

SEAL

Test Booklet Number

31176

[Time : 1 Hour]

Subject Code - 1203

BIOLOGY

Roll Number

[Maximum Marks : 200]

INSTRUCTIONS TO CANDIDATES

Read the following instructions carefully before you answer the questions given in this Test Booklet :

1. Answers to questions in this Test Booklet are to be given on an **OMR Answer Sheet** provided to the candidate **separately**.
2. Candidate must fill up Name, Category, Test Booklet Number, Subject Code and Roll Number in the Answer Sheet carefully as per instructions given.
3. This Test Booklet consists of 50 questions. All questions are compulsory and carry equal marks.
4. Each question in this Test Booklet has four possible alternative answers namely, (A), (B), (C) and (D), one of which is correct. Candidate should choose the correct answer against each question out of four alternative answers.
5. Candidate is instructed to answer the questions by **darkening (●)** with **Ball Point Pen** only in the circle bearing the correct answer.
6. Candidate should not attempt more than one answer in each question. More than one attempt in any form against a question shall be treated as incorrect.
7. Marking of answer other than darkening shall be cancelled and darkening should remain within the circle or otherwise computer shall not accept during evaluation of answer-script.
8. Rough work must not be done on the Answer Sheet. Use the blank space given in the Test Booklet for rough work.
9. Candidate is to hand over the Answer sheet to the Invigilator before leaving the Examination Hall.
10. **NEGATIVE MARKING** : Each question carries 4 (four) marks for correct response. For each incorrect response, 1 (one) mark will be deducted from the total score. More than one answer indicated against a question will be deemed as incorrect response and will be negatively marked.

P.T.O.**SEAL****SEAL**

BIOLOGY

1. Pollen grains are able to tolerate extreme of temperature and desiccation because they remain covered by an exine formed of
 - (A) cutin
 - (B) sporopollenin
 - (C) chitin
 - (D) suberin
2. Which is correct taxonomic hierarchy ?
 - (A) Genus, Species, Family, Order, Class
 - (B) Species, Genus, Family, Order, Class
 - (C) Species, Order, Genus, Class, Family
 - (D) Species, Genus, Family, Class, Order
3. The stalk of the ovule is called
 - (A) Funicle
 - (B) Petiole
 - (C) Pedicel
 - (D) Hilum
4. Which of the following pairs is not correctly matched ?
 - (A) Mosses – Protonema
 - (B) Liverworts – Gemmae
 - (C) Pteridophytes – Hyphae
 - (D) Gymnosperm – Strobili
5. The flowers pollinated by wind are known as
 - (A) Zoophilous
 - (B) Hydrophilous
 - (C) Entomophilous
 - (D) Anemophilous
6. Which is the incorrect statement ?
 - (A) Fishes have two-chambered heart
 - (B) Crocodile has three-chambered heart
 - (C) Pigeon has four-chambered heart
 - (D) Cat has four-chambered heart
7. The embryo with 8 to 16 blastomeres is called
 - (A) Blastula
 - (B) Morula
 - (C) Gastrula
 - (D) Blastomere
8. Which of the following is most appropriate?
 - (A) Thorn and spine both are modified stems
 - (B) Thorn is modified leaf and spine is a modified stem
 - (C) Thorn and spine both are modified leaves
 - (D) Thorn is a modified stem and spine is a modified leaf
9. Ovulation in the human female normally takes place during the menstrual cycle
 - (A) at the mid-secretory phase
 - (B) just before the end of the secretory phase
 - (C) at the beginning of the proliferative phase
 - (D) at the end of the proliferative phase
10. The correct sequence of tissue layers in uterus wall (from inside to outside) is
 - (A) Perimetrium, Myometrium, Endometrium
 - (B) Perimetrium, Endometrium, Myometrium
 - (C) Endometrium, Myometrium, Perimetrium
 - (D) Myometrium, Perimetrium, Endometrium

11. The condition in which filaments are united into more than two bundle groups but anthers are free, is called
 - (A) Diadelphous
 - (B) Syngenesious
 - (C) Polyadelphous
 - (D) Synandrous
12. ZIFT involves
 - (A) transfer of zygote into fallopian tube
 - (B) transfer of zygote into uterus
 - (C) transfer of embryo into uterus
 - (D) transfer of ova in fallopian tube
13. Annual growth ring pattern is distinctly seen in plants growing in
 - (A) desert
 - (B) ponds and ditches
 - (C) arctic regions
 - (D) places with seasonal variations
14. In sickle-cell anaemia, which of the following is amino acid that substitutes glutamic acid?
 - (A) Valine
 - (B) Phenylalanine
 - (C) Methionine
 - (D) Serine
15. In a cross between $TtRR \times ttrr$ and subsequent selfing the F_1 progeny, 9 : 3 : 3 : 1 ratio was obtained in F_2 . If Tall is dominant over dwarf and Round seed is dominant over wrinkled seed, and total members of F_2 are 1600, how many of them are likely to be wrinkled?
 - (A) 100
 - (B) 400
 - (C) 300
 - (D) 600
16. In frog, ureter opens into
 - (A) urinary bladder
 - (B) anus
 - (C) cloaca
 - (D) uterus
17. Number of different types of gametes produced by an individual with genotype $AaBbCc$ will be
 - (A) 8
 - (B) 64
 - (C) 16
 - (D) 4
18. When the chromosome number of an individual does not occur in multiples of haploid set, this condition is called
 - (A) Heterogameity
 - (B) Aneuploidy
 - (C) Polyploidy
 - (D) Diploidy
19. What will happen if all the ribosomes of a cell are destroyed?
 - (A) Fats will not be stored
 - (B) Respiration will not take place
 - (C) Photosynthesis will not occur
 - (D) Proteins will not be formed
20. Which enzyme catalyses the synthesis of a new strand for a DNA molecule by linking nucleotides to the developing strand?
 - (A) Topoisomerase
 - (B) DNA polymerase
 - (C) RNA polymerase
 - (D) DNA ligase

21. If the cells in the stem of an angiosperm have 16 chromosomes, 8 chromosomes will be present in
 (A) root cells
 (B) leaf cells
 (C) synergids
 (D) cotyledons
22. DNA fingerprinting refers to
 (A) molecular analysis of profiles of DNA samples
 (B) analysis of DNA samples using imprinting devices
 (C) techniques used for molecular analysis of different specimens of DNA
 (D) techniques used for identification of fingerprints of individuals
23. If the cells of onion peel and RBC are separately kept in hypotonic solution, what will happen after sometime?
 (A) Both RBC and onion peel cells will shrink
 (B) RBC will swell and onion peel cells remain unaffected
 (C) RBC will swell and burst easily while onion peel cells will swell but resist the burst
 (D) Both RBC and onion peel cells will burst
24. The distance between two strands of a DNA strand is
 (A) 3.4 \AA
 (B) 20 \AA
 (C) 34 \AA
 (D) 10 \AA
25. Which one of the following sets includes only structures showing divergent evolution?
 (A) Forelimbs of whale, bat, horse and man
 (B) Forelimbs of whale, bat, bird and donkey
 (C) Forelimbs of man, dog, bat and crow
 (D) Forelimbs of crow, pigeon, ostrich and bat
26. Which of the following elements are required in traces by plants?
 (A) Magnesium and Zinc
 (B) Zinc and Manganese
 (C) Manganese and Magnesium
 (D) Zinc and Potassium
27. Which of the following factors is not known to affect Hardy-Weinberg equilibrium?
 (A) Genetic drift
 (B) Mutation
 (C) Population size
 (D) Natural selection
28. Rubis CO enzyme catalyses the carboxylation reaction between
 (A) oxaloacetic acid and acetyl CoA
 (B) ribulose 1,5-bisphosphate and CO_2
 (C) PGA and dihydroxy acetone phosphate
 (D) RuBP and phosphoglyceraldehyde
29. Which inorganic constituents were taken by S. L. Miller to prove formation of organic molecules in 1953?
 (A) CH_4 , NH_3 , H_2 and H_2O
 (B) NH_3 , H_2 , CH_4 and CO_2
 (C) CH_4 , N_2 , H_2O and H_2
 (D) NH_3 , CH_4 , H_2O and N_2

30. Where does Krebs' cycle occur ?
 (A) Chloroplast
 (B) Cytoplasm
 (C) Mitochondria
 (D) Golgi complex
31. All food chains in a community give rise to a / an
 (A) food web
 (B) biosphere
 (C) ecosystem
 (D) climax community
32. Which of the following is not part of ex situ conservation ?
 (A) Zoological parks
 (B) Wildlife sanctuaries
 (C) Wildlife safari parks
 (D) Botanical garden
33. The hormone melatonin is secreted by
 (A) thyroid gland
 (B) pituitary gland
 (C) pineal gland
 (D) adrenal gland
34. The decrease in oxygen content in water due to algal bloom is called
 (A) Denitrification
 (B) Eutrophication
 (C) Biomagnification
 (D) Infestation
35. Amrita Devi Bishnoi Wildlife Protection Award has been instituted by the Government in the memory of Amrita Devi Bishnoi who in 1731 sacrificed her life with 363 persons for the protection of
 (A) Sal trees in Midnapore District
 (B) Khejri trees in Khejri Village
 (C) Tigers in India
 (D) Trees in Reni Village
36. A pathogen is a
 (A) type of cell in the blood which controls clotting
 (B) disease-transmitted insect
 (C) protein found on the surface of red blood corpuscles
 (D) micro-organism which causes disease
37. Breeding crops with higher levels of vitamins and minerals or higher protein and healthier fats are
 (A) biomagnification
 (B) conventional breeding
 (C) biofortification
 (D) artificial insemination
38. Which of the following would happen if a seedling is artificially placed with its radicle pointing upwards ?
 (A) It will keep growing straight
 (B) It will bend so as to move towards the ground
 (C) It will stop growing
 (D) It will grow parallel to the ground
39. Superovulation and embryo transplantation are meant for improving
 (A) poultry
 (B) livestock
 (C) plants
 (D) mule
40. A major component of biogas is
 (A) ethane
 (B) methane
 (C) CO_2
 (D) H_2
41. Which of the following form of teeth are not represented in milk teeth ?
 (A) Premolars
 (B) Molars
 (C) Incisors
 (D) Canines

42. Pomato is
 (A) somaclonal variant
 (B) natural mutant
 (C) polyploid
 (D) somatic hybrid
43. Which one of the following is not true for restriction endonuclease ?
 (A) Functions by 'inspecting' the length of a DNA sequence
 (B) Make cuts at specific position within DNA
 (C) Used to form 'recombinant' molecules of DNA in genetic engineering
 (D) Removes nucleotides from the ends of the DNA
44. The maximum volume of air a person can breathe in after a forced expiration is called
 (A) Vital capacity
 (B) Total lung capacity
 (C) Total volume
 (D) Lung capacity
45. Which is correctly matched ?
 (A) Gel electrophoresis – Amplification of gene of interest
 (B) Microinjection – uses gold or tungsten coated with DNA
 (C) Selectable Marker – Insertion of recombinant DNA into host cell
 (D) Restriction exonucleases – Recognize palindromic nucleotide sequences
46. In which part of human SA node is located ?
 (A) Lower lateral part of right atrium
 (B) Upper lateral wall of right atrium
 (C) Upper lateral wall of left atrium
 (D) Lower lateral wall of left atrium
47. Commensalism is the interaction between two species where
 (A) one species is benefitted and the other is harmed
 (B) one species is harmed whereas the other is unaffected
 (C) one species is benefitted and the other is neither benefitted nor harmed
 (D) both the species are benefitted
48. In kidneys, which of the following parts absorbs glucose ?
 (A) Bowman's capsule
 (B) Proximal part of convoluted tubules
 (C) Distal part of convoluted tubule
 (D) Loop of Henle
49. Path of energy flow in an ecosystem is
 (A) Producers → Carnivores → Herbivores → Decomposers
 (B) Herbivores → Producers → Carnivores - Decomposers
 (C) Herbivores → Carnivores → Producers → Decomposers
 (D) Producers → Herbivores → Carnivores → Decomposers
50. In a synapse, chemical signal is transmitted from
 (A) cell body to axonal end of the same neuron
 (B) axon to cell body of the same neuron
 (C) axonal end of one neuron to dendritic end of another neuron
 (D) dendritic end of one neuron to axonal end of another neuron