Question Booklet Series: **A** *Question Booklet Serial No.:* **410822**

CET (UG) – 2023

Important: *Please consult your Admit Card/Roll No. slip before filling your Roll Number on the Test Booklet and Answer Sheet.*

Roll No. ***(In Figure)*** ***(In Words)***

O.M.R. Answer Sheet Serial No.

Signature of Candidate: _____ *Signature of Invigilator:* _____

SUBJECT: BIOLOGY

Time: 70 Minutes **Number of Questions: 60** **Total Marks: 120**

DO NOT OPEN THE SEAL ON THE BOOKLET UNTIL ASKED TO DO SO.

INSTRUCTIONS:

1. Write your Roll No. on the Questions Booklet and also on the OMR Answer Sheet in the space provided and nowhere else.
2. Enter the Question Booklet Serial No. on the OMR Answer Sheet. Darken the corresponding bubbles with **Black Ball /Black Gel Pen**.
3. Do not make any identification mark on the Answer Sheet or Question Booklet.
4. The medium of examination shall be **English** only.
5. Please check that this Question Booklet contains **60** Questions. In case of any discrepancy, inform the Assistant Superintendent within 10 minutes of the start of Test.
6. Each question has four alternative answer (A,B,C,D) of which only one is correct. For each question, darken only one bubble (A or B or C or D), whichever you think is the correct answer, on the Answer Sheet with **Black Ball /Black Gel Pen.**
7. If you do not want to answer a question, leave all the bubbles corresponding to that question blank in the Answer Booklet. No marks will be deducted in such cases.
8. Darken the bubbles in the OMR Answer Sheet according to the Serial No. of the question given in the Question Booklet.
9. **Negative marking will be adopted for evaluation i.e. 25% of the marks of the question will be deducted for each wrong answer. A wrong answer means incorrect answer or wrong filling of bubble.**
10. The University will provide logarithmic table. Borrowing of log tables and any other material is not allowed.
11. For rough work only the blank sheet at the end of the Question Booklet be used.
12. The Answer Sheet is designed for computer evaluation. Therefore, if you do not follow the instructions given on the Answer Sheet, it may make evaluation by the computer difficult. **Any resultant loss to the candidate on the above account, i.e. not following the instructions completely.**
13. After the test, hand over the Question Booklet and the Answer Sheet to the Assistant Superintendent on duty.
14. In no case the Answer Sheet, the Question Booklet, or its part or any material copied/noted from this Booklet is to be taken out of the examination hall. Any candidate found doing so would be expelled from the examination.
15. **20 minutes** extra will be given to the visually handicapped/Person with Disability (PwD) for each paper.
16. A candidate who creates disturbance of any kind or changes his/her seat or is found in possession of any paper possibly of any assistant or found giving or receiving assistant or found using any other unfair means during the examination will be expelled from the examination by the Centre Superintendent/Observer whose decision shall be final.
17. Tele-communication equipment such as Cellular/cordless phones, pager, wireless, scanner, camera or any electronic/digital gadget etc., is not permitted inside the examination hall. **Use of calculator is not allowed**.
18. The candidates will not be allowed to leave the Examination Hall/Room before the expiry of the allotted time.

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1. Which of the statement is not correct for the r-selected individuals?
   (A) Live in unstable and unpredictable environments
   (B) High fecundity
   (C) Longer life span
   (D) Reproduce at an early age

2. The IUCN Green Status of the Species was launched in the year
   (A) 1964 (B) 1973 (C) 2012 (D) 2005

3. When we are referring to the multiple species of the same genus, we use
   (A) sp. (B) spp. (C) Both sp. & spp. (D) no abbreviation

4. Which state has the highest number of Ramsar wetland sites in India?
   (A) Uttar Pradesh (B) Punjab
   (C) Madhya Pradesh (D) Tamil Nadu

5. Which one of the following is the densest heavy metal?
   (A) Osmium (B) Mercury (C) Lead (D) Cadmium

6. The Great Indian Bustard is famously found in
   (A) Jim Corbett National Park, Uttarakhand
   (B) Gangotri National Park, Uttarakhand
   (C) Sundarbans National Park, West Bengal
   (D) Desert National Park, Rajasthan

7. Which of the following is not an alien species in India?
   (A) *Tor putitora* (B) *Cyprinus carpio*
   (C) *Ctenopharyngodon idellus* (D) *Salmo trutta fario*

8. _____ is the largest part of the digestive system in Urochordates.
   (A) Intestine (B) Stomach (C) Pharynx (D) Buccal cavity

9. Sarcopterygians are
   (A) Ray finned fishes (B) Lobe finned fishes
   (C) Chondrichthyes (D) Both ray and lobe finned fishes

10. Distance between two consecutive base pairs in DNA double helix is 3.4nm
    (A) 3.4 nm (B) 0.34 nm (C) 3.4 μm (D) 0.34 μm

11. rRNAs in eukaryotes are transcribed by
    (A) RNA Polymerase I (B) RNA Polymerase II
    (C) RNA Polymerase III (D) RNA Polymerase IV

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12. ABO blood groups I humans are example of
(A) Epistasis
(B) Co-dominance
(C) X – linked recessive inheritance
(D) Mitochondrial inheritance

13. Sickle cell anaemia arises due to which of the following mutation
(A) Insertion and deletion mutation
(B) Chromosomal inversion
(C) Translocation
(D) Single base change

14. Motor protein present in axoneme of cilia is
(A) Nexin (B) Tubulin (C) Dynein (D) Kinesin

15. Which of the following intermediate filaments are part of the nuclear envelope?
(A) Laminins (B) Lamins (C) Keratins (D) Nestins

16. Consider a biallelic locus with alleles A and B having frequency p and q respectively to be in Hardy Weinberg equilibrium in a population. If the value of q is 0.3 in 400 individuals of this population, what will be the expected number of individuals with genotype Aa?
(A) 196 (B) 84 (C) 36 (D) 168

17. Smith and Nathans are famous for the discovery of:
(A) Gene therapy
(B) Restriction enzyme
(C) Humulin
(D) Second generation vaccine

18. Insertion of recombinant DNA within the gene encoding for β–galactosidase leads to:
(A) Amplification
(B) Transformation
(C) Insertional inactivation
(D) Cloning

19. Which organization released the first indigenously made COVID vaccine in India?
(A) Bharat Biotech
(B) Zydus Cedila
(C) Serum Institute of India
(D) Gennova Biopharmaceuticals Ltd.

20. The three steps involved in PCR are:
(A) annealing, extension, and denaturation
(B) extension, denaturation, and annealing
(C) denaturation, annealing, and extension
(D) denaturation, extension, and annealing

21. Which of the following is not an STD?
(A) Trichomoniasis (B) Chlamydiosis (C) Syphilis (D) Megacolon

22. Chloride shift is required for the transport of
(A) Oxygen (B) Carbon dioxide (C) Nitrogen (D) Both A & B

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23. Which epidermal gland gives a characteristic odour to the animal?
(A) Adrenal glands (B) Sebaceous glands (C) Apocrine gland (D) Pancreas

24. The mitochondria in the middle piece of the sperm fuse together to form a structure called the
(A) Galea (B) Nebenkern (C) Manchette (D) Corona radiate

25. Which hormone elevates twice during a menstrual cycle?
(A) LH (B) FSH (C) Estrogen (D) Progesterone

26. Muscle fatigue sets in due to non-availability of
(A) Calcium (B) ATP (C) Actin binding site (D) Mg cofactor

27. Which of the following control breathing rate in humans?
(A) Cerebellum (B) Hypothalamus (C) Thalamus (D) Medulla oblongata

28. The sinoatrial node depolarizes more frequently under the influence of:
(A) Medulla oblongata (B) Vagus nerve
(C) Norepinephrine (D) Acetylcholine

29. Which of the following binds stronger to haemoglobin?
(A) Oxygen (B) Carbon dioxide (C) Carbon monoxide (D) Carbon disulphide

30. Which of the following pair is correctly matched?
(A) Cartilaginous joint- skull bones
(B) Gliding joint- between zygapophyses of vertebrae
(C) Hinge joint- between vertebrae
(D) Fibrous joint- between phalanges

31. Dinoflagellates are placed in which of the following kingdoms as per Whittaker's classification?
(A) Fungi (B) Monera (C) Protista (D) Plantae

32. Which of the following is not true about Photorespiration?
(A) Occurs in C_3 plants
(B) Is a reductive photosynthetic carbon cycle
(C) Incurs cost of one ATP and one NAD(P)H
(D) Is also known as C_2 cycle

33. In which of the following plants the type of fruit is Follicle?
(A) Shepherd's purse (B) Buttercup (C) Dandelion (D) Milkweed

34. Monoadelphus condition of stamens is not found in the flowers of _____.
(A) *Hibiscus rosa-sinensis* (B) *Alcea rosea*
(C) *Abutilon indicum* (D) *Murraya exotica*

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35. Which of the following terms is applied to plants of same species differing in external morphology and with genetically fixed variations?
(A) Ecotypes (B) Ecotopes (C) Ecophenes (D) Ecotones

36. Which of the following countries has the headquarter of International Maize and Wheat Improvement Centre (CIMMYT)?
(A) Mexico (B) China (C) Taiwan (D) Russia

37. The term Phytohormone was used in which of the following year?
(A) 1940 (B) 1939 (C) 1937 (D) 1934

38. Who among the following discovered viroids?
(A) Frederick Twort (B) Theodor Otto Diener
(C) Martinus Beijerinck (D) Dmitri Ivanovsky

39. Which of the following biochemical processes is not catabolic?
(A) Glycolysis (B) Gluconeogenesis
(C) Beta oxidation (D) Lipolysis

40. The acronym CITES stands for _____.
(A) Convention on Indian Trade in Endangered Species of Wild Fauna and Flora
(B) Convention on International Trade in Exotic Species of Wild Fauna and Flora
(C) Convention on International Trade in Endangered Species of Wild Fauna and Flora
(D) Convention on Indian Trade in Exotic Species of Wild Fauna and Flora

41. RuBisCO accounts for how much percent of the leaf proteins in C_4 plants?
(A) 10 (B) 20 (C) 30 (D) 50

42. Doomsday Seed Vault is located in _____.
(A) Uttrakhand, India (B) Kew, England
(C) St. Petersburg, Russia (D) Svalbard, Norway

43. In which of the following plants vegetative reproduction takes place through tubers?
(A) Tulip (B) Begonia (C) Dahlia (D) Gladiolus

44. Photosystem I is composed of how many cofactors?
(A) >110 (B) 100 (C) 90 (D) 80

45. Which of the following mutations result when a codon specifying an amino acid is converted to one of the stop codons?
(A) Leaky mutation (B) Neutral mutation
(C) Missense mutation (D) Nonsense mutation

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46. Which of the following terms is used for an island formed by a ring-shaped coral reef surrounding a lagoon?
(A) Atoll (B) Estuary (C) Hydrothermal vent (D) Salt marsh

47. Which of the following terms refer to the amount of inorganic nutrients present in the soil at any given time?
(A) Nutrient cycling (B) Mineralization
(C) Standing state (D) Standing crop

48. Which of the following is not true about synaptonemal complex?
(A) Is formed during pachytene stage (B) Is a protein structure
(C) Is a tripartite structure (D) Was discovered by C.H. Morgan

49. Apospory in ferns was reported for the first time by_____.
(A) Farlow (B) Bower (C) Druery (D) Sporne

50. Which of the following bacteria convert nitrite into nitrate?
(A) *Nitrosomonas* (B) *Pseudomonas*
(C) *Thiobacillus* (D) *Nitrobacter*

51. Maximum number of individuals a particular area can sustain is referred to as its _____.
(A) Intrinsic Rate of Growth (B) Biotic Potential
(C) Carrying Capacity (D) Resource Limit

52. In TCA cycle, a molecule of GTP is synthesized during _____.
(A) Conversion of Succinyl CoA to Succinate
(B) Conversion of Malate to Oxaloacetate
(C) Conversion of Isocitrate to α-Ketoglutarate
(D) Conversion of Fumarate to Malate

53. Which of the following countries was first to commercialize virus resistant transgenic tobacco?
(A) China (B) USA (C) France (D) Germany

54. Who used the term "Genetics" for the first time?
(A) Carl Correns (B) Hugo de Vries
(C) William Bateson (D) Thomas Hunt Morgan

55. Which of the following is the smallest biosphere reserve of India?
(A) Dibru Saikhowa (B) Nilgiri (C) Panna (D) Nokrek

56. Which of the following is not true about Baculoviruses?
(A) Represent a group of DNA viruses
(B) Infect only vertebrates
(C) Used in biological pest control
(D) Used as tools to produce recombinant glycoproteins

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57. As on March 2023, how many RAMSAR Wetland Sites have been recognized in India?
(A) 26 (B) 54 (C) 75 (D) 46

58. Which of the following relates to the substances that deplete Stratospheric Ozone?
(A) Montreal Protocol (B) Kyoto Protocol
(C) Vienna Convention (D) Nagoya Protocol

59. Which of the following Indian states has the maximum number of wildlife sanctuaries?
(A) Maharashtra (B) Karnataka
(C) Tamil Nadu (D) Himachal Pradesh

60. Which of the following weed is known as *Terror of Bengal*?
(A) Water chestnut (B) Water caltrop
(C) Water cress (D) Water hyacinth

x-x-x

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