

Question Booklet Series: **A**

Question Booklet Serial No.: **410861**

**CET (UG) – 2022**

**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)

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O.M.R. Answer Sheet Serial No.

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Signature of Candidate: \_\_\_\_\_

Signature of Invigilator: \_\_\_\_\_

**SUBJECT: BIOLOGY**

**Time: 70 Minutes**

**Number of Questions: 60**

**Maximum 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 Point/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 Point/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. 1/4<sup>th</sup> 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. For calculations, use of log tables is permitted. 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, shall be of the candidate only.**
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 should 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 phones, pager, wireless, scanner, camera or any electronic/digital gadget etc., is not permitted inside the examination hall. **Use of calculators is not allowed.**
18. The candidates will not be allowed to leave the Examination Hall/Room before the expiry of the allotted time.

(BIO-A)

1. Annelids do not possess  
(A) Circumpharyngeal nerve ring (B) Longitudinal muscle in the gut  
(C) Metameric segmentation (D) Mesodermal pouches in body cavity
2. The presence of flame cells is a characteristic feature of  
(A) *Taenia* (B) *Nereis*  
(C) *Hirudinaria* (D) *Pheretima*
3. The number of ciliated rows present in comb jellies are  
(A) 8 (B) 6  
(C) 4 (D) 9
4. Which one of the following is a non-reducing carbohydrate?  
(A) Sucrose (B) Maltose  
(C) Lactose (D) Ribose-5-phosphate
5. Which of the following is the least likely to be involved in stabilising the three-dimensional folding of most proteins?  
(A) Hydrogen bonds (B) Ester bonds  
(C) Electrostatic interaction (D) Hydrophobic interaction
6. Cholesterol is a precursor for each of the following except  
(A) Steroids (B) Vitamin D  
(C) Insulin (D) Bile salts
7. Thiamine (B1) deficiency results in  
(A) Wernicke's syndrome (B) Korsakoff's syndrome  
(C) Osteonecrosis (D) Tunnel vision
8. Pecten is absent in which bird?  
(A) Peacock (B) Pigeon  
(C) Crow (D) Kiwi
9. Proconsuls were  
(A) Ancestor of man and ape (B) Ancestor of man and not of ape  
(C) Ancestors of ape and monkeys (D) Ancestors of monkeys
10. Cro-magnon cranial capacity was  
(A) 900 cc (B) 1075 cc  
(C) 1450 cc (D) 1600 cc
11. Right and left systemic arches communicate through  
(A) Foramen of Panizza (B) Foramen of Monro  
(C) Foramen Magnum (D) Fenestra ovalis
12. What is the half-life of U238, the radioactive isotope of Uranium?  
(A) 4500 years (B) 45million years  
(C) 4.5 billion years (D) 4.5million years

13. Basilar membrane separates  
 (A) Scala vestibule and Scala media (B) Scala media and Scala tympani  
 (C) Fenestra rotundus and Fenestra ovalis (D) Tympanic cavity and Pharynx
14. Which of the following is a major coordinating center for sensory and motor signalling for the cerebrum?  
 (A) Hypothalamus (B) Thalamus  
 (C) Corpora quadrigemina (D) Corpus callosum
15. Kluver-Bucy Syndrome results from bilateral destruction of  
 (A) Amygdala (B) Fornix  
 (C) Mamillary body (D) Hippocampus
16. The primary zeitgeber in humans is  
 (A) Body Temperature (B) Light -dark cycle  
 (C) Hormone production (D) Earth's magnetic field
17. Which is called as hunger hormone?  
 (A) CCK (B) Ghrelin  
 (C) GLP-1 (D) Secretin
18. Which cells in the stomach if unable to produce intrinsic factor (IF) can cause pernicious anemia?  
 (A) Mucous cells (B) Chief cells  
 (C) Endocrine cells (D) Parietal cells
19. Giant polytene chromosomes are found in \_\_\_\_\_  
 (A) Egg of fruit fly (B) Salivary gland of larvae of fruit fly  
 (C) Salivary gland of adult fruit fly (D) Pupa of fruit fly
20. Reabsorption of useful substances back into the blood from the glomerular filtrate in the nephron occurs in  
 (A) Proximal convoluted tubule (B) Loop of Henle  
 (C) Distal convoluted tubule (D) Collecting duct
21. Egg of frog is  
 (A) Centrolecithal (B) Microlecithal  
 (C) Polylecithal (D) Mesolecithal
22. Which of the following glands of insects secrete juvenile hormone?  
 (A) Intercerebral gland cells (B) Prothoracic glands  
 (C) Corpora cardiaca (D) Corpora allata
23. 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

24. Name the coenzyme of riboflavin (B2)?  
 (A) NAD or NADP (B) FAD and FMN  
 (C) Coenzyme A (D) Thiamine pyrophosphate
25. Which of the following function is catalyzed by Racemases?  
 (A) Removal of water  
 (B) Intramolecular transfer of a functional group  
 (C) Interconversion of L and D stereoisomers  
 (D) Inversion of asymmetric carbon atom
26. What is the binding energy?  
 (A) Free energy released in the formation of enzyme-substrate interaction  
 (B) The energy required to form a bond  
 (C) The energy required to bind substrate  
 (D) It is the activation energy
27. When do progesterone levels rise to their highest point during the female hormonal cycle?  
 (A) Between ovulation and the beginning of menstruation  
 (B) Immediately before ovulation  
 (C) When the blood concentration of luteinizing hormone is at its highest point  
 (D) When 12 primary follicles are developing to the antral stage
28. A band or sheet of connective tissue, primarily collagen holding together the skeletal muscle bundles is  
 (A) Aponeurosis (B) Fascia  
 (C) Endomysium (D) Perimysium
29. Which is a calcium-binding polypeptide during muscle contraction that is structurally and functionally analogous to calmodulin?  
 (A) Troponin T (TpT) (B) Troponin I (TpI)  
 (C) Troponin C (TpC) (D) Tropomyosin
30. SI unit of enzyme activity is  
 (A) Km (B)  $Kat_{cat}$   
 (C)  $V_{max}$  (D) Kat
31. The Nobel Prize in Medicine 2021 was awarded for the discoveries of \_\_\_\_\_  
 (A) Electrocardiogram mechanism (B) Receptors for temperature and touch  
 (C) Cancer Therapy by radiology (D) Discovery of Hepatitis C virus
32. Philadelphia chromosome is generated by translocation between  
 (A) Chromosome 18 and chromosome 6 (B) Chromosome 9 and chromosome 22  
 (C) Chromosome 22 and chromosome 3 (D) Chromosome 16 and chromosome 4
33. Patau's syndrome is caused due to which of the following  
 (A) Trisomy of 13<sup>th</sup> chromosome (B) Tetrasomy of 13<sup>th</sup> chromosome  
 (C) Trisomy of 14<sup>th</sup> chromosome (D) Tetrasomy of 14<sup>th</sup> chromosome

34. Musk deer or hangul is state animal of which state  
(A) Manipur (B) Madhya Pradesh  
(C) Arunachal Pradesh (D) Jammu and Kashmir
35. The example of ex situ conservation is  
(A) National Park (B) Seed bank  
(C) Wildlife Sanctuary (D) Sacred Gove
36. Which of the following structures of cockroach are homologous?  
(A) Antennae and legs (B) Maxillae and labial palps  
(C) Maxillae and legs (D) Mandibles and anal styles
37. The species which is critical to the functioning of the ecosystem as it affect the survival and abundance of many other species are  
(A) Vital species (B) Keystone species  
(C) Indicator species (D) Flagship species
38. Name the outer plexus situated between the longitudinal and circular muscle layers of the gut which controls the peristaltic movement of the bowel?  
(A) Meissner's plexus (B) Discoidal plexus  
(C) Auerbach's plexus (D) Submucous plexus
39. The term chromosome was coined by  
(A) Sutton (B) Boveri  
(C) Waldeyer (D) Hoffmeister
40. Lemur are endemic to which area?  
(A) New Caledonia (B) Seychelles Island  
(C) Galapagos Island (D) Madagascar
41. The pyramid of energy is always upright states that  
(A) The energy conversion efficiency of herbivores is better than carnivores  
(B) The energy conversion efficiency of carnivores is better than herbivores  
(C) Producers have the lowest energy conversion efficiency  
(D) Energy conversion efficiency is the same in all trophic levels
42. Which of the following lake zones has phytoplankton in abundance?  
(A) Littoral zone (B) Benthic zone  
(C) Limnetic zone (D) Profundal zone
43. Black water fever is caused by  
(A) *Borrelia recurrentis* (B) *Plasmodium falciparum*  
(C) *Bartonella quintana* (D) *Babesia microti*
44. Telomeric DNA has non coding sequence are usually rich in which nucleotide?  
(A) Adenine (B) Guanine  
(C) Thymine (D) Cytosine

45. The change in allele frequency from one generation to the next is known as  
 (A) Gene flow (B) Gene transfer  
 (C) Genetic drift (D) Gene migration
46. Cloverleaf structure of tRNA refers to its  
 (A) Primary structure (B) Secondary structure  
 (C) Tertiary structure (D) Three-dimensional structure
47. Pollen culture technique for production of haploids was developed by  
 (A) Guha and Maheshwari (B) Blakeslee  
 (C) Nawaschin (D) Murashige and Skoog
48. Golden rice is a variety of rice produced through genetic engineering to biosynthesize two beta-carotene genes *psy* (phytoene synthase) from  
 (A) Pansy (B) Lotus  
 (C) Daffodil (D) Marigold
49. Aquatic organisms inhabiting the surface layer or moving on the surface film are called as  
 (A) Nekton (B) Pleuston  
 (C) Seston (D) Pelagic
50. The following two organs are examples of secondary lymphoid organs  
 (A) Spleen and thymus (B) Lymph nodes and thymus  
 (C) Spleen and GALT (D) Bone marrow and MALT
51. Phomopsis blight caused by the fungus *Phomopsis vexans* occur in which plant?  
 (A) Brinjal (B) Grapes  
 (C) Sugarcane (D) Potato
52. Only type of cross pollination which during brings genetically different types of pollen grains to the stigma  
 (A) Chasmogamy (B) Cleistogamy  
 (C) Geitonogamy (D) Xenogamy
53. Name the layer of cells located between the sporogenous tissue and the anther wall in flowering plants which is important for the nutrition and development of pollen grains, as well as a source of precursors for the pollen coat.  
 (A) Epidermis (B) Tapetum  
 (C) Endothecium (D) Microspore mother cells
54. Which of the following element is essential for building of chloroplasts?  
 (A) Boron (B) Manganese  
 (C) Molybdenum (D) Magnesium
55. Besides free living in paddy fields, cyanobacteria also colonize intracellularly in stem gland of  
 (A) Gunnera (B) Cycads  
 (C) Conifers (D) Water ferns

56. How many Bishnois were killed in September 1730 while trying to protect a grove of Khejri trees?  
(A) 33 (B) 363  
(C) 330 (D) 360
57. Which phylum of animal is exclusively marine?  
(A) Mollusca (B) Echinodermata  
(C) Coelentrata (D) Porifera
58. Which has the highest number of chromosomes known to science?  
(A) *Ophioglossum reticulatum* (B) *Haplopappus gracilis*  
(C) *Sequoiadendron giganteum* (D) *Pisum sativum*
59. Which agriculturally important bacterial gene is isolated from *Rhizobium*?  
(A) Nif gene (B) E-gene  
(C) F-gene (D) T-DNA
60. Name the genetically modified tomato variety with delayed ripening process and increasing shelf life.  
(A) Lyco100 (B) PHB tomato  
(C) Bt tomato (D) Flavr savr

x-x-x