

Question Booklet Series:

**A**

**CET- 2014**  
**Biology**  
**QUESTION BOOKLET**

INSTRUCTIONS

Question Booklet Number:

**503681**

Maximum Time Allowed : 1 Hour 30 Minutes.  
Negative Marking : 0.2

No. of Questions: 75  
Maximum Marks: 75

Roll Number:

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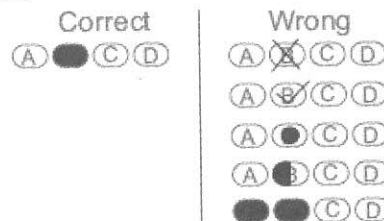
Answer Sheet  
Number:

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Please read the following instructions carefully:

- 1) **Check the booklet thoroughly:** In case of any defect – Misprint, Missing question(s), Missing page, Blank page, Damaged or Defaced page or duplication of question(s) / Page(s), get the booklet changed with the booklet of the same series from the Room Invigilator. No complaint shall be entertained after the entrance test is over
- 2) Write your Roll Number and the OMR Answer Sheet Number on the question booklet.
- 3) Mark carefully your Roll Number, Question Booklet Number and Question Booklet series on OMR Answer sheet and sign at the appropriate place. Incomplete and/or incorrect particulars will result in the non-evaluation of your answer sheet.
- 4) Strictly follow the instructions given by the Centre Supervisor / Room Invigilator and those given on the Question Booklet.
- 5) Candidates are not allowed to carry any papers, notes, books, calculators, cellular phones, scanning devices, pagers etc. to the Examination Hall. Any candidate found using, or in possession of such unauthorized material, indulging in copying or impersonation or adopting unfair means / reporting late / without Admit Card will be debarred from the written test.
- 6) Please mark the right responses on the OMR Sheet with ONLY a Blue/Black ball point pen. Use of eraser, whitener (fluid) and cutting on the OMR Answer Sheet is NOT allowed.
- 7) The test is of objective type containing multiple choice questions (MCQs). Each objective question is followed by four responses. Your task is to choose the correct/best response and mark your response on the OMR Answer Sheet and NOT on the Question Booklet.
- 8) There will be 0.2 negative marking for every wrong answer.

- 9) For marking response to a question, completely darken the CIRCLE so that the alphabet inside the CIRCLE is not visible. Darken only ONE circle for each question. If you darken more than one circle, it will be treated as wrong answer. The CORRECT and the WRONG methods of darkening the CIRCLE on the OMR Answer Sheet are shown below.



- 10) Please be careful while marking the response to questions. The response once marked cannot be changed and if done shall be treated as wrong answer.
- 11) In view of the tight time span, do NOT waste your time on a question which you find to be difficult. Attempt easier questions first and come back to the difficult questions later during the test.
- 12) DO NOT make any stray marks anywhere on the OMR Answer Sheet. DO NOT fold or wrinkle the OMR answer sheet.
- 13) Rough work MUST NOT be done on the OMR Answer Sheet. Use your test booklet for this purpose.
- 14) Candidates are provided carbonless OMR Answer Sheet having original copy and candidate's copy. After completing the examination, candidates are directed to fold at perforation on the top of the sheet, tear it to separate original copy and candidate's copy and then hand over the original copy of OMR Answer Sheet to the Room Invigilator and take candidate's copy with them.

DO NOT OPEN THE SEAL OF THIS BOOKLET UNTIL TOLD TO DO SO

1. The region of DNA sequence that provides binding site for RNA polymerase is
  - (A) Terminator
  - (B) Structural gene
  - (C) Origin sequence
  - (D) Promotor
2. What is the chromosome number in the meiocytes of apple?
  - (A) 12
  - (B) 34
  - (C) 46
  - (D) 78
3. Herbarium sheets are arranged according to the system of classification and should have information about
  - (A) Time and place of collection, English, local and botanical names, phylum, collector's name
  - (B) Date and time of collection, English, local and botanical names, class, collector's name
  - (C) Date and place of collection, English, local and botanical names, order, collector's name
  - (D) Date and place of collection, English, local and botanical names, family, collector's name
4. Carbon dioxide, methane, nitrogen oxide and chlorofluorocarbons are called green house gases because they can absorb
  - (A) Ultraviolet radiations
  - (B) Visible light radiations
  - (C)  $\gamma$ -rays radiations
  - (D) Long wave infrared radiations
5. Pigeon is a
  - (A) Oviparous organism
  - (B) Viviparous organism
  - (C) Ovoviviparous organism
  - (D) None of the above
6. Class is the category of taxonomy which includes related
  - (A) Families
  - (B) Orders
  - (C) Genus
  - (D) Species
7. The anterior portion of the sperm head which is covered by a cap-like structure is called
  - (A) Acrosome
  - (B) Antrum
  - (C) Sertoli cells
  - (D) Enzymes
8. Mendel conducted hybridization experiments on garden peas for
  - (A) 7 years
  - (B) 6 years
  - (C) 5 years
  - (D) 4 years
9. Major pigments found in Phaeophyceae, i.e. brown algae are
  - (A) Chlorophyll a, b
  - (B) Chlorophyll a, b, c
  - (C) Chlorophyll a, c and Fucoxanthin
  - (D) Chlorophyll a, d and Phycoerythrin
10. Two plants one with black flower and other with white coloured flower were crossed in an experiment. In the next generation grey coloured flowers were obtained. The reason for the result is
  - (A) Incomplete dominance
  - (B) Pseudodominance
  - (C) Codominance
  - (D) None of the above
11. A process in which shape of chemical compound is changed without breaking of bonds
  - (A) Chemical process
  - (B) Physical process
  - (C) Biological process
  - (D) Enzymatic reaction
12. The pattern of arrangement of leaves on the stem is known as
  - (A) Heterophylly
  - (B) Phyllode
  - (C) Phyllotaxy
  - (D) Phylloclade
13. Length of grapes stalks increases due to
  - (A) Auxin
  - (B) Cytokinins
  - (C) Gibberellins
  - (D) Ethylene
14. In which method of animal breeding two different species of male and female animals are mated?
  - (A) Cross breeding
  - (B) Interspecific Hybridization
  - (C) Out breeding
  - (D) Out crossing

15. In Dicotyledonous stem, which of the following is the sequence of tissues from inside to outside?  
(A) Pith, phloem, cambium, protoxylem, metaxylem, pericycle, parenchyma, collenchyma, endodermis and epidermis  
(B) Pith, cambium, phloem, protoxylem, metaxylem, pericycle, endodermis, parenchyma, collenchyma and epidermis  
(C) Pith, phloem, protoxylem, metaxylem, cambium, pericycle, endodermis, parenchyma, collenchyma and epidermis  
(D) Pith, protoxylem, metaxylem, cambium, phloem, pericycle, endodermis, parenchyma, collenchyma and epidermis
16. Micro-organism used for commercial production of acetic acid is  
(A) *Saccharomyces cerevisiae*  
(B) *Aspergillus niger*  
(C) *Acetobacter*  
(D) *Clostridium butylicum*
17. Snake, a terrestrial animal that excretes nitrogen wastes in the form of uric acid is called  
(A) Uricotelic  
(B) Ureotelic  
(C) Ammonotelic  
(D) Not confirmed for any type
18. A small protein attached to the outer surface of the inner membrane and which acts as a mobile carrier for transfer of electrons between complex III and IV is  
(A) Cytochrome d  
(B) Cytochrome c  
(C) Cytochrome b  
(D) Cytochrome a
19. Hyacinth is termed as the terror of Bengal how it causing death of fishes?  
(A) Covers the surface of the water that inhibit sunlight to pass through  
(B) Drains oxygen from the water that causes oxygen deficiency  
(C) Absorbs nutrients from the water that causes malnutrition  
(D) Releases carbon di oxide in a huge amount which is lethal to fishes
20. Zygote is resulted by the process  
(A) Isogamy  
(B) Anisogamy  
(C) Monogamy  
(D) Syngamy
21. Megakaryocytes, special cells in the Bone marrow produce cell fragments are called  
(A) Leucocytes  
(B) Erythrocytes  
(C) Thrombocytes  
(D) Fibrinogen
22. Cisternae have a diameter of  
(A) 0.5  $\mu\text{m}$  to 1.0  $\mu\text{m}$   
(B) 1.0  $\mu\text{m}$  to 1.5  $\mu\text{m}$   
(C) 1.5  $\mu\text{m}$  to 2.0  $\mu\text{m}$   
(D) 2.0  $\mu\text{m}$  to 2.5  $\mu\text{m}$
23. What is the full form of AIDS?  
(A) Acquired Immuno Deficiency Syndrome  
(B) Acquired Immunity Deficiency Syndrome  
(C) Acquired Immuno Deficient Syndrome  
(D) Acquired Immunity Deficient Syndrome
24. The process of exchange of  $\text{O}_2$  from the atmosphere with  $\text{CO}_2$  produced by the cells is called  
(A) Biological Respiration  
(B) Photosynthesis  
(C) Biological assimilation  
(D) Gaseous exchange
25. The myelin sheath around the axon is produced by which type of neuroglial cells?  
(A) Satellite glial cells  
(B) Radial glial cells  
(C) Dendrocytes  
(D) Schwann cells
26. During the process of sexual reproduction in flowering plants, double fertilization involves  
(A) Fertilization of egg cell by two male gametes  
(B) Fertilization of egg cell and a central cell by two male gametes brought by same pollen tube  
(C) Fertilization of egg cell and a central cell by two male gametes brought by different pollen tube  
(D) Fertilization of two egg cells by two male gametes brought by same pollen tube
27. Transfer of pollen grains from the anther to the stigma of another flower of the different plant is known as  
(A) Autogamy  
(B) Geitonogamy  
(C) Xenogamy  
(D) Cleistogamy
28. Typhlosole is a structure associated with  
(A) Circulatory system of earthworm  
(B) Digestive system of earthworm  
(C) Excretory system of earthworm  
(D) Reproductive system of earthworm

29. The accumulation of urea in the blood due to malfunctioning of kidneys is referred as  
(A) Uremia  
(B) Renal calculi  
(C) Edema  
(D) Glomerulonephritis
30. Placentation found in tomato is  
(A) Marginal  
(B) Axile  
(C) Parietal  
(D) Basal
31. *Bacillus thuringiensis* (Bt) strains have been used for designing novel  
(A) Bio-fertilizers  
(B) Bio-insecticidal plants  
(C) Bio-mineralization process  
(D) Bio-metallurgical techniques
32. Passive immunity is  
(A) Inherited from parents  
(B) Acquired through first exposure to the disease  
(C) Achieved directly through ready-made antibodies  
(D) Achieved through vaccination
33. The roots hanging from the branches of banyan tree are  
(A) Primary root  
(B) Fibrous root  
(C) Prop root  
(D) Pneumatophore
34. Axoneme is a structure associated with  
(A) Golgi bodies  
(B) Only cilia  
(C) Only flagella  
(D) Both cilia and flagella
35. Genes which code for a pair of contrasting characters are called  
(A) Factors  
(B) Traits  
(C) Alleles  
(D) Gametes
36. Which part of the plant contains sporogenous tissue?  
(A) Pollen  
(B) Microspores  
(C) Young anther  
(D) Stamen
37. During glycolysis fructose 1, 6-bisphosphate is split into  
(A) Dihydroxyacetone phosphate and 2-phosphoglyceraldehyde  
(B) Dihydroxyacetone phosphate and 1-phosphoglyceraldehyde  
(C) Dihydroxyacetone phosphate and 2-phosphoglycerate  
(D) Dihydroxyacetone phosphate and 3-phosphoglyceraldehyde
38. How many recombinant therapeutics have been used for human diseases throughout the world?  
(A) 12  
(B) 24  
(C) 30  
(D) 56
39. In IUCN Red List (2004) documents, the extinction of 784 species includes  
(A) 335 vertebrates, 360 invertebrates and 89 plants  
(B) 337 vertebrates, 362 invertebrates and 88 plants  
(C) 338 vertebrates, 359 invertebrates and 87 plants  
(D) 340 vertebrates, 357 invertebrates and 87 plants
40. Scientific names of plants are based on principles and criteria agreed by and are given in  
(A) IUCN  
(B) ICZN  
(C) ICBN  
(D) ICPN
41. Which mechanism of evolution affects the genetic makeup in a population?  
(A) Natural selection  
(B) Adaptation  
(C) Genetic drift  
(D) Gene mutation
42. First husband of Asha had ABO blood type A and their child had type O. She remarried and her second husband had ABO blood type B and their child had type AB. What is the ABO genotype of Asha and also name her blood type?  
(A)  $i i$ ; Blood type O  
(B)  $I_B I_O$ ; Blood type B  
(C)  $I_A I_B$ ; Blood type AB  
(D)  $I_A i$ ; Blood type A
43. Ozone hole is measured in  
(A) Decibel  
(B) Dobson units (DU)  
(C) Parts Per Million (PPM)  
(D) Cubic Centimeter

44. The number of individuals of the population who left the habitat and gone elsewhere during the time period under consideration is known as  
(A) Natality  
(B) Mortality  
(C) Emigration  
(D) Immigration
45. Rough Endoplasmic reticulum is actively involved in  
(A) Protein synthesis  
(B) Hormone synthesis  
(C) Lipid synthesis  
(D) Carbohydrate synthesis
46. Function of zinc in plants is  
(A) Sugar transport  
(B) Activation of enzymes  
(C) Cell elongation  
(D) Pollen germination
47. To produce one molecule of glucose Calvin Cycle turns  
(A) 2 times  
(B) 4 times  
(C) 6 times  
(D) 8 times
48. C4 plants have bundle sheath cells which possess  
(A) Few chloroplasts with thin walls so that gaseous exchange can take place  
(B) Large number of chloroplasts with thick walls impervious to gaseous exchange  
(C) Large number of chloroplasts and intercellular spaces  
(D) Few chloroplasts with thick walls and no intercellular spaces
49. Lindemann for the first time gave energy transfer law, which states that  
(A) Only 20% of the energy is transferred to each trophic level  
(B) Only 10% of the energy is transferred to each trophic level  
(C) Only 30% of the energy is transferred to each trophic level  
(D) Only 50% of the energy is transferred to each trophic level
50. The strategy used to prevent the nematode infection in the roots of tobacco plant is called  
(A) Use of Agro chemicals  
(B) Bt toxin gene  
(C) Gene mutation  
(D) RNA interference
51. When respiratory quotient is less than 1.0 in a respiratory metabolism, it means that  
(A) Carbohydrates are used as respiratory substrate  
(B) Volume of carbon dioxide evolved is less than volume of oxygen consumed  
(C) Volume of carbon dioxide evolved is more than volume of oxygen consumed  
(D) Volume of carbon dioxide evolved is equal to volume of oxygen consumed
52. An endocrine gland in human, which play a important role in the regulation of rhythm of the body is  
(A) Adrenal gland  
(B) Pineal gland  
(C) Thymus  
(D) Thyroid gland
53. In which techniques, the donor semen is artificially introduced into the uterus?  
(A) Intra-vaginal insemination  
(B) Intra-uterine insemination  
(C) Intracytoplasmic sperm injection  
(D) Gamete intra fallopian transfer
54. The depolarization of the atria is represented by  
(A) P-wave  
(B) Q-wave  
(C) T-wave  
(D) QRS complex
55. Somatic hybridization can be done by  
(A) Protoplast fusion  
(B) Cell culture  
(C) Haploid anther  
(D) Pollen culture
56. The embryo sac of angiosperms contains  
(A) 3 celled egg apparatus, 3 antipodal cell and 2 polar nuclei  
(B) 2 celled egg apparatus, 3 antipodal cell and 2 polar nuclei  
(C) 3 celled egg apparatus, 2 antipodal cell and 1 polar nuclei  
(D) 3 celled egg apparatus, 1 antipodal cell and 2 polar nuclei
57. Which one of the following is the specific xerophytic adaptation?  
(A) Presence of spines  
(B) Absence of stomata  
(C) Presence of long tap root system  
(D) Presence of stipular leaves

58. The middle part of the small intestine is  
(A) Duodenum  
(B) Jejunum  
(C) Ileum  
(D) Pyloric region
59. The nucleus of megaspore divides mitotically to form two nuclei which move to opposite poles, and thus form an embryo sac which is  
(A) 8 nucleate  
(B) 6 nucleate  
(C) 4 nucleate  
(D) 2 nucleate
60. The secretory immunoglobulin present in the colostrum of mother is  
(A) IgM  
(B) IgG  
(C) IgA  
(D) IgD
61. The enzyme involved in the crossing over between two homologous chromosome is  
(A) Nuclease  
(B) RNA Polymerase  
(C) Recombinase  
(D) DNA polymerase
62. Prothallus of Petridophytes is  
(A) Conspicuous, small, multicellular, free-living, photosynthetic thalloid gametophyte  
(B) Inconspicuous, small, multicellular, free-living, photosynthetic thalloid gametophyte  
(C) Inconspicuous, large, unicellular, free-living, photosynthetic thalloid gametophyte  
(D) Inconspicuous, small, multicellular, free-living, non-photosynthetic thalloid sporophyte
63. During the process of artificial hybridisation if the female plant bears bisexual flowers, then emasculation is done with the help of forceps, which is  
(A) Removal of style from the flower bud before the anther dehiscence  
(B) Removal of style from the flower bud after the anther dehiscence  
(C) Removal of anthers from the flower bud before anther dehiscence  
(D) Removal of anthers from the flower bud after the anther dehiscence
64. Widal test is done to confirm  
(A) Malaria  
(B) Typhoid  
(C) Pneumonia  
(D) Jaundice
65. Gene therapy is a treatment that can be done with  
(A) Adults only  
(B) Child or embryo only  
(C) Pregnant mothers only  
(D) Persons of any age and any condition
66. Who gave semi-conservative mode of DNA replication for the first time in *E.coli* with the help of  $^{15}\text{N}$  heavy nitrogen isotope?  
(A) Watson and Crick  
(B) Kornberg and Ochoa  
(C) Meselson and Stahl  
(D) Luria and Delbruck
67. Classification which is based on evolutionary relationship of various organisms is  
(A) Artificial classification  
(B) Natural classification  
(C) The Five Kingdom classification  
(D) Phylogenetic classification
68. Perinuclear space is present in  
(A) Cytoplasm  
(B) Nucleus  
(C) ER (Endoplasmic-Reticulum)  
(D) Golgi apparatus
69. When water moves out of the plant cell and the cell membrane of a plant shrinks away from its cell, then this condition is known as  
(A) Plasmolysis  
(B) Exosmosis  
(C) Hydrolysis  
(D) Endosmosis
70. During the transcription, if nucleotide sequence of DNA strand, is being coded as ATACG, then the nucleotide sequence of mRNA would be  
(A) UATGC  
(B) TATGC  
(C) UAUGC  
(D) TATGG
71. The epidermal hairs present on the stem of the plant is called  
(A) Trichomes  
(B) Root hairs  
(C) Stomata  
(D) Guard cells
72. Developing pollen is nourished by  
(A) Tapetum  
(B) Endothecium  
(C) Epidermis  
(D) Middle layer

73. During Incomplete Dominance, F2 generation will have
- (A) 3:1 genotypic ratio
  - (B) 3:1 phenotypic ratio
  - (C) 1:2:1 genotypic ratio
  - (D) 1:2:1 phenotypic ratio
74. The term Biomagnification refers to
- (A) Increase in concentration of non-degradable pollutant through a food chain
  - (B) Growth of organisms due to food consumption
  - (C) Decrease in population size
  - (D) Increase in population size
75. A nucleotide has three components:
- (A) A nitrogenous base, a hexose sugar and a phosphate group
  - (B) A nitrogenous base, a pentose sugar and a phosphate group
  - (C) A nitrogenous base, a pentose sugar and a bisphosphate group
  - (D) A nitrogenous base, a pentose sugar and a tri-phosphate group

Space for Rough Work: