



FOR KUET EXAM PREPARATION

KUET 2023

Question Paper · M.Sc. Zoology

EXAM	YEAR	TYPE	SUBJECT
KUET	2023	Question Paper	M.Sc. Zoology

Sr. No.

ENTRANCE TEST-2023**SCHOOL OF BIOLOGICAL SCIENCES****ZOOLOGY**

Total Questions : 60
Time Allowed : 70 Minutes

Question Booklet Series **A**
Roll No. :

Instructions for Candidates :

1. Write your Entrance Test Roll Number in the space provided at the top of this page of Question Booklet and fill up the necessary information in the spaces provided on the OMR Answer Sheet.
2. OMR Answer Sheet has an Original Copy and a Candidate's Copy glued beneath it at the top. While making entries in the Original Copy, candidate should ensure that the two copies are aligned properly so that the entries made in the Original Copy against each item are exactly copied in the Candidate's Copy.
3. All entries in the OMR Answer Sheet, including answers to questions, are to be recorded in the Original Copy only.
4. Choose the correct / most appropriate response for each question among the options A, B, C and D and darken the circle of the appropriate response completely. The incomplete darkened circle is not correctly read by the OMR Scanner and no complaint to this effect shall be entertained.
5. Use only blue/black ball point pen to darken the circle of correct/most appropriate response. In no case gel/ink pen or pencil should be used.
6. Do not darken more than one circle of options for any question. A question with more than one darkened response shall be considered wrong.
7. There will be '**Negative Marking**' for wrong answers. Each wrong answer will lead to the deduction of 0.25 marks from the total score of the candidate.
8. Only those candidates who would obtain positive score in Entrance Test Examination shall be eligible for admission.
9. Do not make any stray mark on the OMR sheet.
10. Calculators and mobiles shall not be permitted inside the examination hall.
11. Rough work, if any, should be done on the blank sheets provided with the question booklet.
12. OMR Answer Sheet must be handled carefully and it should not be folded or mutilated in which case it will not be evaluated.
13. Ensure that your OMR Answer Sheet has been signed by the Invigilator and the candidate himself/herself.
14. At the end of the examination, hand over the OMR Answer Sheet to the invigilator who will first tear off the original OMR sheet in presence of the Candidate and hand over the Candidate's Copy to the candidate.

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❧**[Turn over**

1. Each haemoglobin molecule has the ability to carry a maximum of
 - (A) one O₂ molecule
 - (B) two O₂ molecules
 - (C) three O₂ molecules
 - (D) four O₂ molecules
2. Medulla oblongata controls which of the following ?
 1. vasodilation and vasoconstriction
 2. breathing and blood pressure
 3. gut peristalsis and gland secretion
 4. laughing and micturition
 - (A) 1, 2 & 3 are correct
 - (B) 1 & 2 are correct
 - (C) 2 & 4 are correct
 - (D) 1, & 3 are correct
3. In which of the following postanal tail is present?
 - (A) *Branchiostoma*
 - (B) *Herdmania*
 - (C) *Balanoglossus*
 - (D) Both (B) & (C)
4. Which of the following causes the most blood pressure in the mammalian aorta?
 - (A) systole of the left atrium
 - (B) diastole of the right ventricle
 - (C) systole of the left ventricle
 - (D) diastole of the right atrium
5. Table salt is added with iodine to help prevent deficiencies of an essential mineral needed for the proper functioning of
 - (A) parathyroid glands
 - (B) adrenal glands
 - (C) thyroid glands
 - (D) the endocrine pancreas
6. The hormone gastrin secreted by gastric mucosa is a
 - (A) polypeptide
 - (B) glycoprotein
 - (C) steroid
 - (D) catecholamine
7. Which of the following is the correct chemical reaction catalysed by enzyme arginase?
 - (A) Arginine ---- Citrulline + Ammonia
 - (B) Arginine ---- Citrulline + Ornithine
 - (C) Arginine ---- Ornithine + Ammonia
 - (D) Arginine ---- Ornithine + Urea
8. Which of the following pair is not correctly matched?
 - (A) Cardiac accelerator - Acetylcholine
 - (B) Gluconeogenic hormone - Glucagon hormone
 - (C) Control of Basal metabolic rate - Thyroxin
 - (D) Folliculogenic hormone - FSH
9. Which of the following secretes a polypeptide hormone which facilitates birth by relaxing pubic-symphysis?
 - (A) umbilical cord
 - (B) amniotic cells
 - (C) neurohypophysis
 - (D) placenta
10. In Kreb's cycle FAD is the electron acceptor during the conversion of
 - (A) succinyl CoA to succinic acid
 - (B) α-Ketoglutaric acid to succinyl CoA
 - (C) fumaric acid to malic acid
 - (D) succinic acid to fumaric acid
11. Which one of the following is correct?
 - (A) Apoenzyme + Endoenzyme = Holoenzyme
 - (B) Holoenzyme + Exoenzyme = Apoenzyme
 - (C) Holoenzyme + Apoenzyme = Coenzyme
 - (D) Coenzyme + Apoenzyme = Holoenzyme

12. End product of β -oxidation of fatty acid is
 - (A) Fatty acyl-CoA
 - (B) Pyrophosphate
 - (C) β -keto fatty acyl-CoA
 - (D) Acetyl Co-A
13. Which of the following enzymes is the rate-limiting step of the urea cycle?
 - (A) N-acetyl glutamate synthase
 - (B) Carbamoyl phosphate synthetase
 - (C) Ornithine carbamoylase
 - (D) Argininosuccinate synthetase
14. What was the most significant conclusion that Gregor Mendel drew from his experiments with pea plants?
 - (A) There is considerable genetic variation in garden peas.
 - (B) Traits are inherited in discrete units, and are not the results of "blending."
 - (C) Recessive genes occur more frequently in the F₁ generation than do dominant ones.
 - (D) An organism that is homozygous for many recessive traits is at a disadvantage.
15. Epistatic effect, in which the hybrid ratio of 9:3:3:1 between $AaBb \times AaBb$ gets modified, is
 - (A) interaction of two alleles at same locus
 - (B) interaction of two alleles at different loci
 - (C) dominance of one allele on another allele at same locus
 - (D) dominance of one allele on another allele at both of its loci
16. Colour blindness in man is
 - (A) Sex-linked character
 - (B) Sex-influenced character
 - (C) Sex-limited character
 - (D) Dominant character
17. Which of the following enzyme is necessary for transcription?
 - (A) Endonuclease
 - (B) RNAase
 - (C) DNA Polymerase
 - (D) RNA Polymerase
18. In case of *E. coli* which of the following induces *lac* operon ?
 - (A) promoter gene
 - (B) regulator gene
 - (C) lactose
 - (D) β -galactosidase
19. The centre for hearing in humans is located in
 - (A) temporal lobe
 - (B) frontal lobe
 - (C) cerebral cortex
 - (D) parietal lobe
20. In progenies linkage leads to
 - (A) lesser parental types
 - (B) excess parental types
 - (C) excess of recombinant types
 - (D) origin of new recombinants
21. Which of the following is not a focussing part of human eye?
 - (A) retina
 - (B) ciliary muscles
 - (C) cornea
 - (D) lens
22. During replication, the Okazaki fragments on lagging strand are joined together by
 - (A) DNA Polymerase
 - (B) DNA Ligase
 - (C) Primase
 - (D) Helicase

23. The primitive atmosphere of the earth may have favoured the synthesis of organic molecules because
 - (A) it was highly oxidative
 - (B) it was reducing and had energy sources in the form of lightning and UV radiation
 - (C) it had a great deal of methane and organic fuels
 - (D) it had plenty of water vapour, carbon, and nitrogen, providing the C, H, O, and N needed for the organic molecules
24. Which of the following is known to be the earliest known ancestor of present day horse ?
 - (A) Meshippus
 - (B) Merychippus
 - (C) Equus
 - (D) Eohippus
25. Which of the following statement is incorrect about *Ascaris lumbricoides* ?
 - (A) Sexes are separate and sexual dimorphism well marked
 - (B) Pair of testes are present
 - (C) Respires anaerobically
 - (D) Sperms are amoeboid and ova are elliptical
26. In most of the eukaryotic organism, DNA replication in the lagging strand is
 - (A) conservative and continuous
 - (B) semiconservative but discontinuous
 - (C) conservative and semi-discontinuous
 - (D) semiconservative but continuous
27. Generation after generation Weismann cut off tails of mice but tail neither disappeared nor shortened, proving that
 - (A) Darwin was right
 - (B) Mutation theory is wrong
 - (C) Lamarck's statement on inheritance of acquired characters was wrong
 - (D) Lamarck's statement on inheritance of acquired characters was right
28. The law/theory which states that "the relative frequencies of various genes in a population remain constant in the absence of mutation, selection and gene flow" is known as
 - (A) Biogenetic law
 - (B) Mutational theory
 - (C) Hardy-Weinberg law
 - (D) Gene theory
29. The manner by which the K/T impactor most likely killed the dinosaurs is that
 - (A) material launched into space re-entered the atmosphere, heating up to high temperatures and roasting them
 - (B) the fragments struck them on the head, fracturing their skulls
 - (C) it shook the earth's mantle, resulting in massive volcanic outbursts
 - (D) they died as a result of the impactor's poisonous vapours
30. In case of tapeworms small groups of gravid proglottids are regularly detached from the posterior end of strobila and passed out with human faeces, such a process is called
 - (A) Apolysis
 - (B) Strobilization
 - (C) Proglottisation
 - (D) Budding
31. Which of the following snakes is known as worm snake and has vestigial eyes?
 - (A) *Ptyas*
 - (B) *Typhlops*
 - (C) *Lycodon*
 - (D) *Eryx*

32. Fight-or-flight reactions include activation of
- the parathyroid glands, leading to increased metabolic rate
 - the thyroid gland, leading to an increase in the blood calcium concentration
 - the anterior pituitary gland, leading to cessation of gonadal function
 - the adrenal medulla, leading to increased secretion of epinephrine
33. In which of the following Ilio-ischiatic foramen is present ?
- Fish
 - Frog
 - Lizard
 - Bird
34. Population with adjacent geographic ranges are known as
- allopatric population
 - sympatric population
 - parapatric population
 - finite population
35. Opening of mouth into a narrow space bounded by jaws, lips and cheeks is called
- diastema
 - vestibule
 - pharynx
 - nares
36. In case of ruminants which compartment of stomach has gastric glands ?
- rumen
 - reticulum
 - omasum
 - abomasum
37. In case of elasmobranchs the gills rakers help in
- exchange of gases
 - preventing food from entering the gill clefts
 - preventing water from entering gill clefts
 - maintaining pH of blood
38. The carotid artery supplies blood to the
- head and brain
 - lungs and skin
 - heart
 - lower part of body
39. In mammals, the kidneys are placed asymmetrically the right one being lower due to slight displacement by
- stomach
 - liver
 - spleen
 - heart
40. The brain is protected by a single membrane, *meninx primitiva* in case of
- Scoliodon*
 - Rana*
 - Uromastix*
 - Columba*
41. Allopatric, but not sympatric speciation requires
- reproductive isolation
 - geographic isolation
 - spontaneous differences in males and females
 - prior hybridization
42. The eyes of fish shine due to the
- cornea
 - lens
 - tunica fibrous
 - tapetum lucidum

43. Which of the following law states that “the speed or rate of cleavage in any region of egg is inversely proportional to the amount of yolk it contains” ?
 (A) Sach’s law
 (B) Hertwig’s law
 (C) Balfour’s law
 (D) Pfluger’s law
44. Bats belong to which of the following orders ?
 (A) Lagomorpha
 (B) Carnivora
 (C) Primata
 (D) Chiroptera
45. The type of placenta found in cats and dogs is
 (A) diffuse
 (B) zonary
 (C) discoidal
 (D) metadiscoidal
46. Which of the following hormones helps to retain pregnancy and prevents premature parturition?
 (A) progesterone
 (B) estrogen
 (C) relaxin
 (D) oxytocin
47. The acrosome of the sperm is formed by
 (A) mitochondrion
 (B) lysosome
 (C) golgi complex
 (D) vacuole
48. The average pH of pancreatic juice is about
 (A) 4.4
 (B) 6.8
 (C) 8.4
 (D) 9.2
49. Which of the following is not correctly matched?
 (A) Gastrozoid : feeding polyp
 (B) Nectocalyx : swimming zooid
 (C) Dactylozoid : protective polyp
 (D) Phyllozoid : medusa filled with secreted gas
50. Which of the following genus represents class Zoomastigophorea (Zooflagellata) of phylum Protozoa?
 (A) *Monocystis*
 (B) *Plasmodium*
 (C) *Trypanosoma*
 (D) *Vorticella*
51. Which evidence of evolution is related to Darwin’s finches?
 (A) evidence of comparative anatomy
 (B) evidence of embryology
 (C) Palaentological evidence
 (D) evidence of biogeographical distribution
52. Which of the following is known as a sea mouse?
 (A) *Aphrodite*
 (B) *Polynoe*
 (C) *Arenicola*
 (D) *Amphitrite*
53. Radula which is the characteristic feature of Mollusca is absent in
 (A) Scaphopoda
 (B) Aplacophora
 (C) Bivalvia
 (D) Cephalopoda
54. An example of the image formed in a cockroach’s eye is
 (A) Apposition
 (B) Superposition
 (C) Juxtaposition
 (D) Metaposition

55. In sea star madreporite surface bears numerous fine radiating furrows permeated by approximately minute pores
 (A) 100
 (B) 150
 (C) 200
 (D) 250
56. Which of the following statements is wrong regarding *Petromyzon* and *Myxine*?
 (A) Skin is less slimy in case of *Petromyzon* than *Myxine*
 (B) Neural arches are present in *Petromyzon* and absent in *Myxine*
 (C) Brain is better developed in *Petromyzon* than *Myxine*
 (D) Development is direct in case of *Petromyzon* and indirect in *Myxine*
57. Ilicium in some fishes is modification of
 (A) Caudal fin
 (B) 1st Pectoral fin spine
 (C) 1st dorsal fin spine
 (D) Anal fin
58. Instead of teeth, Baleen are found in
 (A) Sharks
 (B) Dolphins
 (C) Sea cows
 (D) Blue whale
59. Which one of the following subclasses of reptilia is not extinct?
 (A) Diapsida
 (B) Euryapsida
 (C) Parapsida
 (D) Synapsida
60. Which of the following groups belong to anamniotes?
 (A) birds and mammals
 (B) reptiles and birds
 (C) reptiles and mammals
 (D) fish and amphibians

ROUGH WORK

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