von Gierke's disease
D) All the above
28. HbA_{1C} level reveals the mean glucose level over a period of
A) Previous 12-14 weeks
B) Previous 8-10 weeks
C) Previous 2-3 weeks
D) Previous 5-10 days
29. Renal threshold of glucose is
A) 120 mg% B) 80 mg% C) 180 mg% D) 140 mg%
30. Multiple myeloma patient shows
A) Haemoglobinuria
B) Alkaptonuria
C) Myoglobinuria
D) Bence – Jones proteinuria
31. Reference value of creatinine clearance in female is
A) 120-160 ml/minute
B) 80-115 ml/minute
C) 75 ml/minute
D) 15-40 ml/minute
32. Tumour marker of ovarian cancer is
A) T24
B) CEA
C) CA 19.9
D) CA 125
33. Enzyme that shows marked increase in obstructive liver disease is
A) Alkaline phosphatase
B) Creatine kinase
C) Lactate dehydrogenase
D) Alanine amino transferase

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34. Non-enzymatic addition of any sugar to protein is called
A) Glycosylation
B) Glycogenation
C) Glycation
D) Glycolysis
35. Test to assess excretory function of liver is related to
A) Cardiac Green Test
B) PSP Test
C) SGOT Estimation
D) Serum Bilirubin
36. Dry chemistry system, the reaction is measured by
A) Flow cytometry
B) Emission spectroscopy
C) Reflectance spectrophotometry
D) Nephelometry
37. Leibermann-Burchard reaction is related to
A) Sugar
B) Albumin
C) Creatinine
D) Cholesterol
38. Conn's syndrome is
A) Hyper aldosteronism
B) Hyper thyroidism
C) Hypo thyroidism
D) Hypo pituitarism
39. Chinese letter pattern is a characteristic feature of
A) Vibrios
B) Corynebacteria
C) Spirilla
D) Streptococci
40. Holding period of hot air oven is
A) 120°C for 15 minutes
B) 72°C for 15-20 seconds
C) 160°C for 1 hour
D) 160°C for 15 minutes
41. An example of indicator culture medium is
A) Stuart's medium
B) McLeod's medium
C) RCM
D) VR medium

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42. Reagent for oxidase reaction of bacteria is
A) P-dimethyl amino benzaldehyde
B) Nessler's reagent
C) α -naphthol in ethanol
D) Tetra methyl p-phenylene diamine hydrochloride
43. Acid fastness of bacteria is due to the presence of
A) Mycolic acid
B) Flagellin
C) Carboxylic acid
D) Slime layer
44. The parasite of benign tertian malaria is
A) *P. ovale*
B) *P. vivax*
C) *P. falciparum*
D) *P. malariae*
45. In *P. malariae* infection, infected RBC shows
A) Jame's dots
B) Maurer's dots
C) Ziemann's dots
D) Schuffner's dots
46. An example of clearing agent used for tissue processing in histopathology laboratory is
A) Cedar wood oil
B) Ethanol
C) Paraffin wax
D) Isopropyl alcohol
47. Cold acetone is an example of
A) Nuclear fixative
B) Vapour fixative
C) Histochemical fixative
D) Cytoplasmic fixative
48. _____ is used as preservative in Mayer's haematoxylin stain.
A) Sodium azide
B) Sodium iodate
C) Glycerol
D) Chloral hydrate
49. Stain used for hormonal evaluation in cytology is
A) Cresyl violet
B) Shorr's stain
C) Acetic orcein
D) H and E stain

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50. Routinely used cytological fixative is
- Carbowax
 - Carnoy's fixative
 - 10% formalin
 - 95% ethanol-ether mixture
51. If the percentage error in radius is 1% and the percentage error in length is 3%, what is the percentage error in calculating the volume of a cylinder ?
- 4%
 - 2%
 - 3%
 - 5%
52. A particle moves with velocity 3 m/s towards East for a time t and with a velocity 2 m/s for a time $2t$ along North. Find the average velocity.
- $\frac{4}{3}$ m/s
 - $\frac{5}{3}$ m/s
 - $\frac{5}{2}$ m/s
 - 5 m/s
53. Find the torque of a force $2\hat{i} + 2\hat{j} + 5\hat{k}$ about the origin. The force acts on the particle whose position vector is $\hat{i} - \hat{j} + 2\hat{k}$.
- $-9\hat{i} - \hat{j} + 4\hat{k}$
 - $4\hat{i} + \hat{j} - 3\hat{k}$
 - $9\hat{i} + \hat{j} - 4\hat{k}$
 - $-2\hat{i} + 4\hat{j} + 5\hat{k}$
54. A body weighs 50 N on the surface of the earth. What is the gravitational force on it due to the earth at a height equal to half the radius of the earth ?
- 25 N
 - 50 N
 - 10 N
 - 0
55. Which of the following is correct for an adiabatic process ?
- No heat exchange between system and surrounding.
 - No temperature change.
 - Slow process.
 - Fast process.
- (i) and (iv)
 - (i) and (iii)
 - (ii) and (iii)
 - (i)
56. At what distance from the mean position, is the kinetic energy in a simple harmonic oscillator equal to potential energy ?
- $\frac{a}{\sqrt{2}}$
 - $\sqrt{2} a$
 - $\frac{a}{2}$
 - a

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57. What is the force needed to lift a car, if a force of 50 N is applied to the smaller piston of radius 5 cm ? The radius of the larger piston is 15 cm.
- A) 520 N B) 450 N C) 750 N D) 400 N
58. The resistance of the carbon resistor with colour code red, yellow, red, gold is
- A) Range from 2120 Ω to 2600 Ω
B) Range from 2280 Ω to 2520 Ω
C) Range from 2283 Ω to 2550 Ω
D) Range from 2191 Ω to 2590 Ω
59. The capacitance of a parallel plate capacitor is 10 μF . What happens to the capacitance, if the distance between the plates is reduced by half and the medium between the plates is filled with a medium of dielectric constant, 6 ?
- A) 20 μF B) 60 μF
C) 120 μF D) 10 μF
60. The uses of microwaves are
- A) used in radar systems
B) used in electrical heaters
C) used in medical imaging
D) used in fibre optic communication
61. Find the value of the shunt resistance, if a galvanometer is converted to ammeter. The galvanometer resistance is 10 Ω and it requires 5% of the main current as the current for full-scale deflection.
- A) $\frac{10}{19}\Omega$ B) $\frac{10}{11}\Omega$ C) $\frac{10}{20}\Omega$ D) $\frac{10}{13}\Omega$
62. The value of Bohr radius is
- A) 6.29×10^{-11} m B) 5.29×10^{-11} m
C) 5.29×10^{-10} m D) 6.12×10^{-11} m
63. The half-life period of a radioactive substance is 30 days. What is the time for $\frac{3}{4}$ of the original mass to disintegrate ?
- A) 90 days B) 60 days C) 45 days D) 50 days

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64. Two lenses of powers +6D and -2D are combined. The focal length of the combination is
A) .12 m B) .25 m C) .15 m D) .5 m
65. If the input frequency is 50 Hz, what is the output frequency in a full-wave rectifier ?
A) 50 Hz B) 75 Hz C) 100 Hz D) 25 Hz
66. Which of the following contains the greatest number of molecules ?
A) 1g O₂ B) 1g H₂O C) 1g H₂ D) 1g NH₃
67. The total number of orbitals in an energy level designated by principal quantum number n is equal to
A) n - 1 B) n² C) 2n² D) 2n
68. Which of the following has lowest pH ?
A) 1M HCl B) 0.1M HCl
C) 0.01M HCl D) 0.001M HCl
69. Which of the following is a secondary cell ?
A) Dry cell B) Nickel-Cadmium cell
C) Mercury cell D) None of these
70. Smoke is an example of
A) Foam B) Sol C) Gel D) Aerosol
71. Which among the following element has largest atomic radius ?
A) Na B) Mg C) K D) Al
72. An antiseptic sold in the market as perhydrol
A) SO₂ B) Dettol
C) Phenol D) Hydrogen peroxide
73. Which ion is required for the coagulation of blood ?
A) Copper B) Calcium
C) Magnesium D) Zinc

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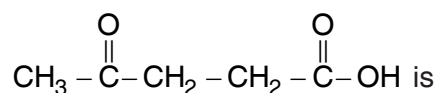
74. Name the gas formed when concentrated Nitric acid is added to copper.

- A) NO_2 B) N_2O C) H_2 D) N_2

75. Which of the following alloys contain Copper, Tin and Zinc ?

- A) Brass B) Bronze C) Gun metal D) German silver

76. The IUPAC name for



- A) 4-Oxopentanoic acid B) 1, 4-Dioxopentanol
C) 1-Hydroxypentane 1, 4-dione D) 1-Hydroxypentane 1, 5-dione

77. Which of the following gives silver mirror with Tollen's reagent ?

- A) $\text{CH}_3 - \text{CH}_2 - \text{OH}$
B) $\text{CH}_3 - \text{CHO}$
C) $\text{CH}_3 - \text{CH}_2 - \text{CO} - \text{CH}_2 - \text{CH}_3$
D) $\text{CH}_3 - \text{COOH}$

78. Which of the following vitamin deficiency causes convulsion ?

- A) Vitamin B_1 B) Vitamin B_2
C) Vitamin B_6 D) Vitamin B_{12}

79. Arsenic containing medicine used for the treatment of syphilis is

- A) Streptomycin B) Novalgin
C) Chloroquine D) Salvarsan

80. Terylene is a condensation polymer of ethylene glycol and

- A) Phthalic acid B) Terephthalic acid
C) Adipic acid D) Benzoic acid

81. From the following plants, which one is a Dioecious plant ?

- A) Coconut B) Cucurbita
C) Date Palm D) Hibiscus

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82. Seeds of certain flowering plants contain perisperm. What is perisperm ?
A) Persistent Endosperm B) Persistent Nucellus
C) Cotyledon D) Unused Endosperm
83. Ability of a plant cell to generate as a whole plant is known as
A) Totipotency B) Pleuripotency
C) Biopotency D) Innate Potency
84. From the following find out a selectable marker.
A) Eco R₁ B) ori C) rop D) amp
85. The process of Elution during electrophoresis is
A) Loading DNA
B) Restriction digestion
C) Staining
D) Separated DNA fragments are cut out from agarose gel and extracted from gel piece
86. A single stranded DNA or RNA which is tagged with a radioactive molecule used in molecular diagnosis is known as
A) Probe B) Primer C) cDNA D) RNAi
87. Name the Ecological Interaction between orchid and mango tree.
A) Amensalism B) Mutualism C) Commensalism D) Parasitism
88. Name the ecological pyramid which is always upright.
A) Number pyramid B) Biomass pyramid
C) Both A) and B) D) Energy pyramid
89. Function of the nucleolus is
A) Controlling cell activities
B) Biosynthesis of ribosome subunits
C) Motility of cell
D) Formation of basal bodies

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90. Terminalisation of Chiasmata occur at which stage of Prophase I ?
- A) Diplotene
B) Diakinesis
C) Leptotene
D) Zygotene
91. The transmission of HIV infection in human being generally not occurs
- A) By sharing infected injection needles
B) From infected mother to her child
C) By drinking water using the same glass
D) By sexual contact with infected person
92. Pseudocoelom is found only in animals belonging to the phylum
- A) Cnidaria
B) Aschelminthes
C) Mollusca
D) Echinodermata
93. Which factor is not favourable for the formation of oxyhaemoglobin in human being ?
- A) high PO_2
B) low PCO_2
C) high temperature
D) low H ion concentration
94. Name the cells which synthesize and secrete testicular hormones called androgens.
- A) Leydig cells
B) Sertoli cells
C) Male germ cells
D) Spermatids
95. 'Carbohydrates are not digested in the stomach of human being.' The reason for this is
- (i) Pepsin can digest only small amount of carbohydrates.
(ii) There are no carbohydrates in gastric juice.
(iii) Salivary amylase becomes denatured by the HCl in stomach.
- A) statement (i) is correct
B) all statements are correct
C) all statements are wrong
D) statements (ii) and (iii) are correct

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96. The QRS complex in an ECG of a man represents
- A) Ventricular depolarisation
 - B) Atrial depolarisation
 - C) Ventricular repolarisation
 - D) Atrial repolarisation
97. Name the chromosomal disorder in which the affected individual expresses Gynaecomastia.
- A) Down's Syndrome
 - B) Klinefelter's Syndrome
 - C) Turner's Syndrome
 - D) Acquired Immuno Deficiency Syndrome
98. In a transcription unit of DNA, the strand which acts as a template for RNA synthesis is known as
- A) Coding strand
 - B) Intron
 - C) Exon
 - D) Template strand
99. An increase blood flow to atria of human heart stimulates the release of Atrial Natriuretic Factor (ANF) will leads to
- (i) Vaso dialation
 - (ii) Increase GFR
 - (iii) Increase urine formation
 - (iv) Decrease blood pressure.
- A) Statement (ii) is correct
 - B) Statements (ii) and (iii) are correct
 - C) Statement (i) is correct
 - D) Statements (i) and (iv) are correct
100. One of the following organism is not included in the phylum Mollusca.
- A) Chaetopleura
 - B) Aplysia
 - C) Ophiura
 - D) Loligo
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Space for Rough Work



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