DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE ASKED TO DO SO

T.B.C. : BAC–60

Test Booklet Series

Serial No. 603140

D

TEST BOOKLET

ZOOLOGY

Time Allowed : 2 Hours

Maximum Marks : 300

INSTRUCTIONS TO CANDIDATES

1. IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS TEST BOOKLET **DOES NOT** HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR ITEMS ETC. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET.
2. ENCODE YOUR OPTIONAL SUBJECT CODE AS MENTIONED ON THE BODY OF YOUR ADMISSION CERTIFICATE AND ADVERTISEMENT AT APPROPRIATE PLACES ON THE ANSWER SHEETS.
3. ENCODE CLEARLY THE TEST BOOKLET SERIES **A, B, C** OR **D** AS THE CASE MAY BE IN THE APPROPRIATE PLACES IN THE ANSWER SHEET USING HB PENCIL.
4. You have to enter your **Roll No.** on the Test Booklet in the Box provided along side. **DO NOT** write *anything else* on the Test Booklet.
5. This Test Booklet contains **120** items (questions). Each item comprises four responses (answers). You will select the response which you want to mark on the Answer Sheet. In case you feel that there is more than one correct response, mark the response which you consider the best. In any case, choose ***ONLY ONE*** response for each item.
6. You have to mark all your responses **ONLY** on the **separate Answer Sheet** provided by using **HB pencil**. See instruction in the Answer Sheet.
7. All items carry equal marks. All items are compulsory. Your total marks will depend only on the number of correct responses marked by you in the Answer Sheet. For each question for which a wrong answer is given by you, **one fifth (0·20) of the marks assigned to that question will be deducted as penalty.**
8. Before you proceed to mark in the Answer Sheet the responses to various items in the Test Booklet, you have to fill in some particulars in the Answer Sheet as per instructions sent to you with your **Admission Certificate**.
9. After you have completed filling in all your responses on the Answer Sheet and the examination has concluded, you should hand over to the Invigilator the *Answer Sheet*, the Test Booklet issued to you.

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1. Which one is not endangered
   (a) Asiatic wild ass
   (b) Adri Idri
   (c) Lion tailed Macaque
   (d) Addax Antelopes

2. Hot spots of Biodiversity are areas with
   (a) Little biodiversity
   (b) Maximum biodiversity
   (c) Maximum conservation
   (d) Litter conservation

3. Prolonged liberal irrigation of Agricultural fields is likely to create problems of
   (a) Acidity
   (b) Alkalinity
   (c) Salinity
   (d) Metal toxicity

4. Wild Life Protection Act of India was enacted in
   (a) 1952
   (b) 1962
   (c) 1972
   (d) 1982

5. Chipko movement is connected with
   (a) Plant Breeding
   (b) Forest Conservation
   (c) Conservation of Natural Resources
   (d) Project Tiger

6. Flow of energy declines as it passes from lower to higher trophic level. This is explained by
   (a) First law of thermodynamics
   (b) Second law of thermodynamics
   (c) Newton's second law
   (d) Newton's third law

7. Which is correct food chain in grassland
   (a) Grass → Snake → Insect → Deer
   (b) Grass → Wolf → Deer → Buffaloe
   (c) Bacteria → Grass → Rabbit → Wolf
   (d) Grass → Insect → Frog → Snake

8. Grassland with scattered trees is
   (a) Savanna
   (b) Deciduous Forests
   (c) Evergreen Forests
   (d) Tropical Rain Forests

9. Chevron bone is found in
   (a) Reptiles
   (b) Aves
   (c) Mammals
   (d) Amphibians

10. Pituitrin is made up of
   (a) LH + FSH
   (b) Adrenaline + Nor-adrenaline
   (c) Vasopressin + Oxytocin
   (d) None of these

11. Dracula hormone is another name of
   (a) LH
   (b) Melatonin
   (c) Adrenaline
   (d) FSH

12. Long loop of Henle is found in
    (a) Camel
    (b) Rabbit
    (c) Rat
    (d) Human

13. X-zone is found in
    (a) Thyroid gland
    (b) Kidney
    (c) Adrenal gland
    (d) Parathyroid gland

14. Cicatrix is rudimentary in
    (a) Mammals
    (b) Reptiles
    (c) Aves
    (d) Amphibia

15. External ear pinna is characteristic of
    (a) Birds
    (b) Reptiles
    (c) Fish
    (d) Mammals

16. The hormone influences Pegion crop sac secretion is
    (a) LH
    (b) FSH
    (c) PRL
    (d) Testosterone

17. The excretion in birds is
    (a) Urecotelic
    (b) Amminotelic
    (c) Ureotelic
    (d) Guanotelic

18. Foramen of Monro communicates
    (a) Third ventricle with lateral ventricle
    (b) Thalamus with epithalamus
    (c) Third ventricle and infundibulum
    (d) Exoccipital and Occipital

19. Normal stomach is made up of
    (a) Cardiac, Fundus, Pyloric
    (b) Oesophagus, Cardiac, Fundus
    (c) Oesophagus, Cardiac, Pyloric
    (d) Fundus, Oesophagus, Cardiac, Pyloric

20. The deficiency of adrenal cortin results in
    (a) Asthma
    (b) Alzheimer's
    (c) Addison's
    (d) Abnormality

21. The pituitary is called hypophysis and pineal is called
    (a) Epiphysis
    (b) Paraphysis
    (c) Frontal organ
    (d) Parietal organ

22. Sound producing organ in vertebrate is
    (a) Arytenoid
    (b) Larynx
    (c) Glottis
    (d) Cricoid

23. Which horn is characteristic of Antelope
    (a) Prong horn
    (b) Hair horn
    (c) Antlers
    (d) Giraffe horn

24. Mammary gland are modified form of
    (a) Sudorific gland
    (b) Sebaceous gland
    (c) Meibomian gland
    (d) None

25. A Bidder's canal is found in
    (a) Aves
    (b) Reptiles
    (c) Mammals
    (d) Amphibia

26. Synsacrum is characteristic of
    (a) Frog
    (b) Fish
    (c) Lizard
    (d) Bird

27. Poisonous glands are modified form of
    (a) Sublingual gland
    (b) Submaxillary gland
    (c) Parotid gland
    (d) None

28. Pit viper is
    (a) Haemotoxic
    (b) Neurotoxic
    (c) Non-poisonous
    (d) Haemotoxic and Neurotoxic

29. Uropygeal gland is characteristic of
    (a) Frog
    (b) Pigeon
    (c) Rat
    (d) Bat

30. Pecten is present in
    (a) Eye of reptiles
    (b) Eye of mammal
    (c) Eye of bird
    (d) Eye of amphibia

31. Glenoid cavity is made by the bone
    (a) Scapula and coracoid
    (b) Coracoid and sternum
    (c) Suprascapula and scapula
    (d) Coracoid and sepicoracoid

32. Four-chambered heart is present in
    (a) Crocodile
    (b) Snake
    (c) Toad
    (d) Ambystoma

33. Lateralis is the nerve of
    (a) Xth cranial nerve
    (b) VIIIth cranial nerve
    (c) Spinal cord
    (d) Trigeminal nerve

34. Odontoid scale type is
    (a) Cycloid
    (b) Placoid
    (c) Ganoid
    (d) Ctenoid

35. Oral hood helps in
(a) Performing water current
(b) Food intake
(c) Water current and food intake
(d) Sensory organ

36. Retrogressive metamorphosis is found in
(a) Cephalochordates
(b) Urochordates
(c) Hemichordates
(d) Chordates

37. The larval form of hemichordata is
(a) Tornoria larva
(b) Trochophore larva
(c) Nauplius larva
(d) Zoea

38. Balanoglossus is
(a) Burrowing animal
(b) Exclusively marine animal
(c) Burrowing and exclusively marine animal
(d) Fresh water animal

39. _____ larval development seen in Asteria
(a) Brahchiolaria
(b) Tornaria
(c) Auricularia
(d) Pluteus larvae

40. Lytta and _____ are used for making canthardin
(a) Phorima
(b) Mylabris
(c) Epicauta
(d) Bombyx

41. The number of existing species of mammals is estimated by _____ 1946 as 3500
(a) Karl Koopman
(b) Simpson
(c) Maya
(d) Darwin

42. Baer's law was proposed by von Bear in _____
(a) 1792—1876
(b) 1793—1874
(c) 1786—1881
(d) None of the above

43. The pleistocene was the age of _____
(a) Reptiles
(b) Ice
(c) Fishes
(d) Amphibian

44. The infection of _____ worms causes an enlargement of limb, scrotum, mammae
(a) Filaria worm
(b) Bread worm
(c) Pork tapeworm
(d) Whip worm

45. The eggs of cockroach is called _____
    (a) Telolecithal
    (b) Pseudolecithal
    (c) Centrolecithal
    (d) None of the above

46. Genital papillae of the pheretima are lies on the ventral side of each of the _____ segments
    (a) 17^{th} and 18^{th}
    (b) 16^{th} and 17^{th}
    (c) 17^{th} and 20^{th}
    (d) 17^{th} and 19^{th}

47. In Taenia Solium the Mehli's glands are found around the _____
    (a) Junction of oviduct
    (b) Uterus
    (c) Ootype
    (d) Median vitelline

48. In fasciola, the reproductive system is
    (a) Monoceious, one set of complete male and female reproductive organ
    (b) Monoceious, one set of complete male and female organ are found in each mature proglottid
    (c) Comprises few compact gonads, gono ducts and a cuticularized structure
    (d) None of the above

49. When an infected female Anopheles bites a man to suck his blood then along with its saliva it infects the _____ stage of plasmodium into human blood
    (a) Merozoites
    (b) Cryptozoites
    (c) Sporozoites
    (d) Tropozoite

50. _____ is highly poisonous snake
    (a) Cobra
    (b) Green snake
    (c) Rattle snake
    (d) Water snake

51. Polyp reproduces asexually by budding to form _____ in hydra
    (a) medusa
    (b) new polyp
    (c) gonads
    (d) tentacles

52. Cardio-pyloric strand is found in
    (a) Pheretima
    (b) Palaemon
    (c) Periplaneta
    (d) All the above

53. The margin of the mouth in mollusc is called as
    (a) peristome
    (b) aperture
    (c) columellar lip
    (d) epitaeria

54. Amoeba was first discovered by Rosel von Rosenhoff in the year

(a) 1789

(b) 1875

(c) 1775

(d) 1774

55. The scientific name for gauraiya or house sparrow

(a) Passer domestica

(b) Passer splendens

(c) Corvus splendens

(d) Corvus domestica

56. Bread worms are placed under the phylum _____

(a) Pogonophora

(b) Onychophora

(c) Phorarida

(d) Nenatophora.

57. The Family Felidae includes _____

(a) Dogs

(b) Foxes

(c) Lion

(d) Frogs.

58. _____ Species inhabiting different geographical areas

(a) Sympatric species

(b) Biospecies

(c) Allopatric species

(d) Evolutionary species.

59. According to _____ "A taxon is a group of real organisms reorganised as a formal unit at any level of hierarchic classification"

(a) Simpson

(b) Mayor

(c) Linneaus

(d) Black Weldler.

60. _____ in 1940 introduced the new term "New Systematics"

(a) Ernst Haeckel

(b) Gaspard Bauhin

(c) Sir Julian Huxley

(d) John Ray.

61. Protein having the function of storing amino acids as nutrient is

(a) Casein

(b) Albumin

(c) Collagen

(d) myosin

62. RNA appears in the evolution of life

(a) after DNA

(b) after protein

(c) before DNA and protein

(d) simultaneously with DNA and protein

63. Which one of the following amino acids is a rare amino acid ?

(a) Lysine

(b) Proline

(c) Hydroxylysine

(d) Aspartic acid

64. For the activity of succinic dehydrogenase FAD acts as

(a) Coenzyme

(b) Cofactor

(c) Prosthetic group

(d) All of the above

65. The inhibition of succinic dehydrogenase causes by malonate is one of the following types

(a) Noncompetitive

(b) Competitive

(c) Uncompetitive

(d) Irreversible

66. Which one of the following enzymes is a true allosteric enzyme ?

(a) ATCase

(b) Lactate dehydrogenase

(c) Chymotrypsin

(d) α-amylase

67. How many ATPs will be generated if one molecule of palmitic acid oxidized to CO_2 and H_2O ?

(a) 131

(b) 129

(c) 96

(d) 35

68. 2, 4 dinitrophenol, the uncoupling agent interferes cellular respiration in that it

(a) allows electron transport to continue but prevents the phosphorylation of ADP to ATP

(b) decreases the ATPase activity

(c) prevents both electron transport and oxidative phosphorylation

(d) removes intracellular Na^+ or K^+ ions

69. Epinephrine synthesis takes place in one of the following endocrine organs

(a) Pituitary

(b) Ovary

(c) Pancreas

(d) Adrenal

70. Vitamin that also acts as coenzyme

(a) K

(b) E

(c) B_{12}

(d) none

71. RNase H can nick in a

(a) DNA-RNA hybrid

(b) DNA-DNA hybrid

(c) RNA-RNA hybrid

(d) none

72. AUG Code is meant for which amino acid

(a) Valine

(b) Lysine

(c) Methionine

(d) Glycine

73. One of the following is 5-methyl cytosine
    (a) Thymine
    (b) Adenine
    (c) Guanine
    (d) Uracil

74. A telomere is located on a chromosome at
    (a) terminal portion
    (b) middle portion
    (c) random
    (d) beginning

75. Which one enters TCA cycle ?
    (a) Pyruvate
    (b) Fattyacyl CoA
    (c) Citric acid
    (d) Acetyl CoA

76. The last part of the small intestine is
    (a) the jujunum
    (b) the duodenum
    (c) the ileum
    (d) the cecum

77. Before being released for action, vasopressin is stored in the
    (a) adrenal gland
    (b) kidney
    (c) hypothalamus
    (d) neurohypophysis

78. The source of Ca^{2+} for muscle is
    (a) sarcoplasmic reticulum
    (b) mitochondria
    (c) cytoplasm
    (d) ribosome

79. Depolarization of a neurolema occurs by the influx of
    (a) chloride ions
    (b) sodium ions
    (c) potassium ions
    (d) calcium ions

80. The receptors of some steroid hormones are present in the
    (a) nucleus
    (b) outside the cell membrane
    (c) remain attached to the inner side of the plasma membrane
    (d) nucleolus

81. Catecholamines are produced by
    (a) adrenal medulla
    (b) zona glomerulosa
    (c) zona fasciculata
    (d) zona reticularis

82. Ovulation is caused by
    (a) FSH
    (b) LH
    (c) estradiol
    (d) progesterone

83. The basic function of oxytocin is
(a) stimulation of ovary
(b) stimulation of testis
(c) stimulation of kidney
(d) stimulation of mammary gland contraction

84. Antidiuretic hormone is a
(a) decapeptide
(b) heptapeptide
(c) octapeptide
(d) hexapeptide

85. Diurnal repetition of a biological activity is called
(a) circannual rhythm
(b) circadian rhythm
(c) circamensual rhythm
(d) circaseptan rhythm

86. The type of placenta present in cattle is
(a) Epithelio chorial
(b) Syndesmo chorial
(c) Endothelio chorial
(d) Haemo chorial

87. 'nebenkern' of human spermatozoan is formed from
(a) Mitochondria
(b) Golgi apparatus
(c) Endoplasmic reticulum
(d) Lysosomes

88. The blastula of rabbit is called as
(a) Coenoblastula
(b) Stereoblastula
(c) Discoblastula
(d) Blastocyst

89. The first cells that migrate through Hensen's node of chick embryo are destined to become
(a) Pharyngeal endoderm of foregut
(b) Kidney endoderm
(c) Head process
(d) Cardiac endoderm

90. Functioning of heart in chick embryo starts by about
(a) 12 hrs
(b) 24 hrs
(c) 48 hrs
(d) 92 hrs

91. Expected frequency is
(a) $\frac{\text{Column total} \times \text{Row total}}{\text{Grand total}}$
(b) $\frac{\text{Column total} \times \text{Grand total}}{\text{Row total}}$
(c) $\frac{\text{Row total} \times \text{Grand total}}{\text{Column total}}$
(d) $\frac{\text{Grand total}}{\text{Row total} \times \text{Column total}}$

92. The total Rows in a contingency table are three and total columns are also three. The degree of Freedom will be
(a) 4
(b) 9
(c) 6
(d) 2

93. If S_1^2 and S_2^2 are the variances of independent random samples of size n_1 and n_2 taken from normal populations with variances σ_1^2 and σ_2^2, respectively, then F will be

(a) $\frac{\sigma_2^2 s_1^2}{\sigma_1^2 s_2^2}$

(b) $\frac{\sigma_1^2 s_2^2}{\sigma_2^2 s_1^2}$

(c) $\frac{\sigma_1^2 s_1^2}{\sigma_2^2 s_2^2}$

(d) $\frac{\sigma_2^2 s_2^2}{\sigma_1^2 s_1^2}$

94. The relationship between Mean, Median and Mode is

(a) Mode = 3 Median – 2 Mean

(b) Mode = Mean – Median

(c) Mode = 16 Mean – 4 Median

(d) Mode = 3 Median + 3 Mean

95. Geometric Mean of 138 and 522 is

(a) 268·4

(b) 468·6

(c) 568·6

(d) 368·4

96. Which of the following organelles in the cell referred to as 'suicidal bag' on 'disposal unit' ?

(a) Peroxisome

(b) Glyoxisome

(c) Lysosome

(d) Ribosome

97. Which of the following is responsible for bearing of hereditary characters ?

(a) Mitochondria

(b) Gene

(c) Nucleolus

(d) Chromosome

98. Chromosome becomes tetravalent during

(a) Diplotene

(b) Leptotene

(c) Zygotene

(d) Pachytene

99. Episome is present in

(a) Nucleus

(b) Ribosome

(c) Bacteria

(d) Virus

100. Which of the following RNA is highest in percentage in the cell ?

(a) r RNA

(b) m RNA

(c) t RNA

(d) All in equal percentage

101. If the statement says "One gene is responsible for one character" then how many genes present in an individual for one character

(a) One

(b) Two pairs

(c) Two

(d) More than two

102. The genes located on Y chromosome of human responsible for sperm cell mitosis is

(a) SRY gene

(b) ZF gene

(c) HYA gene

(d) TD gene

103. If for a character the interaction between four gene is responsible then what is the possible genotype in F_2 generation

(a) 1 : 4 : 4 : 6 : 4

(b) 1 : 5 : 10 : 10 : 4

(c) 1 : 3 : 3 : 1

(d) 1 : 4 : 6 : 4 : 1

104. The mechanism of crossing over includes the exchange of chromosomal sequents, it becomes possible because

(a) 0·3% of DNA replication still remain for M. Phase

(b) The variation needs to be occurred for better survival

(c) Synaptanemal complex is formed

(d) No statement explain correctly the fact

105. According to present knowledge, one of the stop codon codes for which of the following

(a) Cestine

(b) Cesteine

(c) Selenocysteine

(d) Stop codon can not code for any amino acid

106. Allograft refers to

(a) Tissue transplanted into the same individual

(b) Tissue transplanted into a different species

(c) Graft tissue between two organisms of same species

(d) Tissue transplanted to different organisms

107. Human immunodeficiency virus is responsible for

(a) Dengue fever

(b) Acquired Immunodeficiency Syndrome

(c) Encephalitis

(d) Chikun Gunya

108. Lymphocytes that produce antibodies are

(a) Granulocytes

(b) T-lymphocytes

(c) B-lymphocytes

(d) Phagocytes

109. Graft tissue between genetically identical individuals are

(a) Allograft

(b) Isograft

(c) Heterograft

(d) Unigraft

110. Hybridoma technology used for

(a) Developing red blood cells

(b) Developing polyclonal antibodies

(c) Developing monoclonal antibodies

(d) Developing phagocytes

111. Banting and Best isolated insulin from the pancreas of

(a) Cow

(b) Pig

(c) Dog

(d) Rabbit

112. Virus contain

(a) DNA

(b) Either DNA or RNA

(c) RNA

(d) Both DNA and RNA

113. When yeast ferments glucose products formed are

(a) Methanol and Carbon dioxide

(b) Water and Carbon dioxide

(c) Ethanol and Water

(d) Ethanol and Carbon dioxide

114. Insulin produced by biotechnology

(a) Can be less expensive

(b) Can be mass produced

(c) Can be non-allergic

(d) Are all the above

115. Passive immunity was discovered by

(a) Robert Koch

(b) Louis Pasteur

(c) Emil Von Behtring

(d) Edward Jenner

116. Restriction enzymes used in genetic engineering

(a) Can join different DNA fragments

(b) Are proteolytic enzymes that degrade harmful proteins

(c) Can cut DNA at specific base sequence

(d) Are nucleases that cleave DNA at specific and unique internal location

117. A transgenic animal has

(a) Foreign DNA present in some cells

(b) Foreign DNA in all its adult cells

(c) DNA injected into some adult cells

(d) DNA and RNA injected into Zygote

118. Polymerase Chain reaction (PCR) :

(a) Induces DNA degradation

(b) Amplifies millions of copies of DNA

(c) Induces ligation of DNA segments

(d) Signifies gene expression together

119. Resolving power of human eye is

(a) 1 μ

(b) 10 μ

(c) 100 μ

(d) 1 mm

120. Pure biomolecules in solution can be fractionated using

(a) High performance liquid chromatography (HPLC)

(b) Ordinary centrifugation

(c) Filtration

(d) Lyophilization

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