

UP-CPMT - 2008

Paper-1

Biology

1. Small fish get stuck near the bottom of a shark and derives its nutrition from it. This kind of association is called as
 - 1) antibiosis
 - 2) commensalism
 - 3) predation
 - 4) parasitism

2. Which of these statements about Huntington's disease is true?
 - 1) Genetic tests to detect the presence of the allele responsible for Huntington's disease do not exist at this time
 - 2) The onset of Huntington's disease is typically between birth and three year of age
 - 3) There is currently no effective treatment of Huntington's disease
 - 4) Huntington's disease is caused by the expression of a recessive allele

3. Which of the following cell type is capable of giving rise to other cell types in sponges?
 - 1) Thesocytes
 - 2) Pinacocytes
 - 3) Cnidocytes
 - 4) Archaeocytes

4. DNA multiplication is called
 - 1) translation
 - 2) replication
 - 3) transduction
 - 4) trascription

5. During inspiration, the diaphragm
 - 1) expands
 - 2) shows no change
 - 3) contracts and flattens
 - 4) relaxes to become dome-shaped

6. The female genital pore of *Pheretima posthuma* located upon the segment
 - 1) 14th

- 2) 16th
- 3) 18th
- 4) 15th

7. In cockroach, larval and nymphal characters are maintained by

- 1) ecdysone
- 2) salivary glands
- 3) parotid gland
- 4) juvenile hormone

8. Which of the following is not the feature of gymnosperms?

- 1) Parallel venation
- 2) Perennial plants
- 3) Distinct branches (long and short branches)
- 4) Xylem with vessels

9. Edible part of mushroom is

- 1) basidiocarp
- 2) secondary mycelium
- 3) primary mycelium
- 4) tertiary mycelium

10. Which is always present in photochemical smog?

- 1) O₃
- 2) CO₂
- 3) SO₂
- 4) CH₄

11. In which of the following animals, respiration occurs without any respiratory organ?

- 1) Frog
- 2) Fish
- 3) Cockroach
- 4) Earthworm

12. Spindle fibre is made up of

- 1) tubulin
- 2) humulin
- 3) intermediate filament
- 4) flagellin

13. The excretory material of bony fish is

- 1) urea
- 2) protein
- 3) ammonia
- 4) amino acid

14. Cleavage polyembryony occurs in

- 1) Pinus
- 2) Mini Cycas
- 3) Cycas
- 4) Ephedra

15. Which of the following theory gives the latest explanation for the closure of stomata?

- 1) ABA theory
- 2) Munch theory
- 3) Starch glucose theory
- 4) Active K⁺ transport theory

16. A marriage between normal visioned man and colourblind woman will produce which of the following types of offspring?

- 1) Normal sons and carrier daughters
- 2) Colourblind sons and carrier daughters
- 3) Colourblind sons and 50% carrier daughters
- 4) 50% colourblind sons and 50% carrier daughters

17. Binomial system of nomenclature was given by

- 1) Julian Huxley
- 2) Bentham and Hooker
- 3) Linnaeus
- 4) Casper Bauhin

18. In *Pinus*, male cone bears a large number of

- 1) ligules
- 2) anthers
- 3) micro-sporophylls
- 4) mega-sporophylls

19. Malpighian tubules are

- 1) excretory organs of insects
- 2) excretory organs of frog
- 3) respiratory organs of insects
- 4) endocrine glands of insects

20. The intermediate host of *Schistosoma* is

- 1) snail
- 2) mosquito
- 3) housefly
- 4) sheep

21. The vitamin which is essential for blood clotting is

- 1) vitamin-A
- 2) vitamin-B
- 3) vitamin-C
- 4) vitamin-K

22. In Mollusca, eye is present over a stalk, called

- 1) ostracum
- 2) operculum
- 3) ommatophores
- 4) osphradium

23. In rabbit, end of a long bone is connected in another by

- 1) tendon
- 2) ligaments
- 3) muscle
- 4) cartilage

24. Which of the following was formed in S Miller's experiment?

- 1) Amino acids
- 2) Nucleic acids
- 3) UV radiations
- 4) Microspheres

25. The bioassay of auxin is

- 1) avena curvature test
- 2) callus formation
- 3) culture of fungus
- 4) seed dormancy

26. In *Ascaris*, the coelom is

- 1) schizocoelom
- 2) pseudocoelom
- 3) true coelom
- 4) haemocoelom

27. Which of the following is/are grouped under phanerogams?

- 1) Angiosperms
- 2) Gymnosperms
- 3) Pteridophytes
- 4) Both (1) and (2)

28. Indusium is found in

- 1) algae
- 2) ferns
- 3) moss
- 4) Cycas

29. The vacuole is lined by a membrane called

- 1) tonoplast
- 2) jacket
- 3) cell membrane
- 4) tonoplasm

30. In frog heart, there are cardiac muscles which consists of fibres called

- 1) Purkinje fibres
- 2) myonemes
- 3) telodendria
- 4) coluxnae carnae

31. Animals having a built in thermostat to maintain constant body temperature are known as

- 1) biothermic
- 2) poikilothermic
- 3) oligothermic
- 4) homeothernic

32. Biological concept of species is mainly based on

- 1) reproductive isolation
- 2) morphological features only
- 3) methods of reproduction only
- 4) morphology and methods of reproduction

33. In the treatment of waste water discharge, which treatment stage involves biological treatment?

- 1) Primary treatment
- 2) Secondary treatment
- 3) Tertiary treatment
- 4) Reverse osmosis stage

34. Contractile vacuole in protozoan Amoeba is meant for
- 1) respiration
 - 2) excretion
 - 3) locomotion
 - 4) osmoregulation
35. Which one is component of Ornithine cycle?
- 1) Ornithine, citrulline and alanine
 - 2) Ornithine, citrulline and arginine
 - 3) Amino acid are not used
 - 4) Ornithine, cnitrulline and fumaric acid
36. Jumping genes in maize were discovered by
- 1) Hugo de Vries
 - 2) Barbara Mc Clintock
 - 3) TH Morgan
 - 4) Mendel
37. A bacterium divides after every 35 min., if a culture containing 10^5 cells per ml is grown, then cell concentration per ml after 175 min. will be
- 1) 175×10^5
 - 2) 125×10^5
 - 3) 48×10^5
 - 4) 32×10^5
38. Most accepted theory for ascent of sap is
- 1) capillarity theory
 - 2) root pressure theory
 - 3) pulsation theory
 - 4) transpiration pull
39. During emergency which of the following hormone is secreted?
- 1) Aldosterone
 - 2) Thyroxine
 - 3) Adrenaline
 - 4) Calcitonin
40. Synsacrum of fowl consists of about
- 1) 29 vertebrae
 - 2) 3 vertebrae

- 3) 16 vertebrae
- 4) single vertebrae

41. 'Mammalian thymus' is mainly concerned with

- 1) regulation of body temperature
- 2) regulation of body growth
- 3) immunological functions
- 4) secretion of thyrotropin

42. Chromosome complement with $2n - 1$ is called

- 1) monosomy
- 2) nullisomy
- 3) trisomy
- 4) tetrasomy

43. In blood, CO_2 is transported majorly as

- 1) sodium carbonate
- 2) carboxyhaemoglobin
- 3) bicarbonate
- 4) CO_2 as such

44. Kupffer cells are present in

- 1) liver
- 2) small intestine
- 3) pancreas
- 4) thyroid gland

45. Polyp phase is absent in

- 1) Hydra
- 2) Aurelia
- 3) Physalia
- 4) Obelia

46. Paraffin wax is

- 1) ester
- 2) acid
- 3) monohydric alcohol
- 4) cholesterol

47. In rabbit, head of epididymis present at the head of the testis is called

- 1) vas deferens

- 2) cauda epididymis
- 3) gubernaculum
- 4) caput epididymis

48. Tendons and ligaments are specialized types of

- 1) nervous tissue
- 2) muscular tissue
- 3) epithelial tissue
- 4) connective tissue

49. Initiation codon is

- 1) UUU
- 2) UGA
- 3) AUG
- 4) UAG

50. Duramen is present in

- 1) inner region of secondary wood
- 2) part of sap wood
- 3) outer region of secondary wood
- 4) region of pericycle

51. Which of the following is a transparent tissue?

- 1) Tendon
- 2) Fibrous cartilage
- 3) Hyaline cartilage
- 4) All of these

52. In plants, water supply is due to

- 1) osmosis
- 2) imbibition
- 3) guttation
- 4) adhesion force

53. Calyptra is derived from

- 1) archegonia
- 2) capsule
- 3) antheridia
- 4) columella

54. 'Turbellarians' are free living

- 1) nematodes
- 2) cestodes
- 3) flat worms
- 4) trematodes

55. Agar-agar is obtained from

- 1) Chlorella
- 2) Spirogyra
- 3) Ulothrix
- 4) Gelidium

56. Which of the following is the largest gland in an adult man?

- 1) Thymus
- 2) Liver
- 3) Thyroid
- 4) Pancreas

57. The trisomy for 21st chromosome is called

- 1) Down's syndrome
- 2) Turner's syndrome
- 3) Sickle cell anaemia
- 4) Klinefelter's syndrome

58. Leaf abscission is caused by

- 1) ABA
- 2) cytokinin
- 3) auxin
- 4) gibberellin

59. Animals undergoes inactive stage during winter, is known as

- 1) aestivation
- 2) hibernation
- 3) adaptation
- 4) acclimatization

60. Which of the following variations are temporary and have nothing to do with the last or next generation?

- 1) Hereditary variations
- 2) Discontinuous variations
- 3) Environmental variations
- 4) None of these

61. Streptomycin is obtained from

- 1) Streptomyces griseus
- 2) S. aureofaciens
- 3) S. venezuelae

4) *S. ramosus*

62. Which of the following provides most evident proof of evolution?

- 1) Fossils
- 2) Morphology
- 3) Embryo
- 4) Vestigial organs

63. The number of hydrogen bonds between adenine and thymine in a DNA molecule is

- 1) two
- 2) three
- 3) four
- 4) eight

64. In *Pheretima*, septa are absent between which segments?

- 1) 3/4 and 9/10
- 2) 4/5 and 8/9
- 3) 5/6 and 7/8
- 4) 7/8 and 6/7

65. The islets of Langerhans are found in

- 1) pancreas
- 2) stomach
- 3) liver
- 4) alimentary canal

66. In cell cycle, during which phase, chromosomes are arranged in equatorial plate?

- 1) Metaphase
- 2) Anaphase
- 3) Telophase
- 4) Prophase

67. LH and FSH are collectively called

- 1) oxytocin
- 2) somatotropins
- 3) luteotropic
- 4) gonadotropins

68. In which form does the food transported in plants?

- 1) Sucrose
- 2) Fructose
- 3) Glucose

4) Lactose

69. A eukaryotic gene contains two kinds of base sequences. Which of these plays an important role in protein synthesis?

- 1) Introns
- 2) Exons
- 3) Both (1) and (2)
- 4) None of these

70. The embryo at 16 celled stage is known as

- 1) morula
- 2) gastrula
- 3) blastula
- 4) blastomere

71. Which enzyme converts glucose into alcohol?

- 1) Zymase
- 2) Diastase
- 3) Invertase
- 4) Lipase

72. Which of the following plant product is the hardest?

- 1) Lignin
- 2) Cutin
- 3) Suberin
- 4) Sporopollenin

73. The function of pineal body is to

- 1) lighten the skin colours
- 2) control sexual behaviour
- 3) regulates the period of puberty
- 4) All of the above

74. The soil which is transported by wind is known as

- 1) colluvial
- 2) eolian
- 3) aluvial
- 4) galcial soil

75. Lady finger belongs to family

- 1) Malvaceae
- 2) Cucurbitaceae

- 3) Liliaceae
- 4) Brassicaceae

76. Decomposers are

- 1) autotrophs
- 2) autoheterotrophs
- 3) organotrophs
- 4) heterotrophs

77. The leucocytes contain which of the following in large quantity?

- 1) Basophils
- 2) Neutrophils
- 3) Eosinophils
- 4) Monocytes

78. Rh factor is present in

- 1) all vertebrates
- 2) all mammals
- 3) all reptiles
- 4) man and rhesus monkey only

79. What is the main cause for the extinction of some species in tropical forest?

- 1) Deforestation
- 2) Afforestation
- 3) Pollution
- 4) Soil erosion

80. The group of Anamniota includes

- 1) reptiles and birds
- 2) birds and mammals
- 3) fishes and amphibians
- 4) reptiles and mammals

81. Lichen is the pioneer vegetation on which succession?

- 1) Hydrosere
- 2) Lithosere
- 3) Psammosere
- 4) Xerosere

82. Among the following, colonial insects are

- 1) locusts
- 2) mosquitoes

- 3) white ants
- 4) bed bug

83. Which of the following is important for muscle contraction and nerve impulse transmission?

- 1) Ca^{2+} ions
- 2) Mg^{2+} ions
- 3) Both (1) and (2)
- 4) Fe^{2+} ions

84. Thigmotaxis is not shown by

- 1) Paramecium
- 2) Amoeba
- 3) Ascaris
- 4) Hydra

85. Changes that allow the conversion of larva into adult, is called

- 1) metagenesis
- 2) alternation
- 3) metamorphosis
- 4) metastasis

86. 'Clamp connections' are observed in

- 1) Basidiomycetes
- 2) Zygomycetes
- 3) Ascomycetes
- 4) Oomycetes

87. DNA element with ability to change position is called

- 1) cistron
- 2) transposon
- 3) intron
- 4) recon

88. The highest cranial capacity is/was present in

- 1) Java man
- 2) Peking man
- 3) Handy man
- 4) Modern man

89. Which is correctly matched?

- 1) Apiculture - Honey bee

- 2) Pisciculture - Silk moth
- 3) Sericulture - Fish
- 4) Aquaculture - Mosquito

90. Law of limiting factors was given by

- 1) Leibig
- 2) Blackman
- 3) Calvin
- 4) Arnon

91. The presence of diversity at the junction of territories of two different habitats is known as

- 1) bottle neck effect
- 2) edge effect
- 3) junction effect
- 4) Pasteur effect

92. In *Cycas*, pollination takes place in

- 1) 3 celled stage
- 2) 4 celled stage
- 3) 2 celled stage
- 4) 1 celled stage

93. Which of the following is not vestigial in man?

- 1) Tail vertebrae
- 2) Nails
- 3) Nictitating membrane
- 4) Vermiform appendix

94. L-shaped chromosomes are also called

- 1) acrocentric
- 2) telocentric
- 3) sub-metacentric
- 4) None of these

95. The characteristic larva of phylum - 'Coelenterata' is

- 1) planula
- 2) cysticercus
- 3) rhabdiform
- 4) wriggler

96. Energy transferred from one trophic level to another is

- 1) 5%
- 2) 10%
- 3) 15%
- 4) 20%

97. Induction of flowering by low temperature treatment is

- 1) vernalization
- 2) cryobiology
- 3) photoperiodism
- 4) pruning

98. Double fertilization occurs among

- 1) algae
- 2) bryophytes
- 3) angiosperms
- 4) gymnosperms

99. Programmed cell death is scientifically termed as

- 1) autotomy
- 2) cell lysis
- 3) apoptosis
- 4) None of these

100. Who is known as "father of Endocrinology"?

- 1) RH Whittaker
- 2) Pasteur
- 3) Einthoven
- 4) Thomas Addison

Answer Key

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