

Grassroots Academy New Delhi

NET JRF TEST 13

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Contact Number: 9350232207, 9891602060

TEST-13
(Full syllabus test)

1. The unit of Dipole moment is
 - (a) Kg/m.sec
 - (b) Joule
 - (c) Debye
 - (d) Watt

2. Induced fit model of enzyme action was given by
 - (a) Koshland
 - (b) Kuhne
 - (c) Fischer
 - (d) None

3. The process of PCR uses Taq polymerase derived from
 - (a) *Thermus agaricus*
 - (b) *Thermus aquaticus*
 - (c) *Trichoderma*
 - (d) none

4. Some common auxins used in Plant tissue culture are
 - (a) IBA
 - (b) IAA
 - (c) Zeatin
 - (d) Both a & b

5. Floating number in computer has
 - (a) Definite range & indefinite precision
 - (b) Indefinite range & indefinite precision
 - (c) Definite range & definite precision
 - (d) Indefinite range & definite precision

6. The Superfemales with XXX contains how many Barr bodies?
 - (a) 3
 - (b) 4
 - (c) 2
 - (d) 1

7. We are able to know about internal details of earth due to

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- (a) Surface features
- (b) Picture from satellites
- (c) Acoustic waves from earth quake
- (d) None

8. The basis of diversity is

- (a) Genetic adaptability
- (b) Competition
- (c) Adaptation
- (d) all

9. Frequency of the gene in a population will increase if the gene is

- (a) Dominant
- (b) Lethal
- (c) Recessive
- (d) Favourably selected

10. A zygote formed by a fusion of one normal gamete and another gamete where one of the chromosomes did not segregate at Anaphase-II will lead into chromosomal aberrations known as

- (a) Diploidy
- (b) Haploidy
- (c) Polyploidy
- (d) Aneuploidy

11. Cancerous cells are generally found in _____ phase of the cell cycle

- (a) G₂
- (b) G₁
- (c) S
- (d) M

12. ELISA is used to identify

- (a) Ag
- (b) Ab
- (c) Proteins
- (d) none

13. If a substrate changes from X to Y and finally to Z by a first order reaction. The rate constant of X Y is 0.2 sec⁻¹ and Y Z is 200 sec⁻¹. The overall rate of reaction from X Z will be

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- (a) 0.4 per second
- (b) 0.2 per second
- (c) 200 per second
- (d) 400 per second

14. Biogenetic law is propounded by

- (a) Von Baer & Haeckel
- (b) Von Baer
- (c) Aristotle
- (d) Mendel

15. Which of the following does not affect enzyme activity?

- (a) Temperature
- (b) Substrate concentration
- (c) pH
- (d) None

16. Isozymes are

- (a) Same activity
- (b) Same molecule
- (c) Different substrate affinity
- (d) Same substrate activity

17. Which of the following is irreversible inhibition?

- (a) Noncompetitive
- (b) Competitive
- (c) Both
- (d) None

18. Which hormone induces shoot in callus in plant tissue culture?

- (a) IAA
- (b) Zeatin
- (c) NAA
- (d) IBA

19. The word "phyla" of Greek language means

- (a) To produce
- (b) Be born
- (c) Phylum
- (d) Tribe, Race

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20. The suffix S in ribosome Unit indicates

- (a) Sedimentation coefficient
- (b) Solubility
- (c) Size
- (d) surface area

21. Type of biome in California and coastal regions of Mediterranean sea is

- (a) Savannah
- (b) Taiga
- (c) Chaparrals
- (d) Tropical Deciduous forests

22. Some common auxins used in Plant tissue culture are

- (a) IBA
- (b) IAA
- (c) Zeatin
- (d) Both a & b

23. Which of the following vaccine does not provide lifetime protection

- (a) Tetanus
- (b) Typhoid
- (c) Polio
- (d) Small Pox

24. Nucleoli are not present in

- (a) BGA
- (b) Eukaryotes
- (c) Hepatocytes
- (d) Maize

25. Starch is commonly stored in

- (a) Chromoplast
- (b) Chloroplast
- (c) Leucoplast
- (d) Amyloplast

26. A fertilizer has a formula of 3 figures 15-9-9. They stand for the percentage of

- (a) N, P, K
- (b) N, Ca, Fe
- (c) P, K, Ca
- (d) K, Ca, fe

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27. It is a prerequisite of F plasmid to contain _____ genes

- (a) His
- (b) Lac
- (c) Hsp
- (d) tra

28. Enzymes act by

- (a) Lowering enthalpy
- (b) Lowering entropy
- (c) Lowering activation energy
- (d) Lowering free energy

29. Venus is visible only during the morning or evening because

- (a) It has very elliptical path
- (b) It rotates very fast
- (c) It is eclipsed by earth
- (d) Its revolving path is smaller than earth

30. Department of Biotechnology works under which ministry?

- (a) Home
- (b) Human Welfare
- (c) Science & Technology
- (d) Rural Development

31. Prions are

- (a) infectious protein
- (b) defective protein
- (c) similar to virioids
- (d) all

32. The kind of forest in the "silent valley" is

- (a) Deciduous
- (b) Temperate
- (c) Tropical
- (d) Rain forest

33. Genetic drift is an account of

- (a) mutation
- (b) variation

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- (c) Increase in population
- (d) decrease in population

34. Enantiomers show similar

- (a) Mass spectra
- (b) Chemical properties
- (c) NMR spectra
- (d) All

35. Which of the following is an example of serendipity?

- (a) Discovery of Microscope
- (b) Discovery of Penicillin
- (c) Discovery of Cell
- (d) Discovery of Nucleus

36. The conversion of Dihydrofolate to Tetrahydrofolate is catalysed by

- (a) DHAR
- (b) DHFR
- (c) DHGR
- (d) None

37. Gaseous mixture used by Miller for synthesis of amino acids through heat & electric discharge include

- (a) H₂S, NH₃, CO₂
- (b) CH₄, NH₃, H₂, Water vapour
- (c) CH₄, NH₃,
- (d) None

38. Hugo de Vries worked on

- (a) Sweet pea
- (b) Garden pea
- (c) Datura
- (d) Evening primrose

39. Sphaerosomes are associated with

- (a) Lipid metabolism
- (b) Protein metabolism
- (c) Respiration
- (d) Transpiration

40. Specific activity of protoplasm is slightly _____ than water

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- (a) Less
- (b) Equal
- (c) More
- (d) Far more

41. Antibodies are

- (a) Gamma globulins
- (b) Albumins
- (c) Alpha globulins
- (d) Beta globulins

42. At which wavelength of light, bacteria carry out photosynthesis?

- (a) Far Red
- (b) UV
- (c) Red
- (d) Blue

43. Cell Sap is found in

- (a) Vacuole
- (b) Mitochondria
- (c) Chloroplast
- (d) Lysosome

44. Hirudin is a strong Thrombin

- (a) Repressor
- (b) Activator
- (c) Inhibitor
- (d) Both b & c

45. Active site of an enzyme is

- (a) Substrate binding site
- (b) 3- D entity
- (c) Cleft
- (d) All

46. Enzymes are different to inorganic catalyst in

- (a) being proteinaceous
- (b) organic nature
- (c) both
- (d) none

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47. The common name of *Oenothera lamarkiana* is
- (a) Sweet pea
 - (b) Garden pea
 - (c) Datura
 - (d) Evening primrose
48. Which of the following microscope can be used to study unstained & dividing cells?
- (a) Phase contrast microscope
 - (b) Electron microscope
 - (c) Polarizing microscope
 - (d) Compound microscope
49. Which toxin is produced by *Aspergillus* sp.?
- (a) Aflatoxin
 - (b) Aspergillin
 - (c) Alfatoxin
 - (d) Betatoxin
50. Feedback inhibition is seen in _____ structure of enzyme
- (a) secondary
 - (b) Primary
 - (c) Allosteric
 - (d) All
51. Which of the following cannot be grown on artificial culture medium?
- (a) TMV
 - (b) E.coli
 - (c) *Aspergillus niger*
 - (d) Yeast
52. Who is behind the successful international journal "Phytomorphology"?
- (a) P. Maheshwari
 - (b) S. C. Maheshwari
 - (c) S. Guha
 - (d) H. S. Chawla
53. The combination of which two hormones gives maximum result in micropropagation
- (a) auxin & gibberellin
 - (b) auxin & cytokinin
 - (c) Cytokinin & ABA
 - (d) Cytokinin & gibberellin

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54. Who introduced the term "species" for any one kind of living things?

- (a) Josef
- (b) John Lister
- (c) Aristotle
- (d) John Ray

55. Hexaploid wheat developed through

- (a) Chromosome doubling
- (b) Hybridomas
- (c) Hybridisation
- (d) Hybridisation & Chromosome doubling

56. Which amino acid was first produced by fermentation?

- (a) L-Glutamate
- (b) D-Glutamate
- (c) D-lysine
- (d) L-lysine

57. Trp operon contains _____ while Lac operon contains _____ number of structural genes.

- (a) 3, 5
- (b) 5, 3
- (c) 5, 5
- (d) 3, 3

58. If in a balloon air is filled, it was observed that it denies Boyles rule $P \propto 1/V$ because as air is filled both the Pressure and volume inside the balloon increases. The explanation for this is

- (a) Boyles law is applicable @ only low temperatures
- (b) Air is not a real gas
- (c) Boyles law is applicable @ only high temperatures
- (d) Boyles law is applicable at all temperatures

59. Monoclonal Ab are produced by

- (a) Hybrid technology
- (b) Hybridoma technology
- (c) hybridisation technology
- (d) Hybridoma technique

60. H-bonding occurs in compounds containing

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- (a) F, Cl, S
- (b) F, O, N
- (c) O, N, Cl, S
- (d) F, O, N, Cl, S

61. Barr bodies were discovered by

- (a) James Barr
- (b) Sherlock Barr
- (c) Christian Barr
- (d) Robert Barr

62. If the pendulum with the time period t is placed in the space then its time period will

- (a) Decrease
- (b) Increase
- (c) Zero
- (d) Infinite

63. Origin of first mammal occurred around _____ million years ago.

- (a) 220
- (b) 120
- (c) 320
- (d) 420

64. DNA Fingerprinting uses _____ to map the genome.

- (a) VNTRs
- (b) Satellite DNA & VNTRs
- (c) Short DNA
- (d) Telomeres

65. Human hand, wing of bat, & flipper of whale represents

- (a) Analogous organs
- (b) Homologous organs
- (c) Vestigial organs
- (d) Evolutionary organs

66. What is the relationship between Murashige & Skoog?

- (a) Student & Teacher
- (b) Father & Son
- (c) Teacher & Student
- (d) Son & Father

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67. Watson & Crick proposed the structure of _____ form of DNA

- (a) B
- (b) A
- (c) D
- (d) Z

68. Cell Sap Is

- (a) Nonliving material
- (b) Living material
- (c) Non existing material
- (d) None

69. Fossilization is

- (a) Organisms eaten by predators
- (b) Organisms destroyed by scavengers
- (c) animals buried by natural process
- (d) Organisms destroyed by calamities

70. Polyribosomes are aggregates of

- (a) mRNA
- (b) rRNA
- (c) tRNA
- (d) Several ribosomes attached to mRNA

71. Read the following & Choose the correct option a) The mature cells have higher turgor pressure b) Mature cells have more rigid cell wall c) High turgor pressure is applied to stretch young meristems.

- (a) b, c
- (b) a, b
- (c) a, c
- (d) None

72. Calcium deficiency causes permanent wilting of tip of young leaves which is named as

- (a) Wither tip disease
- (b) Red rot disease
- (c) Both
- (d) None

73. Mucous membrane lining stomach is derive from

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- (a) Mesoderm
- (b) Ectoderm
- (c) Endoderm
- (d) None

74. Who was the first to propose that the opening & closing of stomata occurs due to changes in the turgor pressure of the guard cells?

- (a) Curtis
- (b) Symplast
- (c) Levitt
- (d) Schwender

75. The transcribed sequence of 5'GATGGCATGATACC3' in mRNA will be

- (a) 5'-GAUGGCACGAU-3'
- (b) 5'- CTACCGTACTATGG -3'
- (c) 3'-GAUGGCACGAU-5'
- (d) 3'-CTACCGTACTATGG -5'

76. Animals of cold countries have shorter ears. This is

- (a) Cope's law
- (b) Allen's law
- (c) Bergmann's law
- (d) Dollo's law

77. What is the difference between Chimeric Ab & Humanized Ab?

- (a) Differ in hypervariable regions
- (b) Both are same
- (c) Are derived from humans
- (d) differ in constant region

78. Study of fossils comes under

- (a) Paleography
- (b) Organic evolution
- (c) Paleontology
- (d) Herpetology

79. Considering the isothermal condition, what would be change in the atmospheric pressure at height 0 Km, 8 Km and 16 Km

- (a) 1, 0.5, 0
- (b) No change
- (c) 0.5, 0, 1

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(d) 0.5, 1, 0

80. Cystoliths are made up of

- (a) Calcium Bicarbonate
- (b) Calcium oxalate
- (c) Calcium Carbonate
- (d) Calcium chloride

81. Vanderwaals forces are

- (a) Forces of repulsion
- (b) Forces of attraction
- (c) Electrostatic in nature
- (d) All

82. The cell cycle observes checkpoints because of the activity of

- (a) Cyclin dependent Kinases
- (b) Cyclin dependent Phosphatases
- (c) Cyclin dependent Transferases
- (d) Cyclin dependent Dehydrogenases

83. GEAC works at which level?

- (a) Intra state
- (b) Regional
- (c) National
- (d) District

84. The full form of RCGM is

- (a) Reference Committee on Genetic manipulation
- (b) Review Committee on Genetic manipulation
- (c) Review Council on Genetic manipulation
- (d) Review Committee on Gene Mapping

85. Milk does not contain

- (a) Vitamins & Minerals
- (b) Vitamins & Fats
- (c) Vitamins & Fe
- (d) Vitamins & Proteins

86. Blue print for building & running Cellular machinery is

- (a) DNA

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- (b) RNA
- (c) Protein
- (d) Minerals

87. Southern blotting is used for the analysis of

- (a) DNA
- (b) RNA
- (c) PROTEINS
- (d) VITAMINS

88. An object of 1.5 m height is placed 8.5 m away from the human eye and image is formed on retina which is 1.7 cm away from the lens. The size of image will be

- (a) 0.3 cm
- (b) 0.3 mm
- (c) 0.3 micron
- (d) 0.3 m

89. The PHB (poly beta hydroxyl butyrate) is a type of

- (a) Genome
- (b) Wall material
- (c) Excretory substance.
- (d) Reserve food

90. Cybrids are

- (a) Cytoplasmic hybrids
- (b) obtained by mixing nuclei of one Cell & Cytoplasm of 2 cells
- (c) Nucleoplasmic hybrids
- (d) Both a & b

91. X-ray crystallography is useful in the study of

- (a) 3-D Structure of Protein
- (b) Lipid structure
- (c) Arrangement of protein
- (d) Composition of protein

92. Plasmids are

- (a) Closed
- (b) Covalent
- (c) Circular
- (d) All

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93. Nobel prize was started in the year
(a) 1901
(b) 1900
(c) 1910
(d) 1909
94. Which agro based industry is behind the success of Bt cotton?
(a) Ingenta
(b) Reliance
(c) Biocon
(d) Monsanto
95. Microvilli of epithelial cells
a) Increases surface area
b) Increases absorption
c) Both
d) None
96. RBC of mammals are biconcave except
a) Humans
b) Monkey
c) Camel
d) Rat
97. Who formulated the procedure for in vitro anther culture?
a) Guha & Maheshwari
b) Slater
c) Hargovind Khorana
d) Kuhne
98. First cell to be differentiated in developing embryo is
a) Neurons
b) RBCs
c) Hepatocytes
d) Epithelial cells
99. Mitochondria & Chloroplast shows
(a) Endosymbiotic origin
(b) Exosymbiotic origin
(c) Exospheric origin
(d) Endospheric origin

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100. Stereo chemistry deals with spatial arrangements of

- (a) molecules
- (b) atoms
- (c) ions
- (d) atoms & groups in a molecule

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