

Paper-1

Zoology

1. The expression of genes for the production of milk in females only is :

- 1) sex-linked trait
- 2) Y-linked trait
- 3) sex limited trait
- 4) sex influenced trait



2. Podocytes are the cells present in :

- 1) neck of nephron
- 2) wall of glomerular capillaries
- 3) outer wall of Bowman's capsule
- 4) inner wall of Bowman's capsule

3. In malarial parasite, which of the following is released in blood to cause chills fever ?

- 1) Schuffner's dot
- 2) Haemozoin
- 3) Hematin
- 4) Hematocrin

4. LH and FSH are collectively called :

- 1) oxytocin
- 2) lutetrophic
- 3) somatotrophins
- 4) gonadotrophins

5. Which of the following is secreted by mast cells ?

- 1) Serotonin
- 2) Heparin
- 3) Histamine
- 4) All of these

6. In Ascaris, the coelom is :

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



- 4) haemocoelom
7. In earthworm, neurons are :
- 1) sensory only
 - 2) motor only
 - 3) associated only
 - 4) all of these
8. In human zygote, the male sex is determined by :
- 1) whether mother gets good nutrition
 - 2) whether father is stronger than mother
 - 3) strength of male chromosome
 - 4) required composition of chromosomes
9. In which of the following animals, respiration occurs without any respiratory organ ?
- 1) Fish
 - 2) Frog
 - 3) Cockroach
 - 4) Earthworm
10. 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
11. In Mollusca, eye is present over a stalk, called :
- 1) ostracum
 - 2) operculum
 - 3) osphradium
 - 4) ommatophores
12. The trisomy for 21st chromosome is called :
- 1) Down's syndrome
 - 2) Turner's syndrome
 - 3) Klinefelter's syndrome
 - 4) Sickle cell anaemia
13. Who is the 'Father of Endocrinology' ?
- 1) Whittaker
 - 2) Einthoven
 - 3) Pasteur



4) T. Addison

14. The putrefying bacteria are present in :

- 1) appendix
- 2) intestine
- 3) stomach
- 4) colon

15. Lymphoid tissue is found in :

- 1) thymus
- 2) tonsils
- 3) lymph nodes
- 4) all of these

16. The oxygen dissociation curve is :

- 1) sigmoid
- 2) slope
- 3) parabola
- 4) straight line

17. In rabbit end of a long bone is connected to another by :

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

18. Animals having a built-in thermostat to maintain constant body temperature are known as :

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

19. Mammalian thymus is mainly concerned with :

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

20. Which of the following pair of organisms are uricotelic ?

- 1) Birds and insects
- 2) Reptiles and mammals
- 3) Bony fishes and lizards

4) Cartilaginous fishes and mammals

21. In frog's heart, there are cardiac muscles which consists of fibres called :

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

22. In Klinefelter's syndrome, the sex-chromosome complement is :

- 1) XXY
- 2) XYY
- 3) XY
- 4) XX

23. Choose the correct combination :

- 1) Annelida and Porifera-phyla
- 2) Oligochaeta and Arthropoda-phyla
- 3) Mollusca and Hydrozoa-classes
- 4) Aves and Chordata-classes

24. The abiogenesis occurred about how many billion years ago ?

- 1) 1.2 billion
- 2) 1.5 billion
- 3) 2.5 billion
- 4) 3.5 billion

25. In cockroach, larval characters and nymphal characters are maintained by :

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

26. Thigmotaxis is shown by :

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

27. The intermediate host of Schistosoma is :

- 1) snail
- 2) mosquito
- 3) house fly
- 4) lion

28. In earthworm, female genital opening is present in the segment :



1) 10

2) 13

3) 14

4) 18

29. Choose the correct pair :

(a)	Apiculture	honey bee
(b)	Sericulture	fish
(c)	Pisciculture	silk worm
(d)	Aquaculture	lac insect

1) a

2) b

3) c

4) d

30. Turbellarians are free living :

- 1) nematodes
- 2) annelids
- 3) trematodes
- 4) flatworms

31. Rh factor is present in :

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



32. Pacemaker is :

- 1) sinu-auricular node
- 2) atrio-ventricular node
- 3) sino-ventricular node
- 4) ventriculo-atrial node

33. In coelentrates, characteristic larva is :

- 1) planula
- 2) rhabditiform
- 3) oncosphere
- 4) cysticercus



34. The islets of Langerhans are found in :

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

35. Enterokinase is a :

- 1) bile juice
- 2) intestinal juice

- 3) pancreatic enzyme
- 4) pancreatic hormone



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36. In Amoeba, contractile vacuole is present in

- 1) near the advancing end
- 2) near the trailing end
- 3) at the middle of the body
- 4) anywhere inside the body

37. In sex linkage, the speciality is :

- 1) atavism
- 2) reversion
- 3) gene flow
- 4) criss-cross inheritance

38. During strenuous exercise, which of the following changes occur ?

- 1) Glucose is converted into glycogen
- 2) Glucose is converted into pyruvic acid
- 3) Starch is converted into glucose
- 4) Pyruvic acid is converted into lactic acid

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

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

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

- 1) vas deferens
- 2) cauda epididymis
- 3) gubernaculum
- 4) caput epididymis

41. Among the following, colonial insects are :

- 1) locusts
- 2) white ants
- 3) bed bugs
- 4) mosquitoes



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42. During emergency, which of the following hormones is important ?

- 1) Aldosterone
- 2) Adrenaline

- 3) Thyroxine
- 4) Calcitonin

43. Which of the following is a transparent tissue ?

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



44. Vitamin-D is synthesised in skin by the action of sunlight on :

- 1) cephalo-cholesterol
- 2) 7-hydroxy cholesterol
- 3) cholesterol
- 4) all of the above

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

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

46. 'Alloxan' destroys :

- 1) STH cells
- 2) β -cells of islets of Langerhans
- 3) cells of Sertoli
- 4) cells of Leydig



47. Which of the following cell type is capable of giving rise to other cell types in sponges ?

- 1) Pinacocytes
- 2) Thesocytes
- 3) Archaeocytes
- 4) Collencytes

48. Analogous organs have a :

- 1) common embryonic origin but perform different functions
- 2) different embryonic origin and perform different functions
- 3) common embryonic origin and perform similar functions
- 4) different embryonic origin but perform similar functions

49. 5th cranial nerve of frog is called :

- 1) optic nerve
- 2) vagus nerve



- 3) trigeminal nerve
- 4) ophthalmic nerve

50. In Amoeba, the conversion of plasma gel into plasma sol at the trailing end and the conversion of plasma sol into plasma gel at the advancing end explains :

- 1) Contraction theory
- 2) attachment to substratum
- 3) continuous viscosity changes
- 4) theory of rolling movement

Botany

51. Lysosomes are formed by :

- 1) endoplasmic reticulum
- 2) mitochondrion
- 3) Golgi membrane
- 4) both (1) and (2)



52. Starch is stored in potato tuber because sugar is :

- 1) synthesized in the leaf
- 2) changed to starch in tuber
- 3) transported from leaf to tuber
- 4) produced in tuber

53. The leaves of Mimosa pudica drop down when touched, it is due to :

- 1) photonasty
- 2) seismonasty
- 3) nyctinasty
- 4) epinasty

54. Liquid food drinking is :

- 1) imbibition
- 2) pinocytosis
- 3) phagocytosis
- 4) none of the above



55. Induction of cell division and delay in senescence are due to :

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

56. The secretory function of cell is mainly performed by :

- 1) lysosomes
- 2) spherosomes
- 3) peroxisomes
- 4) Golgi complex



57. The arrangement of megaspores in a tetrad in gymnosperm is :

- 1) decussate
- 2) tetrahedral
- 3) linear
- 4) isobilateral

58. A pome fruit is said to be false because :

- 1) the pericarp is inconspicuous
- 2) the endocarp is cartilaginous
- 3) fruit is derived from superior ovary
- 4) fruit is present in fleshy edible thalamus



59. Tortion of carpels is seen in the family :

- 1) Cruciferae
- 2) Liliaceae
- 3) Solanaceae
- 4) Asteraceae

60. The change occurring in organisms, which only reproduce vegetatively, is :

- 1) genetic
- 2) morphological
- 3) both genetic and morphological
- 4) neither genetic nor morphological

61. According to fluid mosaic model, plasma membrane is composed of :

- 1) phospholipids and integral proteins
- 2) phospholipids and hemicellulose
- 3) phospholipids and oligosaccharides
- 4) phospholipids and extrinsic as well as intrinsic protein

62. Most of the hydrolytic enzymes of lysosomes function at :

- 1) acidic pH
- 2) basic pH
- 3) neutral pH
- 4) only pH



63. ATP synthesis occurs in : _____

63. ATP synthesis occurs in :

- 1) chloroplast
- 2) mitochondria
- 3) golgi apparatus
- 4) endoplasmic reticulum



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64. The part of the spindle left after the chromosomes have moved to the poles is :

- 1) centriole
- 2) centrosome
- 3) phragmoplast
- 4) none of these

65. The first intermediate formed during photosynthesis is :

- 1) fructose 1, 6 diphosphate
- 2) ribulose 1, 5 diphosphate
- 3) xylulose 5-phosphate
- 4) phosphoglyceraldehyde



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66. Guttation is due to :

- 1) root pressure
- 2) osmosis
- 3) transpiration pull
- 4) cohesive force

67. Monerans devoid of cell wall are :

- 1) actinomycetes
- 2) cyanobacteria
- 3) mycoplasma
- 4) eubacteria



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68. Insectivorous plants grow in soils which are deficient in .

- 1) nitrogen
- 2) carbohydrate
- 3) vitamin-C
- 4) calcium

69. In an upright pyramid of biomass, the herbivores occupy the position :

- 1) 4
- 2) 3
- 3) 2
- 4) 1

70. In Funaria, calyptra is derived from :

- 1) capsule
- 2) columella

- 3) antheridium
- 4) archegonium



71. In a river, if its BOD percentage is high, the

- 1) river is polluted
- 2) river is not polluted
- 3) river is dry
- 4) none of the above

72. Nucleolus is the site for the synthesis of :

- 1) ribosomes
- 2) m-RNA
- 3) t-RNA
- 4) DNA

73. Meiosis involves :

- 1) two nuclear divisions and one chromosomal division
- 2) one nuclear division and one chromosomal division
- 3) one nuclear division and two chromosomal divisions
- 4) two nuclear divisions and two chromosomal divisions

74. Inulin is a :

- 1) lipid
- 2) protein
- 3) human insulin
- 4) polysaccharide



75. The sequence of cell cycle is :

- 1) S, M, G₁ and G₂
- 2) G₁, G₂, S and M
- 3) M, G₁, G₂ and S
- 4) G₁, S, G₂ and M

76. In Krebs cycle, a 6 C compound is formed by the combination of acetyl Co-A and :

- 1) malic acid
- 2) citric acid
- 3) succinic acid
- 4) oxaloacetic acid

77. Lomentum is a term used to describe a kind of :

- 1) fruit

- 2) seed
- 3) inflorescence
- 4) outgrowth from seed



78. Histones are :

- 1) acidic proteins
- 2) basic proteins
- 3) mucoprotein
- 4) glycoproteins



79. Aerosols reduce primary productivity by :

- 1) decreasing O₂ concentration in atmosphere
- 2) reducing photosynthesis
- 3) competing with CO₂
- 4) being toxic to chloroplasts

80. Genetically engineered bacteria is used for the production of :

- 1) thyroxin
- 2) human insulin
- 3) epinephrine
- 4) cortisol



81. The term meiosis was coined by :

- 1) Blackman
- 2) Flemming
- 3) Robertson
- 4) Farmer and Moore

82. Which ecosystem has the highest primary productivity ?

- 1) Pond
- 2) Lake
- 3) Desert
- 4) Forest

83. In Pinus, male cone bears a large number of :

- 1) ligules
- 2) anthers
- 3) microsporophylls
- 4) megasporophylls



84. Amyloplasts are plastids that store :

- 1) proteins
- 2) fats
- 3) starch
- 4) glycogen



85. The positive evidence of aquatic ancestry of bryophytes is indicated by :

- 1) ciliated sperms
- 2) gametophytic body
- 3) biflagellate gametes
- 4) peristomial teeth



86. The name 'sarcode' was given to living _____,

- 1) Robert Brown
- 2) Robert Hooke
- 3) Dujardin
- 4) Purkinje

87. Which of the following statements is true ?

- 1) All enzymes are proteins
- 2) All proteins are enzymes
- 3) All enzymes are not proteins
- 4) All enzymes and hormones are proteins

88. Bacteria do not possess :

- 1) capsule
- 2) ribosomes
- 3) mitochondria
- 4) plasma membrane



89. Thylakoids occur inside :

- 1) nucleus
- 2) chloroplast
- 3) Golgi apparatus
- 4) mitochondria

90. The element present in thyroxin is obtained from :

- 1) Laminaria
- 2) Polysiphonia
- 3) Porphyra
- 4) Gelidium



91. Stages in proper sequence of prophase

- 1) zygotene, leptotene, pachytene, diakinesis and diplotene
- 2) leptotene, zygotene, pachytene, diplotene and diakinesis
- 3) leptotene, pachytene, zygotene, diakinesis and diplotene
- 4) diplotene, diakinesis, pachytene, zygotene and leptotene

92. Apomixis is a type of reproduction that results in the development of :

- 1) embryo from nucellus
- 2) embryo from endosperm
- 3) new organism without fusion of gametes
- 4) none of the above

93. Competition for food, light and space is most severe between two :

- 1) closely related species growing in different niches
- 2) distantly related species growing in different niches
- 3) closely related species growing in same niches
- 4) distantly related species growing in same niches

94. Monocarpellary ovary, diadelphous androecium and marginal placentation are characteristic of family :

- 1) Cruciferae
- 2) Compositae
- 3) Liliaceae
- 4) Papilionaceae



95. In plants, the induction of flowering by low temperature treatment, is called :

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

96. Late blight disease of potato is caused by :

- 1) Ustilago
- 2) Phytophthora
- 3) Synchytrium
- 4) Cercospora



97. Which one is called amphibian plant ?

- 1) Polygonum
- 2) Wolffia
- 3) Casuarina
- 4) None of these



98. Censer mechanism of seed dispersal is found in :

- 1) Papaveraceae
- 2) Liliaceae
- 3) Leguminosae
- 4) Rosaceae

99. The energy liberated during the conversion of ATP into ADP is :

- 1) 73000 cal/mol
- 2) 686000 cal/mol
- 3) 8000 cal/mol
- 4) 7300 cal/mol

100. Amitosis is :

- 1) division involving spindle formation
- 2) division involving formation of chromosome bridges
- 3) division in which chromosomes are unequally distributed
- 4) cleavage of nucleus without recognisable chromosome distribution



Answer Key

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