

UP-CPMT - 2006

Paper-1

Biology

1. Which is correct ?
 - 1) RNA is genetic material of bacteria
 - 2) RNA is genetic material of all virus
 - 3) DNA is genetic material of some organism
 - 4) Some virus has RNA as genetic material

2. Auxin causes :
 - 1) growth of apical bud
 - 2) growth of lateral bud
 - 3) seed dormancy
 - 4) fall of leaf

3. Heterothalmsm was discovered by :
 - 1) Blakeslee
 - 2) Bessey
 - 3) Butler
 - 4) A. Flemming

4. Parasitic algae is :
 - 1) Cephaleuros
 - 2) Spirogyra
 - 3) Chlorella
 - 4) Anabaena

5. A pollutant can be best defined as it :
 - 1) has natural geochemical cycles
 - 2) changes homeostasis of environment
 - 3) disturb natural flora of a place
 - 4) become stabilized in ecosystem forever

6. Blood vascular system of earthworm is :
 - 1) open type with Hb in RBC
 - 2) open type with Hb in plasma
 - 3) closed type with Hb in RBC

- 4) closed type with Hb in plasma
7. Which is correct for bacteria ?
- 1) They have both cyclic and non-cyclic photo phosphorylation
 - 2) They absorb light > 900 nm of wavelength
 - 3) They release O₂ during photosynthesis
 - 4) They use H₂O during photosynthesis
8. Trigeminal nerve in frog is of :
- 1) 4th
 - 2) 5th
 - 3) 8th
 - 4) 9th
9. Sex chromosomes in male of silkworm is :
- 1) X
 - 2) Y
 - 3) XX
 - 4) no X no Y
10. Number of meiosis for formation of 64 zygote in angiosperm is 80 but in gymnosperms, number of meiosis for formation of 64 zygotes will :
- 1) 40
 - 2) 80
 - 3) 160
 - 4) 20
11. Which is not correct ?
- 1) Ovaries matured first in earthworm
 - 2) Spermatheca present in segment 6-9 segments
 - 3) Male genital apertures at 18 segment
 - 4) One pair ovary in 13 segment
12. Which is a sex linked disease ?
- 1) Sickle cell anaemia
 - 2) Haemophilia
 - 3) Phenyl ketonuria
 - 4) Albinism
13. Large size of pinnae in animals of warm region in comparison to animals of cold region is due to law of :
- 1) Dollo's law
 - 2) Gloger's law
 - 3) Cope's law
 - 4) Allen's rule
14. Aldolase enzyme is present in :
- 1) mitochondria
 - 2) chloroplast
 - 3) lysosomes
 - 4) endoplasmic reticulum

15. Trophic level of food chain having greatest amount of energy :
- 1) carnivores
 - 2) herbivores
 - 3) autotrophs
 - 4) omnivores
16. Male and female cockroach is differ's due to presence or absence of :
- 1) anal cerci and anal style
 - 2) anal cerci
 - 3) anal style
 - 4) anal sitae
17. C₄ pathway for CO₂ fixation was proposed by :
- 1) Benson and associates
 - 2) Arnon and associates
 - 3) Rouhani et. al.
 - 4) Hatch et. al.
18. Maximum numbers of vascular bundles are present in :
- 1) monocot stem
 - 2) monocot root
 - 3) dicot stem
 - 4) dicot root
19. Carthamus belongs to family :
- 1) Compositae
 - 2) Gramineae
 - 3) Liliaceae
 - 4) Solanaceae
20. Modification of an organism to its external environment is example of :
- 1) analogy
 - 2) homology
 - 3) adaptation
 - 4) speciation
21. Disorder related with thyroid gland is :
- 1) diabetes mellitus
 - 2) hypercalcemia
 - 3) osteoporosis
 - 4) myxoedema

22. Which types of cells absent in sponges ?

- 1) Trophocytes
- 2) Myocytes
- 3) Archeocytes
- 4) Cnidocytes

23. Dilatation of pupil takes place by :

- 1) sympathetic nervous system
- 2) parasympathetic nervous system
- 3) central nervous system
- 4) both (1) and (2)

24. Resting membrane potential in nerve cells is :

- 1) -70
- 2) -40
- 3) +70
- 4) +86

25. Which of the following set contains only homologous organs ?

- 1) Whale's flipper, horses forelimb, human hand
- 2) Wings of butterfly, crow and insect
- 3) Horse's forelimb, insect wing, human hand
- 4) Vermiform appendix, body hair and patella

26. Which pigment involves in photoperiodic change in plants ?

- 1) Phytochrome
- 2) Cytochrome
- 3) Chlorophyll
- 4) Anthocyanin

27. Which is not correct for ancient plants ?

- 1) They have photosynthetic pigment
- 2) They are primitive algae like
- 3) They use H_2S as hydrogen source
- 4) They release O_2 as by product

28. Which is not related with N_2 -fixation ?

- 1) Anabaena
- 2) Rhizobium
- 3) Pseudomonas
- 4) Nostoc

29. Which is a correct pair of a pathogen and its vector ?

- 1) Plasmodium and Anopheles
- 2) Plasmodium and Culex
- 3) Virus and Anopheles
- 4) Protozoan and Aedes

30. Liver and pancreas is derivative of :

- 1) ectoderm
- 2) endoderm
- 3) ectoderm and mesoderm
- 4) ectoderm and endoderm

31. Third moulting in *Ascaris* larva takes place in :

- 1) lung
- 2) liver
- 3) heart
- 4) intestine

32. Diameter of DNA is constant due to :

- 1) hydrogen bonds between base
- 2) phosphodiester bond
- 3) disulphide bond
- 4) covalent bonds

33. A fruit in which seed coat and fruit wall is fused known as caryopsis present in :

- 1) wheat
- 2) sunflower
- 3) mango
- 4) tomato

34. Lateral roots arise from :

- 1) pericycle
- 2) cortex
- 3) endodermis
- 4) stele

35. A circulatory system which is formed by capillaries and ends with capillaries is :

- 1) renal
- 2) hepatic
- 3) double circulatory system
- 4) hypophysial

36. Amphimixis is :

- 1) fusion of sperm with egg
- 2) fusion of pronucleus of sperm with of egg
- 3) no fusion
- 4) fusion of diploid cells

37. Which is correct to saprophytic angiosperm ?

- 1) They secretes enzyme outside the body and absorbes
- 2) They have mycorrhiza with fungi
- 3) They takes food and then digested it
- 4) They are photosynthetic

38. On selfing RrTt we produce 400 plant, find out number of plants with genotype RrTt :

- 1) 100
- 2) 225
- 3) 50
- 4) 300

39. Catalytic converter in vehicle is used for controlling :

- 1) air pollution
- 2) water pollution
- 3) radioactive pollution
- 4) soil pollution

40. Term 'Innominate' is related with :

- 1) nerve
- 2) artery
- 3) skeleton and artery
- 4) none of these

41. Lactels helps in :

- 1) absorption of fats
- 2) absorption of carbohydrate
- 3) absorption of proteins
- 4) all of the above

42. Submerged hydrophytes shows :

- 1) stomata
- 2) abundant air sacs
- 3) developed mechanical tissue
- 4) secondary growth

43. Which was absent in primitive environment during origin of life ?

- 1) O₂
- 2) H₂

3) CH₄

4) H₂O

44. A vascular bundles without pith is :

1) protostele

2) siphonostele

3) solenostele

4) none of these

45. In human the waste products of nucleotide metabolism are excreted as :

1) ammonia

2) uric acid

3) urea

4) amino acid

46. A wastage process is :

1) respiration

2) photosynthesis

3) photorespiration

4) movement

47. Undifferentiated totipotent cells of sponges :

1) archaeocytes

2) porocytes

3) trophocytes

4) myocytes

48. Ownine used for treatment of malarial fever extrected from :

1) *Atropa belladonna*

2) *Cinchona officinalis*

3) *Aconitum napellus*

4) *Rouwolfia serpentina*

49. Which is a sex influenced disease ?

1) Baldness in male

2) Haemophilia

3) Xeroderma pigmentosa

4) Down's syndrome

50. Genetic diversity is related to :

1) gene based diversity

- 2) types of communities in an area
- 3) diversity and evolution of species with a genus
- 4) types of species within a community

51. Sigmoid notch is present in :

- 1) femur
- 2) radius-ulna
- 3) tibia-fibula
- 4) humerus

52. Cell membrane controls :

- 1) exocytosis
- 2) endocytosis
- 3) both exocytosis and endocytosis
- 4) not controls movement of substances

53. Who proves plant absorbs CO_2 and release O_2 ?

- 1) Mayer
- 2) Von Niel
- 3) Priestley
- 4) Ingen House

54. Largest muscle in the human body is :

- 1) sartorius
- 2) gluteus
- 3) stapedius
- 4) masseter

55. Addition of which elements in water, speed up the metamorphosis in frog tadpole larva :

- 1) I_2
- 2) K
- 3) Na
- 4) Cl

56. Restriction endonuclease cuts :

- 1) one strand of DNA at specific site
- 2) both strand of DNA
- 3) both stands of DNA at any site
- 4) single strand of RNA

57. Enveloped virus enters into host cells by :

- 1) injection own nucleic acid inside host cells
- 2) by contact with cell receptor and endocytosis
- 3) by phagocytosis
- 4) fusion with the plasma membrane of host

58. Adrenaline and nor-adrenaline are hormones and acts as :

- 1) energy producing agent
- 2) food storage material
- 3) neuro transmitter
- 4) energy storing substances

59. Succus entericus is :

- 1) intestinal juice
- 2) gastric juice
- 3) bile juice
- 4) salivary juice

60. Ovules of gymnosperm is :

- 1) bitegmic
- 2) unitegmic
- 3) naked
- 4) both (2) and (3)

61. Theory of natural selection was given by :

- 1) Lamarck
- 2) Darwin
- 3) Wallace
- 4) Weismann

62. Synthesis of urea occurs in :

- 1) kidney
- 2) liver
- 3) gall bladder
- 4) urinary bladder

63. Zygotic meiosis takes place in :

- 1) Chlamydomonas
- 2) Bryophyte
- 3) Pinus
- 4) Dryopteris

64. Last electron acceptor during ETS :

- 1) O₂
- 2) cytochrome a₃
- 3) cytochrome a
- 4) cytochrome a₂

65. Maximum cranial capacity is of :

- 1) Neanderthal man
- 2) Cro-magnan man
- 3) Modern man
- 4) Java man

66. Difference between *Amoeba* and *Antamoeba* :

- 1) contractile vacuoles absent in *Antamoeba*
- 2) contractile vacules absent in *Amoeba*
- 3) food vacuoles present in *Amoeba* only
- 4) none of the above

67. Difference between rough and smooth endoplasmic reticulum :

- 1) rough has ribosomes
- 2) smooth has ribosomes
- 3) smooth takes part in protein synthesis
- 4) both has F₁ particles

68. Crypts of Leiberkuhn is present in :

- 1) small intestine
- 2) liver
- 3) stomach
- 4) colon

69. Maximum percentage of which occur in plant ash ?

- 1) Mg
- 2) Zn
- 3) K
- 4) Ca

70. In which cell organelles a lipoprotein covering is absent ?

- 1) Ribosomes
- 2) Lysosomes
- 3) Mitochondria
- 4) Peroxisomes

71. Pneumatophores are present in :

- 1) mangroves
- 2) xerophyte

- 3) hydrophyte
- 4) lithophyte

72. Bladder canal present in :

- 1) male rabbit
- 2) male frog
- 3) female frog
- 4) both male and female frog

73. Bile salts help in :

- 1) digestion of fat
- 2) digestion and absorption of fat
- 3) digestion of protein
- 4) digestion of protein and fat

74. Development of pentadactylous nature in vertebrate is example of :

- 1) adaptation
- 2) convergent
- 3) convergent and adaptative radiation
- 4) divergent and adaptative radiation

75. Renal portal system is :

- 1) present in all vertebrates
- 2) present in all chordates
- 3) absent in mammals
- 4) present in all mammals

76. Who discovered Amoeba ?

- 1) Russel Von Rosenhoff
- 2) Hyman
- 3) Lamble and Losch
- 4) Goldacre and Lorch

77. Which is not a reflex action ?

- 1) Salivation
- 2) Eye opening and closing
- 3) Response to pinching pin in a frog leg
- 4) Sweating

78. In photosynthesis NADPH_2 is formed but in respiration it's forms during :

- 1) HMP
- 2) ETS

- 3) Krebs cycle
- 4) None of these

79. Which of the following is exhaustible but limited source of energy ?

- 1) Nuclear fuels
- 2) Water energy
- 3) Fossil fuels
- 4) Solar energy

80. Cytochrome oxidase contain :

- 1) Fe
- 2) Mg
- 3) Zn
- 4) Cu

81. Most diverse organism of an ecosystem is :

- 1) producer
- 2) consumer
- 3) decomposer
- 4) carnivores

82. In gynandromorphs :

- 1) some cells of body contain XX and-some cells with genotype XY
- 2) all cells have XX genotype
- 3) all cells have XY genotype
- 4) all cells with genotype XXY

83. Kyoto protocol is related with :

- 1) ozone layer depletion
- 2) green-house effect
- 3) water pollution
- 4) conservation wild life

84. Which is correct for artery?

- 1) Thick walled in which blood flow at high pressure
- 2) Thin walled blood flow with low pressure
- 3) Thick walled and blood flow low pressure
- 4) None of the above

85. In a double stranded DNA, the sequence of base pairs in one strand are AGCTAAGE. What is the complementary sequence on the other strand ?

- 1) TCGATTCCG
- 2) VCGAUUCG
- 3) AGCTAAGC
- 4) CAUTAUCG

86. Spore of *Funaria* on germination gives rise to :

- 1) protonema
- 2) sporophyte
- 3) prothalus
- 4) capsule

87. Gene regulation in bacteria is shown by :

- 1) Jacob and Monod
- 2) Beadle and Tatum
- 3) Temin and Baltimore
- 4) Kornberg

88. Vascular bundle in which two patches of phloem are present on both side of xylem ?

- 1) Collateral
- 2) Bicollateral
- 3) Concentric
- 4) Radial

89. Which is incorrect for Mendelism ?

- 1) Works on garden pea
- 2) Law of segregation proved by mono hybride cross
- 3) Discovered linkage
- 4) All of the above

90. Photosynthetic products translocated in the form of :

- 1) glucose
- 2) sucrose
- 3) maltose
- 4) starch

91. Most advanced fruit is :

- 1) cypsela
- 2) caryopsis
- 3) pome
- 4) eterio of drupe

92. Steroid hormones works as :

- 1) they enter into target cells and binds with specific receptor and activates specific genes to form protein
- 2) they binds to cell membrane
- 3) they catalyse formation of C-AMP

4) none of the above

93. Ulothrix release zoospore during :

- 1) evening
- 2) morning
- 3) night
- 4) noon

94. Which is absent in a leaf ?

- 1) Lenticel
- 2) Stomata
- 3) Mesophyll
- 4) Chloroplast

95. Larger nucleus in a pollen grain is :

- 1) tube nucleus
- 2) sperm nucleus
- 3) generative nucleus
- 4) none of these

96. Term 'New Systematic' was given by :

- 1) Julian Huxley
- 2) Bateson
- 3) Linnaeus
- 4) Darwin

97. Presence of persistent calyx is a feature of family :

- 1) Solanaceae
- 2) Gramineae
- 3) Malvaceae
- 4) Compositae

98. Roots of plant absorb from soil :

- 1) capillary water
- 2) chemically bound water
- 3) gravitational water
- 4) hygroscopic water

99. Net gain of ATP during glycolysis are :

- 1) 2 2) 4 3) 8 4) 10

100. Raphides are crystals of :

- 1) calcium carbonate
- 2) calcium oxalate
- 3) magnesium carbonate
- 4) magnesium oxalate

Answer Key

1) 4	2) 2	3) 1	4) 1	5) 2	6) 4	7) 2	8) 2	9) 3	10) 2
11) 1	12) 2	13) 4	14) 2	15) 3	16) 3	17) 4	18) 2	19) 1	20) 3
21) 4	22) 4	23) 1	24) 1	25) 1	26) 1	27) 4	28) 3	29) 1	30) 2
31) 1	32) 1	33) 1	34) 1	35) 4	36) 1	37) 1	38) 1	39) 1	40) 3
41) 1	42) 2	43) 1	44) 1	45) 2	46) 3	47) 1	48) 2	49) 1	50) 1
51) 2	52) 3	53) 3	54) 2	55) 1	56) 2	57) 1	58) 3	59) 1	60) 4
61) 2	62) 2	63) 1	64) 1	65) 2	66) 1	67) 1	68) 1	69) 4	70) 1
71) 1	72) 2	73) 2	74) 4	75) 3	76) 1	77) 4	78) 1	79) 3	80) 1
81) 3	82) 1	83) 2	84) 1	85) 1	86) 1	87) 1	88) 2	89) 3	90) 2
91) 4	92) 1	93) 2	94) 1	95) 1	96) 1	97) 1	98) 1	99) 3	100) 2