

# SET – C

ROLL NO.

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*Yay*

Signature of Invigilator

Time : 1 HOUR 45 MINUTES

Total Marks : 100

## Instructions to Candidates

1. Do not write your name or put any other mark of identification anywhere in the OMR Response Sheet. **IF ANY MARK OF IDENTIFICATIONS IS DISCOVERED ANYWHERE IN OMR RESPONSE SHEET, the OMR sheet will be cancelled, and will not be evaluated.**
2. This Question Booklet contains the cover page and a total of **100 Multiple Choice Questions of 1 mark each**
3. Space for rough work has been provided at the beginning and end. Available space on each page may also be used for rough work.
4. There is negative marking in Multiple Choice Questions. For each wrong answer, 0.25 marks will be deducted.
5. **USE/POSSESSION OF ELECTRONIC GADGETS LIKE MOBILE PHONE, iPhone, iPad, page ETC. is strictly PROHIBITED.**
6. Candidate should check the serial order of questions at the beginning of the test. If any question is found missing in the serial order, it should be immediately brought to the notice of the Invigilator. No pages should be torn out from this question booklet.
7. Answers must be marked in the OMR response sheet which is provided separately. OMR Response sheet must be handed over to the invigilator before you leave the seat.
8. The OMR response sheet should not be folded or wrinkled. The folded or wrinkled OMR/Response Sheet will not be evaluated.
9. Write your Roll Number in the appropriate space (above) and on the OMR Response Sheet. Any other details, if asked for, should be written only in the space provided.
10. There are four options to each question marked A, B, C and D. Select one of the most appropriate options and fill up the corresponding oval/circle in the OMR Response Sheet provided to you. The correct procedure for filling up the OMR Response Sheet is mentioned below.
11. Use Black or Blue Ball Pen only for filling the ovals/circles in OMR Response Sheet. Darken the selected oval/circle completely. If the correct answer is 'B', the corresponding oval/circle should be completely filled and darkened as shown below.

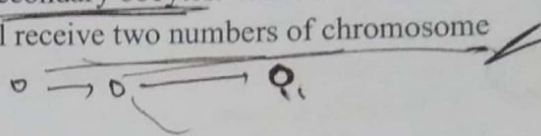
CORRECT METHOD			
(A)	●	(C)	(D)

WRONG METHOD					
(A) (X) (C) (D)	(A) (✓) (C) (D)	(A) (●) (C) (D)	(A) (●) (C) (D)	(A) (B) (C) (D)	(A) (●) (C) (●)



## SET - C

1. Which of the following would yield only one type of monomer after complete hydrolysis?
  - A. Glycogen
  - B. DNA
  - C. Lipoprotein
  - D. Triacylglycerol
2. A child with Edward's syndrome (18 trisomy) having his mother where non-disjunction of chromosome 18 occurred in the division of the secondary oocytes. What is the chance that a mature egg arising from this cell division will receive two numbers of chromosome 18?
 



  - A.  $\frac{1}{4}$
  - B.  $\frac{1}{2}$
  - C.  $\frac{1}{8}$
  - D.  $\frac{3}{4}$
3. A double stranded DNA will be more stable in
  - A. Pure water
  - B. 0.05 M NaCl
  - C. 1.0 M Urea
  - D. 20% Formamide
4. Which of the following groups of antibodies can cross placenta?
  - A. IgM
  - B. IgG
  - C. IgD
  - D. IgA
5. The concentration of a bovine serum albumin solution determined using a UV spectrophotometer and the knowledge of its extinction coefficient was found to be 1.4 mg/mL. Given that the molecular weight of the protein is 70 kDa, its concentration in molar units will be?
 

Handwritten calculations:

$$70 \times 10^3 \times 110 \cdot$$

$$1.4 \times 70$$

$$98.0$$

$$A = \epsilon c l$$

  - A. 20  $\mu$ M
  - B. 50  $\mu$ M
  - C. 20 mM
  - D. 50 mM
6. Bacteria depends on permeability barrier of
  - A. Cell wall
  - B. Peptidoglycan
  - C. Cell membrane
  - D. Exopolysaccharide
7. Phase contrast microscopy is preferred over Bright field microscopy to study
  - A. Plant cells
  - B. Viruses
  - C. Colorless samples
  - D. Stained samples

8. An example innate immunity is :

- A. T lymphocyte
- B. B lymphocyte
- C. Thyroid cell
- D. Neutrophil

9. Genetically engineered bacteria are being used in the commercial production of:

- A. thyroxin
- B. Testosterone
- C. Melatonin
- D. Insulin

10. Which ecological pyramid of the following is always upright and cannot be inverted?

- A. Pyramid of food
- B. Pyramid of number
- C. Pyramid of biomass
- D. Pyramid of energy

11. A die is thrown twice. The probability that sum of the points obtained is 10, is:

- A.  $4/36$
- B.  $3/36$
- C.  $7/36$
- D.  $11/36$

$$\begin{array}{r} 1 \\ 2 \\ 3 \\ 4 + 6 = 10 \\ 5 + 5 = 10 \\ 6 + 4 = 10 \end{array}$$

12. A kind of covalent modification, which occurs on both Histones and DNA is

- A. Methylation
- B. Acetylation
- C. Succinylation
- D. Phosphorylation

13. Which of the following biomolecule contains non-transition metal ion?

- A. Chlorophyll - Mg
- B. Haemoglobin
- C. Vitamin
- D. Haemocyanin

14. Enzymes, which catalyze removal of groups from substrates without removal or addition of water are classified as:

- A. Hydrolases X
- B. Lyases
- C. Transferases
- D. Oxidoreductases

15. The effect of auxin diffusing from the apical bud on the lateral shoots is known as:

- A. Promoting Effect
- B. Compensatory effect
- C. Inhibitory effect
- D. Supporting Effect



16. When several genes are transcribed as one mRNA, the mRNA is said to be :

- A. Multimeric
- B. Polymeric
- C. Polycistronic
- D. Polyclonal

17. A colour blind man and a phenotypically normal women have four children (each has 46 chromosomes)-a boy with haemophilia but no other traits ; a boy with colour blindness but no other traits; a colour blind girl but no other traits; and a phenotypically normal girl (all traits mentioned are inherited as X-linked recessive). What is the probability that the mother is heterozygous for colour blindness?

- A. 1/4
- B. 1/2
- C. 1
- D. 3/4

$X^h Y$	$X^c Y$
$X^H X^c$	$X^H X$

$X^h Y$	$X X$	$X^c$	$X$
$X^H X$	$X^c Y$	$X^c X^c$	$X^c X$
$Y$	$X^H X$	$X^c Y$	$X Y$

18. Hormone controlling contraction of uterus during parturition is :

- A. Luteinizing Hormones
- B. Estrogen
- C. Oxytocin
- D. Progesterone

19. An antimicrobial agent that can be used as an antifungal drug because of its ability to bind to sterols in the membrane and change membrane fluidity is :

- A. Amphotericin B
- B. Chloramphenicol
- C. Streptomycin
- D. Rifampicin

20. With regard to p53 tumor suppressor gene, which of the following statement is FALSE?

- A. It is located on chromosome 17
- B. It encodes 53 kDa protein
- C. It holds the cell cycle in the G1 phase
- D. None

21. The sequence of an oligonucleotide, reading from the bottom to the top of a sequencing-gel, is TGCAAT, the sequence of the template from which it is synthesized is :

- A. (5')TGCAAT(3')
- B. (3')TGCAAT(5')
- C. (3')ACGTTA(5')
- D. (5')ACGTTA(3')

A	A
T	T
C	C
G	G

22. In angiosperms triple fusion produces:

- A. Polar nucleus
- B. Secondary nucleus
- C. Primary endospermic nucleus
- D. Zygotic nucleus.

23. The protection against small pox virus infection afforded by prior infection with cow pox virus represents :

- A. Antigenic specificity
- B. Antigenic cross-reactivity
- C. Enhanced viral uptake by macrophages
- D. Innate immunity

24. An antibiotic actinomycin D blocks:

- A. Transcription in eukaryotes.
- B. Transcription in both eukaryotes and prokaryotes
- C. Polypeptide chain elongation —
- D. Polypeptide chain initiation. —

25. Which of the following would cause a decrease in the binding affinity of haemoglobin for oxygen?

- A. Increased pH of the blood —
- B. Increased temperature of the blood —
- C. Decreased DPG levels in erythrocytes —
- D. Both A and B X

26. If for the biochemical reaction  $A \rightarrow B$ ,  $\Delta H < 0$  and  $\Delta S > 0$ , then

- A. The reaction is spontaneous
- B. The reaction is endothermic X
- C.  $\Delta G = 0$  X
- D. The disorder in the system will decrease if the reaction proceeds.

$$\Delta G = \Delta H - T\Delta S$$

(-)

27. Which of the following type of DNA is the most conserved amongst the organisms?

- A. Mitochondrial DNA
- B. Chloroplast DNA
- C. rDNA
- D. DNA that codes for tRNA

28. Measurement of which of the following kinetic parameters requires that absolute concentration of the enzyme is known?

- A.  $V_{max}$
- B.  $K_{cat}$
- C.  $K_m$
- D. All of the above

$$\frac{V_0}{V_{max}} = \frac{[S]}{K_m + [S]}$$

29. In Scanning Electron Microscopy (SEM), to form an image of specimen

- A. Electron should pass through the specimen
- B. Electrons are scattered from the surface of the specimen
- C. A thin film of heavy metal is evaporated
- D. Specimens are stained X

30. Moll's leaf experiment demonstrated that

- A.  $CO_2$  is essential for photosynthesis
- B. Chlorophyll and water are necessary for photosynthesis
- C. Light and water are essential for photosynthesis
- D. All of the above



0.1  $\xrightarrow{10 \text{ ml sol}} \xrightarrow{100} \xrightarrow{100}$

31. 0.1 mL of a bacterial culture is diluted into 9.9 mL buffer; 0.1 mL of this dilution is again diluted in 9.9 mL of fresh buffer. Plating 0.1 mL from the second dilution tube yields 72 colonies on a petri plate. What is the cell density of the original culture?

- A.  $7.2 \times 10^6$  cells per mL
- B.  $7.2 \times 10^5$  cells per mL
- C.  $7.2 \times 10^8$  cells per mL
- D.  $7.2 \times 10^7$  cells per mL

32. Two proteins of similar molecular weights (within 100 Dalton) and the same net charge in solution but differing in their amino acid composition can best be separated by

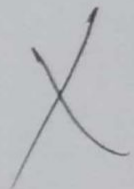
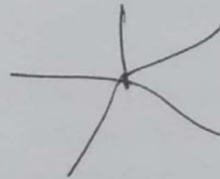
- A. Cation exchange chromatography ~~X~~
- B. Anion exchange chromatography ~~X~~
- C. Reverse phase chromatography
- D. Gel filtration chromatography

33. When life originated, the atmosphere of earth was

- A. Oxidizing type
- B. Reducing type
- C. Mixed type
- D. There was no atmosphere

34. Given 5 atoms connected by single bonds, for example A-B-C-D-E. How many torsion angles are there?

- A. One
- B. Two
- C. Three
- D. Zero



35. *Cycas* differs from *Pteris* in having:

- A. Vessels and Tracheids
- B. Motile Sperms
- C. Pollen Tube
- D. Archegonia

36. Edible part in Black pepper Fruit is

- A. Cotyledon
- B. Embryo
- C. Aril
- D. Perisperm

37. Among the following the earliest stage of amphibian embryonic development is

- A. Neurula
- B. Blastula
- C. Gastrula
- D. Tadpole

38. Pest resistant to insecticides

- A. Enzymes for metabolizing toxins
- B. Ability to store toxins in fat
- C. Less permeable cuticle
- D. All of these

39. Which of the following statements is false about lac operon?

- A. It was discovered by Jacob and Monod
- B. It has three structural genes
- C. CAP:CAP exerts a negative regulatory effect on lac operon
- D. Repressor bound to operator site does not allow expression of lac operon

40. Remarkable fall in Blood pressure effects the normal function of kidney reducing

- A. Secretion of nitrogenous wastes
- B. Renal filtration
- C. Reabsorption of useful substances
- D. Glomerular filtration

41. Square root of x is in the inverse variation of the cube of y. If  $x=16$  when  $y=2$ , then what is y when  $x=1/4$ ?

- A. 4
- B.  $1/4$
- C. 2
- D.  $1/2$

$$\sqrt{x}$$

$$x=16$$

$$\frac{1}{4}$$

$$\frac{1}{y^3}$$

$$4 = \frac{1}{y^3}$$

42. Which of the following diseases is transmitted by a protein?

- A. Creutzfeldt-Jakob disease
- B. Alzheimer's disease
- C. Lymphocytic choriomeningitis
- D. Encephalitis
- A. None of these


43. Pentose phosphate pathway is essential for the formation of

- A. NADH and amino acids
- B. ATP, NADH and amino acids
- C. NADPH, amino acids and nucleotides
- D. ATP, NADPH, amino acids and nucleotides

44. The antigen used for tuberculin test (for tuberculosis) is

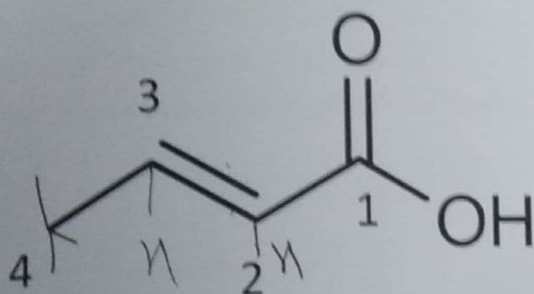
- A. Toxin secreted by mycobacteria
- B. Lipopolysaccharide
- C. Purified Protein derivative (PPD) from mycobacteria
- D. None of these

45. Which of the following species behave as nucleophile as well as electrophile

- A.  $\text{CH}_3\text{OH}$
- B. 
- C.  $\text{H}_2\text{C}=\text{O}$
- D.  $\text{H}_2\text{O}$



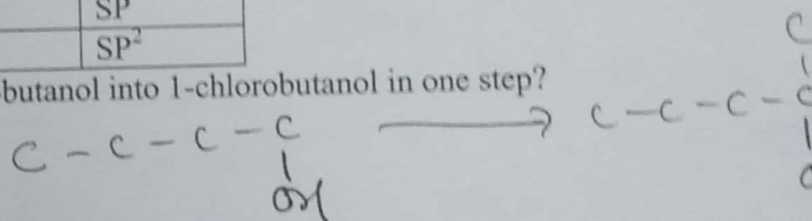
46. Identify the hybridization of carbon atoms in this molecule



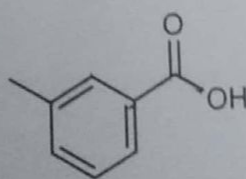
	1	2	3	4
A.	SP <sup>2</sup> ✓	SP <sup>2</sup> ✓	SP <sup>2</sup> ✓	SP <sup>3</sup> ✓
B.	SP <sup>2</sup> ✓	SP <sup>2</sup> ✓	SP <sup>2</sup> ✓	SP
C.	SP <sup>3</sup>	SP	SP <sup>2</sup>	SP
D.	SP	SP <sup>2</sup>	SP	SP <sup>2</sup>

47. Which of following will NOT convert 1-butanol into 1-chlorobutanol in one step?

- A. SOCl<sub>2</sub>
- B. PCl<sub>3</sub>
- C. HCl
- D. CCl<sub>4</sub>



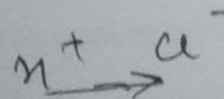
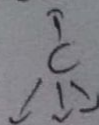
48. What is the correct name of following compound?



- A. M-methylbenzoate
- B. 3-methyl benzoic acid
- C. Methyl benzoate 13
- D. Tolyicarboxylate

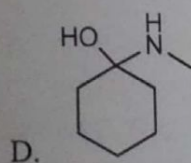
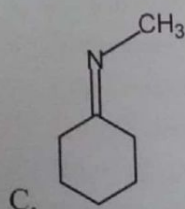
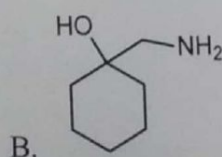
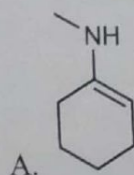
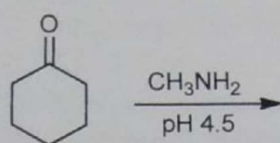
49. Which molecule has the largest dipole moment?

- A. HCl
- B. CCl<sub>4</sub>
- C. H<sub>2</sub>S
- D. CO<sub>2</sub>

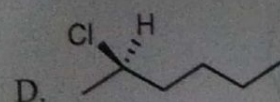
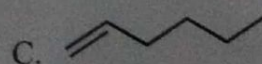
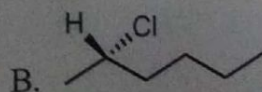
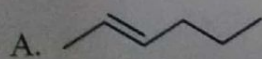
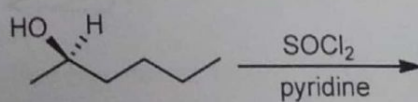




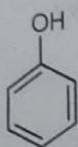
50. What is the product of the following reaction?



51. Give the major product of the following reaction.



52. The Williamson ether synthesis produces ether by reacting an
- Alcohol with a metal
  - Alkoxide with a metal
  - Alkoxide with an alkyl halide.
  - Alkyl halide with an aldehyde.
53. Predict the major product of the following reaction.

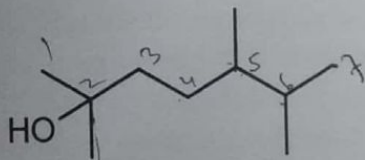


- m-chlorophenol
- o-chlorophenol and p-chlorophenol
- o-hydroxytoluene and p-hydroxytoluene
- m-hydroxytoluene

54. Which of the following compounds does NOT give a tertiary alcohol upon reaction with methylmagnesium bromide?

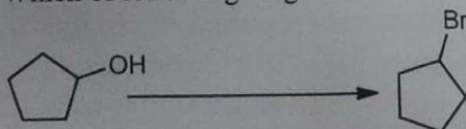
- 3-methylpentanal
- Ethyl benzoate
- 4,4-dimethyl cyclohexanone
- 4-heptanone

55. What is the correct IUPAC name of the given compound?



- 4-Isopropyl-1,1-dimethyl-1-pentanol
- 5-Isopropyl-1,1-dimethyl-2-hexanol
- 1,1,4,5-Tetramethyl-1-hexanol
- 2,5,6-Trimethyl-1-heptanol

56. Which of following reagent can be used to convert cyclopentanol to bromocyclopentane?



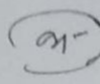
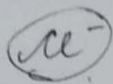
- $\text{NaBr}$
- $\text{PBr}_3$
- $\text{Br}_2, \text{CCl}_4$
- N-bromosuccinimide (NBS),  $h\nu$

ether + Alc.  
↓  
ester



57. When the anions acts like a nucleophile, what type of reaction occur?

- A. Addition
- B. Substitution ✓
- C. Elimination
- D. Cannot be predicted



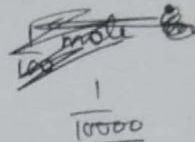
58. If 10 mL of a 1 M solution of Barium hydroxide is diluted into 100 mL, then how many millimoles of the compound would be present in the solution

- A. 0.1
- B. 1
- C. 10
- D. 100

$$M_1 V_1 = M_2 V_2$$
$$10 \text{ mL} \times 1 \text{ M} = M_2 \times 100 \text{ mL}$$
$$M_2 = \frac{10 \times 1}{100} = 0.1 \text{ M}$$

$$1 = \frac{W_B}{M_B} \times \frac{1000}{10}$$

$$\frac{W_B}{M_B} = \frac{1}{100}$$



59. The de Broglie wavelength of a particle of mass  $m$  and velocity  $v$  is

- A.  $h/mv$
- B.  $hmv$
- C.  $mh/v$
- D.  $m/hv$

$$\lambda = \frac{h}{mv}$$

$$\lambda = \frac{h}{mv}$$

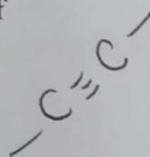
$$\lambda = \frac{h}{mv}$$

60. The reaction of ketones with peroxybenzoic acid will give what type of product according to Baeyer-Villiger oxidation reaction?

- A. Carboxylic acid
- B. Anhydride
- C. Ester
- D. Mixture of alcohols

61. The triple bond of acetylene is made up of

- A. Three  $\sigma$  bonds
- B. One  $\sigma$  bond and two  $\pi$  bonds
- C. Three  $\pi$  bonds
- D. Two  $\sigma$  and one  $\pi$  Bond

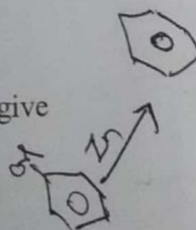


62. Boiling point of water is

- A. 100 °C
- B. 89 °C
- C. 62 °C
- D. Dependent on Pressure

63. Phenols on distillation with Zinc dust give

- A. Aromatic hydrocarbons
- B. Aromatic aldehydes
- C. Alcohols
- D. Primary amines



64. The reptilian ancestors of birds were

- A. Ichthyosaurs
- B. Dinosaurs
- C. Plesiosaurs
- D. Pleiosaurs

65. Under certain conditions serum glutamic pyruvic transaminase (SGPT) level becomes abnormally high in blood. This is
- Due to overproduction of SGPT
  - Due to leakage of glutamic pyruvic transaminase (GPT) into blood following Liver cell damage
  - Due to excess enzymes to deal with amino acid catabolism resulting from Protein breakdown
  - To prevent ammonia build up in blood
66. Currently Bacterial phylogeny is based on
- GC content analysis
  - DNA-DNA hybridization analysis
  - 16S rRNA analysis
  - DNA melting temperature analysis
67. A method for transferring protein to a nitrocellulose filter on which protein can be detected by a suitable probe is
- Northern blotting
  - Southern blotting
  - Western blotting
  - Western blotting
68. All the following processes occur in mitochondria except
- DNA synthesis
  - Protein synthesis
  - Fatty acid biosynthesis
  - Beta oxidation of fatty acids
69. The completion of S phase of cell cycle of a mammalian cell is marked by all of the following except
- Histone content of cells is doubled that of cell in G1
  - In replicated DNA newly incorporated bases are paired with parental bases
  - Each replicated chromosome has 4 telomeres
  - Sister chromatids disjoin from each other.
70. Aggressins are
- Group of chemical compounds resembling hormones
  - Substances that activate the host response system
  - Group of diffusible substances or cellular components produced by certain pathogens
  - Modified agar beads
71. Which of the following is most likely to lead to change in gene function?
- Frameshift mutation in the coding region
  - Change from T to C in the coding region
  - Change in sequence of 3'-UTR
  - Change of TAA to TAG in the coding region
72. Which of the following enzymes is template independent?
- Terminal transferase
  - DNA Polymerase
  - RNA Polymerase
  - Taq DNA Polymerase



73. How many ATP required for the conversion of one  $N_2$  to  $2NH_4^+$  during biological nitrogen fixation ?
- 8 ATP
  - 10 ATP
  - 12 ATP
  - 16 ATP
74. Antiparallel beta-sheet are often found at the surface of a protein, while parallel beta-sheet structures are found in the interior of the proteins. From this information, one can infer that
- Every third or fourth amino acid in an antiparallel beta-sheet is charged
  - Antiparallel beta-sheets are composed of hydrophilic amino acids only
  - Parallel beta-sheets are composed of hydrophilic amino acids
  - Antiparallel beta-sheets are composed of alternating hydrophobic and hydrophilic amino acids
75. Two hospitals X and Y with maternity wards are checked for the percentage of boys and girls born in the last one year and X reports 52% boys and Y reports 58% boys. A simple explanation for the above is
- A large number of children were born in Hospital X
  - A large number of children were born in Hospital Y
  - This is a part of random variation and conclusion cannot be drawn about hospital size
  - The number of children born in both hospitals is exactly equal
76. The derivative of  $\cos^{-1}(\sin x)$  with respect to  $x$  is
- $$\frac{\cos^{-1} \sin x}{dx} = \cos x$$
- 0
  - $\cot x$
  - 1
  - $\sin x \cos x$
77. How do eukaryotic ribosomes identify the start site of proteins:
- Via their Shine-Delgarno sequences
  - By scanning from the 5' end of the mRNA for the first AUG
  - The "cap" structure of a eukaryotic messenger RNA overlaps with the first AUG
  - The transcriptional start of a eukaryotic mRNA overlaps with the translational start
78. Which is the Lipoprotein with the highest ratio of protein:lipid?
- Chylomicrons
  - HDL
  - VLDL
  - LDL
79. Assuming Hardy-Weinberg equilibrium, the genotype frequency of heterozygotes, if the frequency of the two alleles at the gene being studied are 0.6 and 0.4 will be:
- 0.80
  - 0.64
  - 0.48
  - 0.32

80. Which of the following co-enzymes acts as an electron sink to promote catalysis?

- A. Biotin
- B. Pyridoxal phosphates
- C. CoA
- D. Lipoamide

81. Sodium dodecyl sulphate is used in the gel electrophoresis experiments for the separation of a mixture of proteins based on their molecular size. SDS is used in this experiments to

- A. Solubilize the proteins
- B. Stabilize the proteins
- C. Decrease the surface tension of the buffer
- D. Have uniform charge density on the proteins

82. Fatty acids oxidation occurs in the :

- A. Mitochondria
- B. Nucleus
- C. Cytosol
- D. Periplasmic space

83. Polymerization on actin monomers in-vitro to form actin filaments can be induced by addition of

- A. Only  $\text{Na}^+$  ions
- B.  $\text{Cl}^-$  ions
- C.  $\text{K}^+$  ions
- D. Both A and C

84. What is the strongest oxidizing agent in the photosynthetic electron transfer reactions:

- A. P700\*
- B. P700
- C. P680
- D. P680\*

ox -  $e^-$  release.  
ox. ag. khud sed, i.e accepte

85. In the normal human being the concentrations of various antibodies in the serum is /are in the order:

- A.  $\text{IgM} > \text{IgA} > \text{IgG} > \text{IgE}$
- B.  $\text{IgG} > \text{IgA} > \text{IgM} > \text{IgE}$
- C.  $\text{IgE} > \text{IgG} > \text{IgM} > \text{IgA}$
- D.  $\text{IgA} > \text{IgM} > \text{IgE} > \text{IgG}$

86. Which of the following post-translational modification(s) of proteins occur(s) in the lumen of the endoplasmic reticulum:

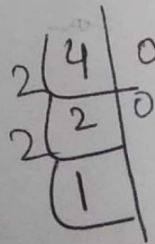
- A. Glycosylation
- B. Formation of disulfide bonds
- C. Conformational folding and formation of quaternary structure
- D. All of the Above

87. Which of the following processes does not occur in the eukaryotic nucleus:

- A. tRNA charging
- B. RNA splicing
- C. RNA polyadenylation
- D. RNA capping



88. In a completely radioactive double stranded DNA molecule undergoes two rounds of replication in a solution free of radioactive label, what is the radioactivity status of the resulting four double-stranded DNA molecule?
- Half should contain radioactivity
  - All should contain radioactivity
  - Half should contain radioactivity in both strands.
  - One should contain radioactivity in both strands.
89. Carbon-di-oxide is transported as :
- Dissolved in blood plasma
  - As bicarbonate
  - Carbamate
  - As carbamate and bicarbonate
90. The bond between a fatty acid and a glycerol moiety in a phospholipid is known as:
- Amide bond
  - Ester bond
  - Hydrogen bond
  - Ionic bond
91. Which of the following substances cannot form hydrogen bond between them
- Water and glucose
  - Water and octanol
  - Water and octane
  - Water and octylglucoside
92. 10 N HCl is diluted 100 fold with water and the pH of the diluted solution was measured by a pH meter after calibration with standard solutions. Given that the activity coefficient for diluted HCl solution was 0.01. What would be the pH of the solution?
- 1
  - 2
  - 3
  - 4
93. The value of  $2+2$  in binary notion is
- 10
  - 100
  - 1000
  - 10000
94. Let  $x + y - z + 4 = 0$  and  $x + y - z + 5 = 0$  be two parallel planes. What is the distance between them?
- $1/\sqrt{3}$
  - $\sqrt{3}$
  - $4/5$
  - $4/\sqrt{5}$



95. If you are trying to test for a possible association between hair color (Black, Brown, Blonde) and eye color (Blue, Black, Green), which of the following statistical test will you use?
- A. t-test
  - B.  $\chi^2$ -test
  - C. F-test
  - D. ANOVA
96. Which of the following techniques is used for quantification of mRNA?
- A. Real time PCR
  - B. Western blotting
  - C. Gradient PCR
  - D. Nested PCR
97. The process of using microbes and plants to break down or recycle environmental pollutants is called
- A. Biodegradation
  - B. Bioremediation
  - C. Amplification
  - D. Annealing
98. An enzyme that relieves torsional strain while double stranded DNA is being unwound is
- A. DNA ligase ~~X~~
  - B. DNA gyrase
  - C. DNA relaxase
  - D. DNA helicase
99. What function might you postulate for a polypeptide having a Zn-finger motif?
- A. Signal transduction
  - B. Transcription factor
  - C. Growth hormone receptor
  - D. Cytoskeletal component
100. What among following is used to produce artificial rain ?
- A. copper oxide
  - B. carbon monoxide
  - C. silver iodide
  - D. silver nitrate