Signature of Invigilators

1. .....

2. .....

LIFE SCIENCE

Paper II

Roll No. | | | | | | |

(In figures as in Admit Card)

Roll No. .....

.....

(In words)

D—0402

Name of the Areas/Section (if any) .....

Time Allowed : 75 Minutes] [Maximum Marks : 100

Instructions for the Candidates

1. Write your Roll Number in the space provided on the top of this page.
2. This paper consists of *fifty* **(50)** multiple choice type questions. *All* questions are compulsory.
3. Each item has upto four alternative responses marked (A), (B), (C) and (D). The answer should be a capital letter for the selected option. The answer letter 'A' should entirely be contained within the corresponding square.

   Correct method [A] Wrong Method [A] or [A]
4. Your responses to the items for this paper are to be indicated on the ICR Answer Sheet under paper II only.
5. Read instructions given inside carefully.
6. One sheet is attached at the end of the booklet for rough work.
7. You should return the test booklet to the invigilator at the end of paper and should not carry any paper with you outside the examination hall.

પરીક્ષાર્થીઓ માટે સૂચનાઓ :

૧. આ પૃષ્ઠના ઉપલા ભાગે આપેલી જગ્યામાં તમારી ક્રમાંક સંખ્યા (રોલ નંબર) લખો.

૨. આ પ્રશ્નપત્રમાં **૫૦ (પચાસ)** બહુવૈકલ્પિક ઉત્તરોવાળા પ્રશ્નો છે. **બધા જ** પ્રશ્નોના ઉત્તરો આપવા ફરજિયાત છે.

૩. પ્રત્યેક વિગતના (A), (B), (C) અને (D) એવા ચાર સંભવિત ઉત્તરો આપવામાં આવ્યા છે. તમે સ્વીકારેલા વિકલ્પનો ઉત્તર કેપિટલ (પહેલી એબીસીડી) અક્ષરમાં આપવાનો રહેશે.તમારા ઉત્તર આપેલા ચોરસમાં સરખી રીતે લખવા.

   સાચી પદ્ધતિ : [A] ખોટી પદ્ધતિ : [A] , [A]

૪. આ પ્રશ્નપત્રના ઉત્તરો આઈસીઆરના ઉત્તરપત્રકમાં Paper II ની નીચે લખવાના રહેશે.

૫. અંદર આપેલી સૂચનાઓ ધ્યાનથી વાંચો.

૬. આ ઉત્તરપોથીને અંતે આપેલું પૃષ્ઠ કાચા કામ માટે છે.

૭. પ્રશ્નપત્ર લખાઈ રહે એટલે આ ઉત્તરપોથી તમારા નિરીક્ષકને આપી દેવી. પરીક્ષાખંડની બહાર કોઈપણ પ્રશ્નપત્ર લઈ જવું નહીં.

SEAL

LIFE SCIENCE

Paper II

Note :—This paper contains *fifty* (**50**) multiple choice questions, each question carrying **two** (**2**) marks. Attempt *all* the questions.

1. In flowering plants, meiosis takes place in anthers and ovaries, and the products are :

   (A) Microspores (B) Meiospores

   (C) Meiocytes (D) Pollen grains

2. Wild and early domestications of wheat led to the development of the following wheats which are now used primarily for pasta and noodle :

   (A) Einkorn (B) Emmer

   (C) Poulard (D) Durum

3. Phytochrome is converted to the following form on exposure to far red light :

   (A) Pfr (B) Pr

   (C) Po (D) Pb

4. The three different processes in evolution like anagenesis, cladogenesis and stasigenesis were recognised by :

   (A) Huxley (B) Linnaeus

   (C) de Candolle (D) Darwin

5. The locust gum is obtained from :

   (A) *Ceratonia siliqua*

   (B) *Cyamopsis tetragonolobus*

   (C) *Anogeissus latifolia*

   (D) *Astragalus gummifer*

6. α-amylase bioassay is for the following hormone :

(A) Cytokinin (B) Gibberellin

(C) Auxin (D) Ethylene

7. One of the primary pre-requisites for speciation in panmictic lineages is :

(A) Geographic isolation (B) Introduction

(C) Plant breeding (D) Hybridization

8. Non-point stressors are :

(A) Acid rain (B) Diseases

(C) Pollution (D) All of these

9. The presence of NAD^+ malic enzyme allows complete oxidation of the following in the absence of pyruvate :

(A) Malate (B) Citrate

(C) 2-oxoglutarate (D) All of these

10. The Calvin cycle was elucidated by the use of the following radioactive isotope :

(A) Carbon (B) Oxygen

(C) Hydrogen (D) Nitrogen

11. In *Melandrium* the sex determination is through the following mechanism :

(A) ZW (B) XY

(C) XO (D) XXX

12. The major categories as stipulated in the International Code are :

(A) Kingdom, division, sub-division, class, sub-class, order, sub-order, family, sub-family, tribe

(B) Kingdom, division, class, order, family, tribe

(C) Kingdom, division, order, class, tribe, family

(D) Kingdom, division, order, class, family, tribe

13. The C_4 type of photosynthetic pathway evolved as a response to the following changes in the atmosphere :

(A) Carbon and oxygen concentrations

(B) Water and wind speeds

(C) Atmospheric humidity

(D) Stomatal evolution

14. Amitosis is :

(A) Cell division involving formation of chromosome bridges

(B) Cell division involving spindle formation

(C) Cell division in which chromosomes are unequally distributed

(D) Cleavage of nucleus without recognizable chromosome distribution

15. Which of the following is *not* a Ca^+ dependent cell-cell adhesion molecule ?

(A) E-cadherin (B) Selectin

(C) N. CAM (D) Catenin

16. Which of the following immunoglobulins is a pentamer ?

(A) IgG (B) IgD

(C) IgM (D) IgE

17. Retinoblastoma gene (Rb) is helpful for :

(A) regulation of cell cycle

(B) inhibition of metastasis

(C) inhibition of telomerase

(D) activation for production of interferon

18. Indicate which of the following immunoglobulin-switches can occur :

(A) IgM to IgD (B) IgM to IgA

(C) IgE to IgG (D) IgA to IgG

19. Which of the following *does not* participate in the formation of antigen-antibody complexes ?

(A) Hydrophobic bonds (B) Covalent bonds

(C) Electrostatic interactions (D) Hydrogen bonds

20. One of the following is a major technique for the study of enzyme mechanism :

(A) NMR spectroscopy

(B) X-ray diffraction

(C) Polyacrylamide gel electrophoresis

(D) Confocal microscopy

21. One of the following is *not* true for RNA polymerase :

(A) It requires a template

(B) Synthesis proceeds in the 5′ → 3′ direction

(C) It utilizes 5′-nucleoside triphosphates as substrates

(D) It requires a primer

22. All, except one, of the following processes occur in mitochondria of mammalian cells. The exception is :

(A) Fatty acid biosynthesis (B) Protein synthesis

(C) DNA synthesis (D) β-oxidation of fatty acids

23. One of the following is *not* a part of gluconeogenic path in animals :

(A) enolase

(B) glyceraldehyde-3-phosphate dehydrogenase

(C) aldolase

(D) pyruvate kinase

24. Which one of the following is *not* a stop codon ?

(A) UAA (B) UAG

(C) UGA (D) UGG

25. The largest subunit of DNA is :

(A) Recon (B) Muton

(C) Operon (D) Cistron

26. Acromegaly is the result of :

(A) Increased growth hormone secretion prior to adolescence

(B) Decreased growth hormone secretion prior to adolescence

(C) Increased growth hormone secretion in adults

(D) Decreased growth hormone secretion in adults

27. The signalling of all peptide hormones involve :

(A) Cyclic AMP formation

(B) Mediates its action through a protein

(C) Activates protein kinase C

(D) None of these

28. Anaemia during pregnancy can be alleviated by intake of :

(A) Riboflavin (B) Folic acid

(C) Cyanobacterin (D) Pantothenic acid

29. Pernecious anaemia occurs in deficiency of :

(A) Tocopherol (B) Monadione

(C) Cholecalciferol (D) Cyanocobalamin

30. Calcitonin is secreted by :

(A) Thyroid (B) Parathyroid

(C) Kidney (D) VMH

31. Stress physiology was extensively studied by :

(A) Claude Bernard (B) Hans Selye

(C) T.B.S. Haldane (D) George Wald

32. Pyrimidine dimer formation induced by UV radiation can be repaired by :

(A) Visible light (B) Infra-red rays

(C) Gamma rays (D) X-rays

33. The pattern of inheritance when characters pass from mother to grand-daughter through her son is called.....sex linkage.

(A) Diandric (B) Digenic

(C) Hologenic (D) Holandric

34. Multiple phenotypic effects by one gene is called :

(A) Phenocopy (B) Polymorphism

(C) Polyploidy (D) Pleiotropy

35. One of the following is *not* a plant hormone :

(A) Auxins (B) Gibberellins

(C) Traumatic acid (D) Melatonin

36. Labour pains and secretion of milk occur simultaneously under the influence of :

(A) Estrogen

(B) Corpus luteal hormone

(C) Follicular stimulating hormone

(D) Oxytocin

37. Histones are :

(A) Acidic proteins (B) Basic proteins

(C) Mucoproteins (D) Glycoproteins

38. Acrydine dyes are strong mutagenic agents resulting in :

(A) Frameshift mutations (B) Lethal mutations

(C) Transition mutations (D) Transverse mutations

39. Which of the following methods of DNA repair is most error-prone ?

(A) Excision repair (B) SOS

(C) Recombination repair (D) Photoreactive repair

40. The early organisms were :

(A) autotrophic aerobic (B) autotrophic anaerobic

(C) heterotrophic aerobic (D) heterotrophic anaerobic

41. The concept of continuity of germplasm was given by :

(A) Charles Darwin (B) Weismann

(C) Lamarck (D) Hugo de Vries

42. Genetic drift is an account of :

(A) Variation (B) Mutation

(C) Increase in population (D) Decrease in population

43. The person, who shared honours in proposing theory of natural selection in evolution with Charles Darwin, was :

(A) Gregor Mendel (B) Alfred Wallace

(C) Louis Pasteur (D) Wilhelm Roux

44. The maximum forest cover in square kilometers is in :

(A) Maharashtra (B) Madhya Pradesh

(C) Andhra Pradesh (D) Orissa

45. Which of the following is *not* a greenhouse gas ?

(A) Sulphur dioxide (B) Carbon dioxide

(C) Nitrous oxide (D) Methane

46. Bioremediation is accomplished :

(A) only with genetically engineered microbes

(B) with any microbe that removes toxic pollutant

(C) with specially isolated strains of bacteria

(D) in a pilot plant fermentor

47. Process by which microbes bring about chemical alteration of pesticides without deriving sufficient carbon and energy is called :

(A) co-metabolism (B) co-catabolism

(C) co-oxidation (D) co-anabolism

48. Biological control involves :

(A) use of animal against animal

(B) using plant against animal

(C) using animal against plant

(D) using any living form against another pest

49. Orchid diversity is the highest in our country in :

(A) Himachal Pradesh (B) Arunachal Pradesh

(C) West Bengal (D) Madhya Pradesh

50. Maximum non-forest degraded area is found in :

(A) Madhya Pradesh (B) Rajasthan

(C) Gujarat (D) Uttar Pradesh

ROUGH WORK

ROUGH WORK

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