

1. Chromosome having equal arms are known as :

- A. Acrocentric  
B. Metacentric  
C. Telocentric  
D. Concentric

2. Ethidium bromide act as a mutagen by:

- A. Substituting adenine by its structural analogue  
B. Chemical modification of base  
C. Production of inter strand cross links in DNA  
D. Intercalating between adenine -thymine base pairs of DNA bases

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3. A competitive inhibitor :

- A. Binds at active site  
B. Does not bind at active site  
C. Alter  $V_{max}$  only  
D. Binds at allosteric site

4. Which of the following enzyme increases in serum after heart attack:

- A. Creatine kinase  
B. SGPT  
C. Alkaline phosphatase  
D. Amylase

5. In fibrous proteins polypeptide chain are :

- A. Folded  
B. Twisted  
C. Coiled  
D. Extended

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6. Glucose absorption in intestine requires :

- A. A carrier and  $\text{Na}^+$                       B. A carrier and  $\text{K}^+$   
C.  $\text{Na}^+$  only                                      D. Carrier only

7. Most of the amino acids found in human body are:

- A. L-isomer                                      B. D-isomer  
C. D and L-isomer                              D. None of these

8. O-glycosidic bond is formed when :

- A. A sugar reacts with acid  
B. A sugar reacts with alkali  
C. A sugar n anomeric carbon of sugar reacts with an alcohol  
D. A anomeric carbon of sugar reacts with an acid

9. The concentration of IgE class of immunoglobulin increase in blood in:

- A. Allergic reactions                              B. Diabetes  
C. Cancer                                              D. Cold condition

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10. Lymph is modified blood that contains :

- A. RBC and WBC  
B. RBC, WBC and proteins  
C. WBC and all proteins  
D. All content of blood except RBC and certain blood proteins

11. Ubiquitin is a protein required for :

- A. Protein degradation  
B. Fat degradation  
C. Carbohydrate degradation  
D. Protein synthesis

12. Connection between arteries and veins is through :

- A. Venule  
B. Arteriole  
C. Capillaries  
D. None of the above

13. Ribosomes are attached to the surface of endoplasmic reticulum by:

- A. Covalent action  
B. Hydrostatic force  
C. Ionic interaction  
D. Glycoprotein ribophorin

14. Phagocytosis involve production of:

- A. Super oxides  
B.  $H_2O_2$   
C. Super oxides and  $H_2O_2$   
D. None of these

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15. Ciliated epithelium is found in :

- A. Trachea  
B. Urinary bladder  
C. Intestine  
D. Stomach

[5]



In metalloenzymes metals are:

- A. Attached to enzyme through co-ordinate bond
- B. Attached to the enzyme by co-valent bond
- C. Attached to the enzyme by non-co-valent bond
- D. Loosely attached to the enzyme

17.

An example of n-3 fatty acid is

- A. Palmitic acid
- B. Arachidonic acid
- C. Linolenic acid
- D. Linoleic acid

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18.

Polypeptide bond formation occurs :

- A. During starvation
- B. From amino terminus
- C. From carboxy terminus
- D. From amino terminus to carboxy terminus

19.

For an exothermic reaction the increase in temperature will shift the equilibrium towards:

- A. Low volume side
- B. High volume side
- C. Temperature has no effect
- D. Towards product side

20. Which is most acidic:

A. Phenol

C. Cyclohexanol

B. Benzyl alcohol

D. m-chlorophenol

21.

The bond that determines the secondary structure of a protein is:

A. Co-ordinate bond

C. Covalent bond

B. Hydrogen bond

D. Ionic bond

22.

If  $U^{235}$  is bombarded with neutron the atom can split into:

A. Strontium and Lead

C. Cesium and Rubidium

B. Cadmium and Krypton

D. Barium and Krypton

23.

Hydrolytic reaction of fats with caustic soda is known as :

A. Saponification

C. Carboxylation

B. Esterification

D. Acetylation

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24.

Which of the following aqueous solution has highest boiling point:

A. 0.1 M KCl

C. 0.1 M  $AlCl_3$

B. 0.1 M  $BaCl_2$

D. 0.1 M  $Na_2S$

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25. For an ideal gas  $(\delta H / \delta p)_T$  is :

- A. Zero
- B. Greater than zero
- C. Less than zero
- D. Equal to  $C_p$

26. The necessary condition under which a reaction is at equilibrium is:

- A.  $(\Delta G)_{T,P} = 0$
- B.  $(\Delta G)_{T,P} = > 0$
- C.  $(\Delta G)_{T,P} = < 0$
- D.  $(\Delta H)_{T,P} = 0$

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27. Aspirin is:

- A. Phenyl salicylate
- B. Phthalic acid
- C. Salicylic acid
- D. Acetyl salicylic acid

28. The following are positively charged amino acids, except:

- A. Aspartic acid
- B. Arginine
- C. Lysine
- D. Histidine

29. An example of sedimentary type of nutrient cycle is :

- A. Nitrogen cycle
- B. Phosphorus cycle
- C. Carbon cycle
- D. None of the these

30. Lignin is a component of secondary cell wall of :

A. Epidermis

B. Collenchyma

C. Sclerenchyma

D. Parenchyma

31. Phytoplankton are :

A. Producer of forest

B. Producer of lakes

C. Producer of desert

D. Consumer of sea ecosystem

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32. Which will not cause air pollution:

A. Sulphur dioxide

B. Carbon dioxide

C. Carbon mono oxide

D. Nitrogen

33. Minamata disease was first reported from :

A. Japan

B. USA

C. China

D. Canada

34. Blue baby syndrome is caused due to excess of:

A. Nitrogen

B. Copper

C. Iron

D. Phosphorus

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34. Cadmium poisoning cause:

- A. Black foot disease      B. Goiter  
C. Scurvy      D. Itai-Itai

36. A nitrogen fixing cyanobacteria:

- A. Pseudomonas      B. Anabaena  
C. Rhizobium      D. Clostridium

37. A good example of auxin herbicide is :

- A. 2,4-D      B. NAA  
C. IAA      D. IBA

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38. The energy that can reduce global warming is :

- A. Coal      B. Petroleum  
C. Geothermal      D. None of these

39. The cells that help in rolling of leaves in grasses are called:

- A. Bulliform cells      B. Trichoblast  
C. Guard cells      D. Mucilaginous cells



40. Phylloclade is found in:

- A. Asparagus
- C. Nerium

- B. Opuntia
- D. Bryophyllum

41. Albedo is most prominent in:

- A. Bombay
- C. Delhi

- B. Jaipur
- D. Ladakh

42. The only floating national park of the world, located in India is:

- A. Corbett
- C. Kaziranga

- B. Keibul Lamjao
- D. Keoladeo

43. Major component of biogas is:

- A. Butane
- C. Ethane

- B. Propane
- D. Methane

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44. During exposure of light, photooxidation of chlorophyll take place in absence of:

- A. Chlorophyll-A
- C. Phycobilin

- B. Chlorophyll-B
- D. Carotenoids

45. Compensation point is:

- A. When, rate of photosynthesis is equal to the rate of respiration
- B. When, there is neither photosynthesis nor respiration
- C. When entire food synthesized during photosynthesis remains unutilized
- D. When, there is enough water just to meet the plant requirement

46. Pigment responsible for photo morphogenetic response is:

- A. Xanthophyll
- B. Chlorophyll
- C. Cytochrome
- D. Phytochrome

47. Photolysis of water in plants is associated with:

- A. PS-I
- B. PS-II
- C. Cyt b
- D. Quinone

48. A completely haploid plant can be obtained from:

- A. Root tip
- B. Apical meristem
- C. Carpel
- D. Anther

49. Oblique septum is found in:

- A. *Althea rosea*
- B. *Glorioso superba*
- C. *Capsicum frutescence*
- D. *Dalbergia sissoo*

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50. To which family are present inferior ovary and syngenesious stamen:

- A. Poaceae
- B. Liliaceae
- C. Asteraceae
- D. Fabaceae

51. Monadelphous stamens are found in :

- A. Umbellifereae
- B. Malvaceae
- C. Fabaceae
- D. Solonaceae

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52. All algae have:

- A. Chlorophyll-A and chlorophyll- B
- B. Chlorophyll- B and carotene
- C. Chlorophyll -A and carotene
- D. Phycobilin and carotene

53. The vegetative reproduction by means of gemma is found in

- A. Selaginella
- B. Riccia
- C. Marsilea
- D. Marchantia

54. In what form the food is stored in the mycelium of *Cystopus*:

- A. Sugar and oil
- B. Starch and protein
- C. Glycogen and oil
- D. Protein and steroids

55. Fruiting body in *Aspergillus*:

- A. Apothecium
- B. Perithecium
- C. Hypothecium
- D. Cleistothecium

56. In which of the following plant water is not necessary for fertilization :

- A. Vallisneria
- B. *Pisum sativum*
- C. *Funaria hygrometrica*
- D. Selaginella

57. The C<sub>4</sub> plants are different from C<sub>3</sub> plants with reference to

- A. Types of pigments involved in photosynthesis
- B. The substances that accept CO<sub>2</sub> in carbon assimilation
- C. Types of end products of photosynthesis
- D. None of these

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58. In *Cycas* pollination is exclusively by:

- A. Water
- B. Animal
- C. Wind
- D. Insect

Pollen grain get germinated by:

- A. Germ pore
- B. Chalaza
- C. Integument
- D. Micropyle

60. The innermost layer of anther is tapetum whose function is :

- A. Dehiscence
- B. Mechanical support
- C. Protection
- D. Nutritional

61. Hair found in the inflorescence of *Zea mays* are modification of:

- A. Style
- B. Stigma
- C. Spathe
- D. Filaments

62. Botulism is:

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- A. Human skin disease
- B. Type of food poisoning caused by bacteria
- C. A plant disease caused by parasitic bacteria
- D. A type of toxin produced by milk bacteria

63. Coliforms are used as indicator organism of sewage pollution because:

- A. They are pathogens
- B. They ferment lactose
- C. They are abundant in human intestine
- D. They grow in 48 hours



64. Cyanobacteria differ from purple & green phototropic bacteria because cyanobacteria :

- A. Produce  $O_2$  during photosynthesis
- B. Do not require light
- C. Use  $H_2S$  as an electron acceptor
- D. Have a membrane enclosed nucleus



65. Which of the following is most likely to be bactericidal ?

- A. Membrane filtration
- B. Ionizing radiation
- C. Centrifugation
- D. Deep freezing

66. The isolation of individual organelle from cell homogenate can be achieved by:

- A. X-ray diffraction
- B. Chromatography
- C. Employment of different solvents
- D. Differential centrifugation

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67. Book lungs are respiratory organ in:

- A. Mollusca
- B. Mammals
- C. Nematodes
- D. Arachnida

Which one of these is not an auto immune disease?

- A. Hemophilia
- B. Rheumatoid arthritis
- C. Myasthenia gravis
- D. Neuropathy

69. A person who is on a long hunger strike and is surviving only on water will have:

- A. Less amino acids in his urine
- B. Less urea in his urine
- C. More glucose in his blood
- D. More sodium in his urine

70. In albinism the absence of which pigment makes skin and hair very light colored:

- A. Carotene
- B. Hemoglobin
- C. Chlorophyll
- D. Melanin

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71. Which of the following is not an antibody?

- A. Ig A
- B. Ig B
- C. Ig G
- D. Ig M

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72. Carrier of blood rich in glucose & amino acids from intestine to liver is?

- A. Dorsal aorta
- B. Renal portal vein
- C. Hepatic portal vein
- D. Mesenteric artery

73. Birds and mammals share one of the following characteristics as common feature:

A. Pigmented skin

~~B. Pneumatic bones~~

C. Warm blooded

D. Viviparity

74. The long neck of a camel is due to

A. Bony plate between two vertebrae

B. Muscle between two vertebrae

C. Increase in length of cervical vertebra

D. None of these

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75. Histamine is secreted by

A. Mast cells

B. Kuffer cells

C. Macrophages

D. Nissl granules

76. Which is responsible for ejection of milk from mammary gland in mammals? :

A. Oxytocin

~~B. Prolactin~~

C. Serotonin

D. Melatonin

77. Which of the following has been basic to origin of life? :

A. Carbohydrate

B. Proteins

C. Nucleic acid

D. Nucleoprotein

78. Which gas was not present in pre-biotic environment?

A.  $\text{CH}_4$

B.  $\text{O}_2$

C.  $\text{CO}_2$

D.  $\text{SO}_2$

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79. Diastole is :

A. Increase of heart muscles

B. Relaxation of heart muscles

C. Contraction of heart muscles

D. None of these

80. Which of the following gland is often referred in relation with AIDS? :

A. Thyroid

B. Thymus

C. Adrenal

D. Pancreas

81. Characters of Klinefelter's syndrome is :

A. XO

B. XX

C. XY

D. XXY

82

Vitamin D is synthesized in skin by action of sunlight on :

- A. Cholesterol  
 B. Cephalo cholesterol  
 C. Ortho phenoxy cholesterol  
 D. 7-hydroxy cholesterol

83

"Hinny" is an offspring of :

- A. Male donkey and mare  
 B. Lion and Tiger  
 C. Tiger and Lioness  
 D. Stallion and female donkey

84

Genetic drift operates only in :

- A. Island population  
 B. Smaller population  
 C. Larger population  
 D. Mendelian population

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85

Spindle fibers of mitotic cells are made up of :

- A. Actin  
 B. Myosin  
 C. Collagen  
 D. Tubulin

86

Thiamine dimmers are produced due to DNA damage caused by:

- A. UV light  
 B. X-rays  
 C. Oxidizing agent  
 D. Alkylating agent



87. Organism phenotypically similar but genotypically different are called:

- A. Multizygous
- B. Homozygous
- C. Homozygous
- D. Heterozygous

88. Noble prize for jumping genes was awarded to :

- A. Kornberg
- B. McClintock
- C. Khorana
- D. Watson

89. Which of the following is not a method for horizontal gene transfer?

- A. Binary fission
- B. Transduction
- C. Conjugation
- D. Transformation

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90. Degenerate codon is when:

- A. The codon degenerates soon after synthesis of protein
- B. The codon that code for more than one amino acid
- C. The same amino acid can be coded by more than one codon
- D. A codon is non-functional and is also known as nonsense codon

91. Gene amplification is:

- A. Production of new genes within genome
- B. Transfer of other genes to a genome
- C. Modification of a gene for desirable purpose
- D. Production of multiple copies of a gene within a single genome

92. The term C-DNA library means:
- A. Pool of C-DNA generated from specific tissue inserted in an appropriate vector
  - B. Compilation of C-DNA sequence in data base
  - C. Collection of C-DNA clones by an individual researcher
  - D. It is a manual for C-DNA research
93. Molecular chaperons are a group of proteins that are used in biotechnology for
- A. Modifying the biochemical reaction
  - B. Formation of new proteins
  - C. Unfolding of proteins
  - D. Folding of proteins

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94. The sugar base of a nucleotide is a :

- A. Pentose
- B. Hexose
- C. Heptose
- D. Triose

95. Molecular scissors used in genetic engineering are :

- A. Helicases
- B. DNA polymerase
- C. Restriction enzymes
- D. DNA ligase

96. Cell division can be temporarily suspended by :

- A. Radiating with UV light      B. Heat treatment  
C. By depriving cell for  $\text{CO}_2$       D. Treatment with colchicine

97. Housekeeping genes are:

- A. Constitutively expressed      B. Selectively expressed  
C. Randomly expressed      D. Never expressed

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98. Codons causing chain termination are:

- A. GAT, AAT, ATG      B. TAG, TAA, TGA  
C. UAG, UGA, UAA      D. AGT, TAG, UGA

99. Hybrid vigor is mostly due to:

- A. Heterozygosity  
B. Superiority of all genes  
C. Homozygosity of pair of characters  
D. Mixing up of cytoplasm of male with that of female exclusively

100. An incomplete dominance was shown in:

- A. Sweet pea      B. Four -o- clock  
C. Mustard      D. Wheat

[23]

Handwritten calculations:  
 $\frac{18}{4} = 4.5$   
6.2  
58.5