

SEAL

DO NOT OPEN THE SEAL UNTIL INSTRUCTED TO DO SO

Question Booklet No. **850793**

Invigilator's signature

2018

TGT — PAPER - I : BIOLOGY

Time : 2 Hours

Maximum Marks : 100

ROLL NO.

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INSTRUCTIONS FOR CANDIDATES

1. This Question Booklet contains 50 optional questions. Each question comprises four responses (answers). You will select ONLY ONE response which you consider the best and darken the bubble on the OMR RESPONSE SHEET.
2. DO NOT write your Name or anything else except Roll No. and the actual answers to the question, anywhere on the OMR RESPONSE SHEET.
3. DO NOT handle your OMR RESPONSE SHEET in such a manner as to mutilate, fold, etc.
4. No candidate shall be admitted to the Examination Hall **20 minutes** after commencement of distribution of the Test Booklet. The invigilator of the Examination Hall will be the time-keeper and his decision in this regard is final.
5. No candidate shall have in his/her possession inside the Examination Hall any book, notebook or loose paper, calculator, mobile phone, etc., except his/her admit card and other things paper permitted by the Commission.
6. Immediately after the final bell indicating the closure of the examination, stop bubbling. Be seated till the OMR RESPONSE SHEET is collected by the invigilator, thereafter you may leave the Examination Hall.
7. Violation of any of the above rules will render the candidate liable to expulsion from the examination and disqualification from the examination, and according to the nature and gravity of his/her offence, he/she may be debarred from future examinations and interviews to be conducted by the Commission and other such organization (i.e., UPSC, SSC and SPSCs).

NB: CANDIDATES ARE ALLOWED TO TAKE THIS QUESTION BOOKLET ONLY AFTER COMPLETION OF 2 (TWO) HOURS OF EXAMINATION TIME.

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1. Branch of the science that deals with classification of organisms is known as
 - (A) Taxonomy
 - (B) Taxodermmy
 - (C) Toxicology
 - (D) Teratology
2. Which one of the following sequences is correct in classification of organisms in descending order from higher to lower hierarchy?
 - (A) Phylum, Family, Order, Genus, Species
 - (B) Phylum, Order, Genus, Family, Species
 - (C) Family, Order, Genus, Species, Phylum
 - (D) Phylum, Family, Order, Species, Genus
3. What type of inheritance do two alleles have if their traits blend together?
 - (A) Incomplete dominance
 - (B) Codominance
 - (C) Mendelian inheritance
 - (D) Homozygous inheritance
4. Paleontology is the branch of science that deals with the study of
 - (A) fossils
 - (B) evolution
 - (C) cell division
 - (D) hormones
5. Which layer of earth's atmosphere is known to contain ozone layer?
 - (A) Troposphere
 - (B) Stratosphere
 - (C) Mesosphere
 - (D) Tropopause
6. Three pairs of legs, head, thorax and abdomen are characteristics of
 - (A) spiders
 - (B) insects
 - (C) crabs
 - (D) nematodes
7. Water vascular system is the characteristic of which group of the following?
 - (A) Porifera
 - (B) Ctenophora
 - (C) Echinodermata
 - (D) Chordata
8. Which of the following is transversion mutation?
 - (A) G-C to A-T
 - (B) G-C to C-G
 - (C) C-G to T-A
 - (D) G-C to U-T
9. Which of the following is transition mutation?
 - (A) G-C to T-A
 - (B) A-T to C-G
 - (C) A-T to G-C
 - (D) A-T to T-A

10. Bone is derived from cells of
(A) ectoderm origin
(B) mesoderm origin
(C) endoderm origin
(D) both mesoderm and ectoderm origin
11. Point mutation involves
(A) change in single base pair
(B) insertion
(C) inversion
(D) deletion
12. Which of the following vitamins is associated with synthesis of collagen?
(A) Vitamin A
(B) Vitamin C
(C) Vitamin D
(D) Vitamin K
13. Which of the following is a hereditary disease?
(A) Rabies
(B) Colour blindness
(C) Polio
(D) Smallpox
14. Which one of the following is infectious disease?
(A) Alzheimer's disease
(B) Diabetes
(C) Cancer
(D) Tuberculosis
15. What is the function of the chorion in terrestrial vertebrate embryos?
(A) To keep embryos moist
(B) To exchange oxygen and carbon dioxide with environment
(C) To absorb nutrients from yolk sac
(D) To store nitrogenous waste
16. Loop of Henle is found in
(A) brain
(B) liver
(C) kidney
(D) heart
17. Which one is a neurotransmitter?
(A) Epinephrine
(B) Thyroxine
(C) Proline
(D) Insulin
18. Genetic drift refers to
(A) introduction of new allele in population
(B) a random loss of alleles in population
(C) loss of alleles in an individual
(D) change of a gene in an individual
19. Organisms using light as the energy source and an organic compound as the principal carbon source are called as
(A) chemoheterotroph
(B) chemoautotroph
(C) photoheterotroph
(D) photoautotroph
20. The occurrence of large or small beak sizes among seed crackers in the absence of medium sized beaks is an example of
(A) directional selection
(B) disrupting selection
(C) stabilizing selection
(D) None of the above
21. In which part of the nephrons glucose is absorbed?
(A) Distal tubule
(B) Proximal tubule
(C) Loop of Henle
(D) Collecting duct

22. Which vitamin deficiency causes night blindness?
 (A) Vitamin B
 (B) Vitamin A
 (C) Vitamin C
 (D) Vitamin D
23. Formation of carbonic acid from carbon dioxide and water during respiration is facilitated by the enzyme
 (A) carbonic anhydrase
 (B) carbonic oxidase
 (C) carbonic synthase
 (D) carbonic transferase
24. In which complex of mitochondria ATP is synthesized?
 (A) Complex I
 (B) Complex II
 (C) Complex IV
 (D) Complex V
25. A person having blood group AB can receive blood from
 (A) persons having O group blood only
 (B) persons having A group blood only
 (C) persons having B group blood only
 (D) persons having O or A or B group blood
26. The gene responsible for haemophilia is located on
 (A) Y chromosome
 (B) X chromosome
 (C) chromosome 19
 (D) chromosome 22
27. Branchial respiration is found in
 (A) cockroach
 (B) prawn
 (C) earthworm
 (D) starfish
28. Flow of genetic information for oncogenic virus when it enters its host cell is
 (A) RNA → DNA
 (B) RNA → RNA
 (C) DNA → DNA
 (D) DNA → RNA
29. Nitrification means conversion of
 (A) atmospheric nitrogen into ammonia
 (B) protein into ammonia
 (C) ammonia into nitrate
 (D) incorporation of nitrate into protein
30. The ratio of the offspring in F₁ generation of monohybrid cross is
 (A) 9 : 3 : 3 : 1
 (B) 5 : 3
 (C) 9 : 1
 (D) 3 : 1
31. Chitin which forms a part of hard exoskeleton in arthropod is
 (A) Protein
 (B) Fat and Protein
 (C) Carbohydrate
 (D) A combination of all of the above
32. Which of the following is produced by anterior pituitary gland?
 (A) Insulin
 (B) Thyroxine
 (C) Glucagon
 (D) Prolactin
33. The carbohydrate insoluble in water is
 (A) glucose
 (B) maltose
 (C) sucrose
 (D) cellulose
34. Which of the following is *not* a part of the innermost whorl of the flower?
 (A) Stamens
 (B) Stele
 (C) Pistil
 (D) Stigma

35. The male gametophyte of a flowering plant is the
- (A) pollen grain
 - (B) microspore
 - (C) sperm cell
 - (D) pollen sac
36. The pollen producing part of the flower is known as
- (A) anther
 - (B) ovary
 - (C) ovule
 - (D) receptacle
37. The fruits in plants develop from
- (A) microsporangia
 - (B) ovules
 - (C) ovaries
 - (D) fertilized eggs
38. The first step in germination of seed is
- (A) pollination
 - (B) fertilization
 - (C) imbibition of water
 - (D) hydrolysis of starch and food reserves
39. The biological conversion of nitrate to molecular nitrogen is known as
- (A) ammonification
 - (B) nitrogen fixation
 - (C) denitrification
 - (D) None of the above
40. Which of the following is *not* a greenhouse gas?
- (A) Carbon dioxide
 - (B) Methane
 - (C) Nitrous oxide
 - (D) Carbon monoxide
41. Non-biodegradable pollutants are the result of
- (A) activities in nature
 - (B) human activity
 - (C) natural disaster
 - (D) All of the above
42. Global warming also refers to as
- (A) climate change
 - (B) ecological change
 - (C) atmosphere change
 - (D) None of the above
43. The high BOD indicates
- (A) high level of pollution
 - (B) low level of pollution
 - (C) high concentration of oxygen
 - (D) high productivity
44. Which of the following is *not* a biofertilizer?
- (A) Azolla
 - (B) Rhizobium
 - (C) Sinorhizobium
 - (D) Cycloclasticus

45. The disease cholera is caused by the species of
- (A) Pseudomonas
 - (B) Vibrio
 - (C) Streptococcus
 - (D) Staphylococcus
46. Immunity to body is provided by
- (A) blood platelets
 - (B) lymphocytes
 - (C) RBC
 - (D) All of the above
47. Acid rain is caused by the emission of
- (A) sulfur dioxide
 - (B) nitrogen oxide
 - (C) Both (A) & (B)
 - (D) carbon dioxide
48. Which of the following is plant growth regulator?
- (A) Auxins
 - (B) Gibberellins
 - (C) Cytokinins
 - (D) All of the above
49. The abnormal secondary growth is found in
- (A) Dracaena
 - (B) Cucurbita
 - (C) Cactus
 - (D) Triticum
50. The largest ecosystem on the earth is
- (A) grassland
 - (B) desert
 - (C) forest
 - (D) ocean