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Subject Code :

2 9

Test Booklet No. : 01228

TEST BOOKLET

ZOOLOGY

Time Allowed : 2 (Two) Hours

Full Marks : 200

INSTRUCTIONS

1. The name of the Subject, Roll Number as mentioned in the Admission Certificate, Test Booklet No. and Subject Code shall be written legibly and correctly in the space provided on the Answer Sheet with black ball pen.
2. Space provided for Series in the Answer Sheet is not applicable for Optional Subject. So the space shall be left blank.
3. All questions carry equal marks. Your total marks will depend only on the number of correct responses marked by you in the Answer Sheet.
4. No candidate shall be admitted to the Examination Hall/Room 20 minutes after commencement of distribution of the paper. The Supervisor of the Examination Hall/Room will be the time-keeper and his/her decision in this regard is final.
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11. Smoking inside the Examination Hall/Room is strictly prohibited.
12. This Test Booklet contains one page for Rough Work at the end.

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CEE(P)-2015

ZOOLOGY

1. Schizont stage of *Plasmodium vivax* in man is found in

- (A) erythrocytes
- (B) erythrocytes and liver cells
- (C) liver cells only
- (D) erythrocytes, liver cells and spleen

2. Evolutionary sequence of canal system in sponges is

- (A) sycon-ascon-leucon
- (B) leucon-sycon-ascon
- (C) ascon-sycon-leucon
- (D) sycon-leucon-ascon

3. Gonads of Obelia occur

- (A) in hydrula stage
- (B) in bases of tentacles of medusa
- (C) on blastocyst
- (D) in radial canal of medusa

4. A rhabditiform larva is found in the life cycle of

- (A) *Hydra*
- (B) *Ascaris*
- (C) tapeworm
- (D) liver fluke

5. Sexual dimorphism is distinct in *Ascaris*, because of

- (A) body colour
- (B) buccal margins
- (C) pineal setae
- (D) lips

6. Common feature of earthworm and cockroach is

- (A) hermaphroditism
- (B) ventral nerve chord
- (C) moulting of cuticle
- (D) excretion by nephridia

7. In *Palaemon*, statocyst is situated on the

- (A) antennule
- (B) maxillae
- (C) maxillulae
- (D) antennae

8. Golgi body is found in

- (A) RBC of man
- (B) all the cells
- (C) bacterial cells
- (D) all cells, except RBC and bacterial cells

9. Presence of choanocytes is the characteristic of

- (A) Annelida
- (B) Porifera
- (C) Coelenterata
- (D) None of the above

10. The coral species which is extensively used in jewellery is

- (A) *Corallium rubrum*
- (B) *Anthocodium indicum*
- (C) *Gorgonia flagellum*
- (D) *Fungia* sp.

11. Spicules in sponges are secreted by

- (A) collenocytes
- (B) archaeocytes
- (C) scleroblasts
- (D) pinococytes

12. Cysticercus larva is found in

- (A) *Scypha*
- (B) *Obelia*
- (C) *Taenia*
- (D) *Fasciola*

13. Ambulacral system is basically found in

- (A) sponges
- (B) coelenterates
- (C) aquatic arthropods
- (D) echinodermata

14. In sponges, nutrition, respiration and excretion depend upon

- (A) circulatory system
- (B) ambulacral system
- (C) haemocoelomic system
- (D) canal system

15. Larva of *Schistosoma* is

- (A) cercaria
- (B) planula
- (C) cysticercus
- (D) Muller's larva

16. Which one of the following annelids is commonly known as the sea mouse?

- (A) *Aphrodite*
- (B) *Aplysia*
- (C) *Polynoe*
- (D) *Chaetopterus*

17. The typhlosole of earthworm is related with

- (A) excretion
- (B) respiration
- (C) reproduction
- (D) absorption

18. Proboscis of butterfly is formed from

- (A) paraglossa
- (B) labrum
- (C) maxilla
- (D) mandible

19. The ophiopluteus larva of Echinodermata belongs to the class

- (A) Holothuroidea
- (B) Ophiuroidea
- (C) Echinoidea
- (D) Asteroidea

20. In pigeon, milk is secreted by both sexes through

- (A) liver
- (B) gizzard gland
- (C) crop gland
- (D) salivary gland

21. Which one of the following is a fish?

- (A) Sea cow
- (B) Sea cucumber
- (C) Sea horse
- (D) Sea urchin

22. *Petromyzon* is not a true fish because of

- (A) absence of median fins
- (B) presence of gills
- (C) absence of paired fins and true jaws
- (D) absence of operculum

23. Desmosomes are concerned with

- (A) cell adherence
- (B) cell division
- (C) cellular excretion
- (D) cytolysis

24. Spindle apparatus is made up of

- (A) endoplasmic reticulum
- (B) polysome
- (C) microtubule
- (D) spherosome

25. Which of the following types of gametes are produced from an animal with RrYY genotype?

(A) RY, Ry, rY, ry

(B) RY, rY

(C) RY, RY, Ry, rY

(D) rY, ry, Ry, ry

26. Frameshift mutation occurs, when

(A) base is added

(B) base is deleted

(C) base is added or deleted

(D) anticodons are not present

27. The successive nucleotides of DNA are covalently linked through

(A) peptide bond

(B) hydrogen bond

(C) glycosidic bond

(D) phosphodiester bond

28. Wheel organ is found in

(A) *Ascidia*

(B) *Balanoglossus*

(C) *Amphioxus*

(D) Annelids

29. In which one of the following fishes, male shows parental care?

(A) *Anabas*

(B) *Labeo*

(C) Sea horse

(D) *Synaptula*

30. Bidder's organ in frog is attached to

(A) liver

(B) kidney

(C) ovary

(D) lung

31. Ductus caroticus is present in the arterial system of

(A) toad

(B) snake

(C) calotes

(D) crocodile

32. An aperture called 'foramen of panizzae' is present in

(A) middle ear of reptile

(B) cranium of reptile

(C) heart of crocodile

(D) heart of rabbit

33. Eutherians are characterized by

- (A) hairy skin
- (B) presence of teats
- (C) ovoviviparity
- (D) true placentation

34. Crossing-over takes place in which stage of meiosis-I?

- (A) Leptotene
- (B) Zygotene
- (C) Pachytene
- (D) Diplotene

35. Ecological pyramids were given by

- (A) Tansley
- (B) Elton
- (C) Odum
- (D) Haeckel

36. The 10% energy transfer law in food chain was first given by

- (A) Lindeman
- (B) Tansley
- (C) Elton
- (D) Rawkiaer

37. Eutrophication is

- (A) excess oxygen in ponds
- (B) abundant fertilizers in lakes
- (C) lack of algae in lakes
- (D) abundant nektons in lakes

38. Cellulose in rabbit is digested in

- (A) stomach
- (B) rumen
- (C) buccal cavity
- (D) caecum

39. The terminal electron receptor in aerobic respiration is

- (A) CO_2
- (B) O_2
- (C) H_2
- (D) NADH

40. Which step of translation does not consume a high-energy phosphate bond?

- (A) Translocation
- (B) Amino acid activation
- (C) Peptidyl transferase reaction
- (D) Aminoacyl t-RNA binding to A-site

41. Anterior abdominal vein in frog is formed by union of
- right and left pelvic veins
 - right and left sciatic veins
 - right and left femoral veins
 - right and left dorsolumbar veins
42. K_m value of an enzyme is the substrate concentration at which the reaction attains
- $2 V_{max}$
 - $\frac{1}{2} V_{max}$
 - $4 V_{max}$
 - $\frac{1}{4} V_{max}$
43. The fats absorbed from the gut are transferred to blood in the form of
- chylomicron
 - micelles
 - chemomicrons
 - liposomes
44. 'Bundle of His' is a group of
- ganglia
 - nerve fibres
 - muscle fibres
 - connective tissues
45. Myxedema and Graves' disease are due to improper functioning of
- pituitary
 - adrenal cortex
 - thyroid
 - thymus
46. One of the *ex-situ* conservation methods for endangered species of plants and animals is
- wildlife sanctuary
 - biosphere reserve
 - national park
 - cryopreservation
47. Haversian canals are found in
- kidney
 - liver
 - bone
 - cartilage
48. Pneumatic bones are found in
- house lizard
 - frog's tadpole
 - flying fish
 - pigeon
49. Gorilla, chimpanzee, man and monkey belong to the same
- species
 - genus
 - family
 - order

50. The function of oxyntic cell is to secrete

- (A) HCl in stomach
- (B) bile
- (C) proteolytic enzymes
- (D) lipolytic enzymes

51. Chloride shift is essential for transport of

- (A) CO_2 and O_2
- (B) N_2
- (C) CO_2 only
- (D) O_2 only

52. The snakes and birds are mainly

- (A) ammonotelic
- (B) amiotelic
- (C) ureotelic
- (D) uricotelic

53. The number of RBCs in man increases if someone lives at higher altitude because

- (A) there is more oxygen
- (B) there is less oxygen
- (C) there are no germs in air
- (D) more heat is needed to warm the body

54. The conduction of impulse from SA node moves to

- (A) AV node
- (B) bundle of His
- (C) Purkinje fibres
- (D) chordae tendinae

55. The most abundant granulocyte in human blood is

- (A) basophil
- (B) eosinophil
- (C) neutrophil
- (D) monocyte

56. The immediate predecessor of spermatids is

- (A) spermatogonia
- (B) primary spermatocyte
- (C) secondary spermatocyte
- (D) sperm mother cell

57. Fertilization of ova in human takes place in

- (A) ovary
- (B) vagina
- (C) uterus
- (D) fallopian tube

58. The eggs of egg-laying mammals are

- (A) macrolecithal
- (B) alecithal
- (C) mesolecithal
- (D) telolecithal

59. The tertiary membranes of egg are secreted by the

- (A) egg itself
- (B) follicular cells
- (C) oviduct
- (D) uterus

60. Which is an exception to Mendel's law?

- (A) Purity of gametes
- (B) Dominance
- (C) Linkage and crossing-over
- (D) Independent assortment

61. Archenteron is formed during

- (A) morula stage
- (B) blastula stage
- (C) late gastrula stage
- (D) early gastrula stage

62. Turner's syndrome is caused due to sex chromosomal composition of

- (A) XO
- (B) XXY
- (C) XXX
- (D) XYY

63. Darwin's finches are a good example of

- (A) convergent evolution
- (B) industrial melanism
- (C) connecting link
- (D) adaptive radiation

64. Which of the following is secondary pollutant?

- (A) NO
- (B) NO₂
- (C) SO₂
- (D) PAN

65. A taxon which is facing an extremely high risk of extinction in the wild in immediate future is known as

- (A) rare
- (B) vulnerable
- (C) endangered
- (D) critically endangered

66. In a mammalian embryo, the extra-embryonic membranes arise from

- (A) inner cell mass
- (B) formative cells
- (C) trophoblast
- (D) follicle cells

67. Removal of spleen from the human body leads to

- (A) decrease in antibody formation
- (B) increase in RBC production
- (C) decrease in platelet formation
- (D) decrease in plasma formation

68. Which one of the following elements is required in coagulation of blood?

(A) Calcium

(B) Iron

(C) Potassium

(D) Sodium

69. A person with antigen A and B but without any antibody belongs to the blood group

(A) A

(B) B

(C) AB

(D) O

70. *Seymouria*, a fossil reptile, is a missing link between

(A) fishes and amphibians

(B) amphibians and reptiles

(C) reptiles and mammals

(D) None of the above

71. The Wild Life (Protection) Act was passed in the year

(A) 1972

(B) 1982

(C) 1992

(D) 1962

72. In ornithine cycle, which pair of the following wastes are removed from the blood?

(A) CO_2 and urea

(B) Ammonia and urea

(C) CO_2 and ammonia

(D) Urea and sodium salt

73. The honeybees exhibit a particular dance to communicate the location of food. This is known as

(A) tap dance

(B) waggle dance

(C) break dance

(D) round and waggle dance

74. Who stated that 'life originated from simple amino acids'?

(A) Oparin

(B) Muller

(C) Urey and Muller

(D) De Vries

75. Which of the following is used for dating the bones?

(A) C^{14}

(B) I^{121}

(C) P^{32}

(D) All of the above

76. The theory of biogenetic law explains 'ontogeny repeats phylogeny'. It was propounded by

(A) Weissman

(B) Lamarck

(C) Haeckel

(D) Harvey

77. Derivative of sweat gland is

(A) Moll's gland

(B) scent gland

(C) sebaceous gland

(D) mammary gland

78. The basis of karyotaxonomy is

(A) number of nucleoli

(B) sedimentation rate of ribosomes

(C) chromosome banding

(D) chromosome number

79. The type of fossil where hard parts like bone or trunks of trees are preserved is known as

(A) petrification

(B) mould

(C) compression

(D) pseudofossil

80. Diploblastic acoelomate condition is found in

(A) *Planaria*

(B) *Rotifer*

(C) *Ascaris*

(D) sea anemone

81. Drones in honeybee colony are

(A) fertile males

(B) fertile females

(C) sterile males

(D) sterile females

82. Burachapari Wildlife Sanctuary is located in

(A) Jorhat district

(B) Dibrugarh district

(C) Lakhimpur district

(D) Sonitpur district

83. The silk thread obtained from silk moth is the product of

(A) salivary gland of larvae

(B) cuticle of adult

(C) cuticle of larva

(D) salivary gland of the adult

84. Select the one with wrong class

(A) Sea star : Asteroidea

(B) Sea urchin : Echinoidea

(C) Sea cake : Holothuroidea

(D) Brittle star : Ophiuroidea

85. Lac is produced as

(A) faeces of the lac insect

(B) secretion from the body

(C) excretion from the body

(D) excess food oozing out of the body

86. The functional adult kidney of reptile is

- (A) pronephros
- (B) metanephros
- (C) mesonephros
- (D) 50% each of mesonephros and metanephros

87. Obturator foramen in rabbit is present in

- (A) skull
- (B) vertebra
- (C) pelvic girdle
- (D) femur

88. Which one of the following is a biologically incompatible marriage?

- (A) Rh-positive man and Rh-negative woman
- (B) Rh-negative man and Rh-negative woman
- (C) Rh-positive man and Rh-positive woman
- (D) Rh-negative man and Rh-positive woman

89. What was the principal missing element in the Darwin's concept of evolution?

- (A) Knowledge of heredity and variation
- (B) Concept of missing links
- (C) Fossil record
- (D) Concrete evidence for the operation of natural selection

90. Corals are

- (A) sedentary sponges
- (B) sedentary ctenophorans
- (C) sedentary ascidians
- (D) free living ctenophorans

91. Which one of the following is not a larval stage of liver fluke?

- (A) Redia
- (B) Cercaria
- (C) Dipinnaria
- (D) Miracidium

92. The infective stage of *Ascaris* is

- (A) fertilized egg
- (B) second-stage larva
- (C) unfertilized egg
- (D) adult worm

93. Honeybees have pollen basket on their

- (A) abdomen
- (B) prothoracic leg
- (C) mesothoracic leg
- (D) metathoracic leg

94. The first larval stage of *Fasciola hepatica* is

- (A) miracidium
- (B) redia
- (C) cercaria
- (D) metacercaria

95. The epidermal glands originate from which layer?

- (A) Stratum granulosum
- (B) Stratum corneum
- (C) Stratum lucidum
- (D) Stratum malpighii

96. Esterase belongs to

- (A) transferase
- (B) hydrolytic enzyme
- (C) oxidation-reduction enzyme
- (D) carboxylating enzyme

97. Mountain sickness results due to

- (A) anaemia hypoxia
- (B) arterial hypoxia
- (C) lack of sufficient Hb
- (D) lack of sufficient RBCs

98. Which of the following foetal membranes is directly connected with blood?

- (A) Allantoic
- (B) Amnion
- (C) Chorion
- (D) Yolk sac

99. The number of cephalic appendages in prawn is

- (A) four pairs
- (B) five pairs
- (C) six pairs
- (D) eight pairs

100. The number of spinal nerves in rat is

- (A) 12 pairs
- (B) 31 pairs
- (C) 33 pairs
- (D) 37 pairs