

Test Paper : II
Test Subject : LIFE SCIENCES
Test Subject Code : K-2817

Test Booklet Serial No. : _____

OMR Sheet No. : _____

Roll No.

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(Figures as per admission card)

Name & Signature of Invigilator/s

Signature : _____

Name : _____

Paper : II
Subject : LIFE SCIENCES

Time : 1 Hour 15 Minutes

Maximum Marks : 100

Number of Pages in this Booklet : 8

Number of Questions in this Booklet : 50

ಅಭ್ಯರ್ಥಿಗಳಿಗೆ ಸೂಚನೆಗಳು

- ಈ ಪುಟದ ಮೇಲ್ಭಾಗದಲ್ಲಿ ಒದಗಿಸಿದ ಸ್ಥಳದಲ್ಲಿ ನಿಮ್ಮ ರೋಲ್ ನಂಬರ್‌ನ್ನು ಬರೆಯಿರಿ.
- ಈ ಪತ್ರಿಕೆಯು ಬಹು ಆಯ್ಕೆ ವಿಧದ ಐವತ್ತು ಪ್ರಶ್ನೆಗಳನ್ನು ಒಳಗೊಂಡಿದೆ.
- ಪರೀಕ್ಷೆಯ ಪ್ರಾರಂಭದಲ್ಲಿ ಪ್ರಶ್ನೆಪುಸ್ತಕವನ್ನು ನಿಮಗನಿಡಲಾಗುವುದು. ಮೊದಲ 5 ನಿಮಿಷಗಳಲ್ಲಿ ನಿವು ಪುಸ್ತಕವನ್ನು ತೆರೆಯಲು ಮತ್ತು ಕೆಳಗಿನಂತೆ ಕಡ್ಡಾಯವಾಗಿ ಪರೀಕ್ಷಿಸಲು ಕೋರಲಾಗಿದೆ.
(i) ಪ್ರಶ್ನೆ ಪುಸ್ತಕಕ್ಕೆ ಪ್ರವೇಶಾಪಕಾರ ಪಡೆಯಲು, ಈ ಹೊದಿಕೆ ಪುಟದ ಅಂಚಿನ ಮೇಲಿರುವ ಪೇಪರ್ ಸೀಲನ್ನು ಹರಿಯಿರಿ. ಸ್ವಿಚ್‌ರ್ ಸೀಲ್ ಇಲ್ಲದ ಅಥವಾ ತೆರದ ಪುಸ್ತಕವನ್ನು ಸ್ವೀಕರಿಸಬೇಡಿ.
(ii) ಪುಸ್ತಕಿಯಲ್ಲಿನ ಪ್ರಶ್ನೆಗಳ ಸಂಖ್ಯೆ ಮತ್ತು ಪುಟಗಳ ಸಂಖ್ಯೆಯನ್ನು ಮುಖಪುಟದ ಮೇಲೆ ಮುದ್ರಿಸಿದ ಮಾಹಿತಿಯೊಂದಿಗೆ ತಾಳಿ ನೋಡಿರಿ. ಪುಟಗಳು/ಪ್ರಶ್ನೆಗಳು ಕಾಣೆಯಾದ, ಅಥವಾ ದ್ವಿಪ್ರತಿ ಅಥವಾ ಅನುಕ್ರಮವಾಗಿಲ್ಲದ ಅಥವಾ ಇತರ ಯಾವುದೇ ವ್ಯತ್ಯಾಸದ ದೋಷಪೂರಿತ ಪುಸ್ತಕವನ್ನು ಕೂಡಲೇ 5 ನಿಮಿಷದ ಅವಧಿ ಒಳಗೆ, ಸಂವಿಚ್ಛೇದಿಸಿ ಸರಿ ಇರುವ ಪುಸ್ತಕಕ್ಕೆ ಬದಲಾಯಿಸಿಕೊಳ್ಳಬೇಕು. ಆ ಬಳಿಕ ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಯನ್ನು ಬದಲಾಯಿಸಲಾಗುವುದಿಲ್ಲ. ಯಾವುದೇ ಹೆಚ್ಚು ಸಮಯವನ್ನೂ ಕೊಡಲಾಗುವುದಿಲ್ಲ.
- ಪ್ರತಿಯೊಂದು ಪ್ರಶ್ನೆಗೂ (A), (B), (C) ಮತ್ತು (D) ಎಂದು ಗುರುತಿಸಿದ ನಾಲ್ಕು ಪರ್ಯಾಯ ಉತ್ತರಗಳಿವೆ. ನಿವು ಪ್ರಶ್ನೆಯ ಎದುರು ಸರಿಯಾದ ಉತ್ತರದ ಮೇಲೆ, ಕೆಳಗೆ ಕಾಣಿಸಿದಂತೆ ಅಂಡಾಕೃತಿಯನ್ನು ಕವಚಿಸಬೇಕು.
ಉದಾಹರಣೆ : (A) (B) (C) (D)
(C) ಸರಿಯಾದ ಉತ್ತರವಾಗಿದ್ದಾಗ.
- ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆ I ರಲ್ಲಿ ಕೊಟ್ಟಿರುವ OMR ಉತ್ತರ ಹಾಳೆಯಲ್ಲಿ, ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆ I ಮತ್ತು ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆ II ರಲ್ಲಿ ಇರುವ ಪ್ರಶ್ನೆಗಳಿಗೆ ನಿಮ್ಮ ಉತ್ತರಗಳನ್ನು ಸೂಚಿಸತಕ್ಕದ್ದು OMR ಹಾಳೆಯಲ್ಲಿ ಅಂಡಾಕೃತಿಯಲ್ಲದ ಬೇರೆ ಯಾವುದೇ ಸ್ಥಳದಲ್ಲಿ ಉತ್ತರವನ್ನು ಗುರುತಿಸಿದರೆ, ಅದರ ಮೌಲ್ಯಮಾಪನ ಮಾಡಲಾಗುವುದಿಲ್ಲ.
- OMR ಉತ್ತರ ಹಾಳೆಯಲ್ಲಿ ಕೊಟ್ಟ ಸೂಚನೆಗಳನ್ನು ಜಾಗರೂಕತೆಯಿಂದ ಓದಿರಿ.
- ಎಲ್ಲಾ ಕರಡು ಕೆಲಸವನ್ನು ಪುಸ್ತಕಿಯ ಕೊನೆಯಲ್ಲಿ ಮಾಡತಕ್ಕದ್ದು.
- ನಿಮ್ಮ ಗುರುತನ್ನು ಬಹಿರಂಗಪಡಿಸಬಹುದಾದ ನಿಮ್ಮ ಹೆಸರು ಅಥವಾ ಯಾವುದೇ ಚಿಹ್ನೆಯನ್ನು ಸಂಗತವಾದ ಸ್ಥಳ ಹೊರತು ಪಡಿಸಿ, OMR ಉತ್ತರ ಹಾಳೆಯ ಯಾವುದೇ ಭಾಗದಲ್ಲಿ ಬರೆಯಬಾರದು, ನಿವು ಅನರ್ಪಣೆಗೆ ಬಾಧ್ಯರಾಗಿರುತ್ತೀರಿ.
- ಪರೀಕ್ಷೆಯು ಮುಗಿದನಂತರ, ಕಡ್ಡಾಯವಾಗಿ OMR ಉತ್ತರ ಹಾಳೆಯನ್ನು ಸಂವಿಚ್ಛೇದಿಸಿ ನಿವು ಹಿಂತಿರುಗಿಸಬೇಕು ಮತ್ತು ಪರೀಕ್ಷಾ ಕೋಠಿಯ ಹೊರಗೆ OMR ನ್ನು ನಿಮ್ಮೊಂದಿಗೆ ಕೊಂಡೊಯ್ಯಕೂಡದು.
- ಪರೀಕ್ಷೆಯ ನಂತರ, ಪರೀಕ್ಷಾ ಪ್ರಶ್ನೆಪತ್ರಿಕೆಯನ್ನು ಮತ್ತು ನಕಲು OMR ಉತ್ತರ ಹಾಳೆಯನ್ನು ನಿಮ್ಮೊಂದಿಗೆ ತೆಗೆದುಕೊಂಡು ಹೋಗಬಹುದು.
- ನೀಲಿ/ಕಪ್ಪು ಬಾಲ್‌ಪಾಯಿಂಟ್ ಪೆನ್ ಮಾತ್ರವೇ ಉಪಯೋಗಿಸಿರಿ.
- ಕ್ಯಾಲ್ಕುಲೇಟರ್, ವಿದ್ಯುನ್ಮಾನ ಉಪಕರಣ ಅಥವಾ ಲಾಗ್ ಟೇಬಲ್ ಇತ್ಯಾದಿಯ ಉಪಯೋಗವನ್ನು ನಿಷೇಧಿಸಲಾಗಿದೆ.
- ಸರಿ ಅಲ್ಲದ ಉತ್ತರಗಳಿಗೆ ಋಣ ಅಂಕ ಇರುವುದಿಲ್ಲ.
- ಕನ್ನಡ ಮತ್ತು ಇಂಗ್ಲೀಷ್ ಆವೃತ್ತಿಗಳ ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಗಳಲ್ಲಿ ಯಾವುದೇ ರೀತಿಯ ವ್ಯತ್ಯಾಸಗಳ ಕಂಡುಬಂದಲ್ಲಿ, ಇಂಗ್ಲೀಷ್ ಆವೃತ್ತಿಗಳಲ್ಲಿರುವುದೇ ಅಂತಿಮವೆಂದು ಪರಿಗಣಿಸಬೇಕು.

Instructions for the Candidates

- Write your roll number in the space provided on the top of this page.
- This paper consists of fifty multiple-choice type of questions.
- At the commencement of examination, the question booklet will be given to you. In the first 5 minutes, you are requested to open the booklet and compulsorily examine it as below :
(i) To have access to the Question Booklet, tear off the paper seal on the edge of the cover page. Do not accept a booklet without sticker seal or open booklet.
(ii) **Tally the number of pages and number of questions in the booklet with the information printed on the cover page. Faulty booklets due to pages/questions missing or duplicate or not in serial order or any other discrepancy should be got replaced immediately by a correct booklet from the invigilator within the period of 5 minutes. Afterwards, neither the Question Booklet will be replaced nor any extra time will be given.**
- Each item has four alternative responses marked (A), (B), (C) and (D). You have to darken the circle as indicated below on the correct response against each item.
Example : (A) (B) (C) (D)
where (C) is the correct response.
- Your responses to the questions are to be indicated in the **OMR Sheet kept inside the Paper I Booklet only**. If you mark at any place other than in the circles in the OMR Sheet, it will not be evaluated.
- Read the instructions given in OMR carefully.
- Rough Work is to be done in the end of this booklet.
- If you write your name or put any mark on any part of the OMR Answer Sheet, except for the space allotted for the relevant entries, which may disclose your identity, you will render yourself liable to disqualification.
- You have to return the test OMR Answer Sheet to the invigilators at the end of the examination compulsorily and must NOT carry it with you outside the Examination Hall.
- You can take away question booklet and carbon copy of OMR Answer Sheet after the examination.
- Use only Blue/Black Ball point pen.**
- Use of any calculator, Electronic gadgets or log table etc., is prohibited.**
- There is no negative marks for incorrect answers.**
- In case of any discrepancy found in the Kannada translation of a question booklet the question in English version shall be taken as final.**



LIFE SCIENCES
Paper – II

Note : This paper contains **fifty (50)** objective type questions. **Each** question carries **two (2)** marks. **All** questions are **compulsory**.

1. A process by which reproductive isolation occurs among groups of individuals within a continuous inbreeding population is called
(A) Sympatric speciation
(B) Allopatric speciation
(C) Parapatric speciation
(D) Quantum speciation
2. In which of the following techniques there is no electrophoretic step ?
(A) Dot Blot (B) Western Blot
(C) Northern Blot (D) Southern Blot
3. Bicoid mRNA is localised in the _____ region of Drosophila egg.
(A) Anterior (B) Posterior
(C) Dorsal (D) Ventral
4. Which of the following is an example of mobile genetic element in Humans ?
(A) P-element (B) IS-element
(C) LINES (D) ARS
5. The requirement of long day length or low temperature treatment for flowering can be substituted by
(A) Gibberellins (B) Coumarins
(C) 2, 4 – D (D) Morphactins
6. Why do fats give more energy than carbohydrates ?
(A) Fats have carboxyl group
(B) Fats are more reduced than carbohydrates
(C) Fats are larger than carbohydrates
(D) Fats have more number of bonds than carbohydrates
7. Choose the right arrangement in the increasing order of energy.
(A) erg < calorie < joule
(B) joule < calorie < erg
(C) erg < joule < calorie
(D) calorie < erg < joule
8. All are sequence alignment tools except
(A) Rasmol (B) BLAST
(C) FASTA (D) Clustal w
9. When you eat vegetables, you are a
(A) Tertiary consumer
(B) Secondary consumer
(C) Primary consumer
(D) Primary producer



10. Extraction of metals from ore bearing rocks is known as
- (A) Biofiltration
 - (B) Biotransformation
 - (C) Bioleaching
 - (D) Bioremediation
11. Membrane around the vacuole is
- (A) Tonoplast (B) Amyloplast
 - (C) Cytoplasm (D) Elipoplast
12. Passer domesticus (Linnaeus, 1758) where Linnaeus in parentheses indicates that
- a) Genus of the species has been changed
 - b) Linnaeus is the second authority
 - c) Linnaeus is the first authority
 - d) Linnaeus is not the authority
- (A) a) and b) (B) b) and c)
 - (C) c) and d) (D) a) and c)
13. Leghemoglobin in legume root nodules regulates
- (A) Oxygen supply
 - (B) Nodule growth
 - (C) Dinitrogenase activity
 - (D) Expression of 'nif' genes
14. Identify the correct statement with reference to "Apoptosis".
- (A) It does not lead to the elimination of cells
 - (B) Its a process of programmed cell death that occurs in multicellular organisms
 - (C) The process of apoptosis is not blocked in cancer cells
 - (D) It occurs only in animal cells
15. The set of hormones produced by the Pancreas is
- (A) Insulin and secretin
 - (B) Insulin and gastrin
 - (C) Insulin and glucagon
 - (D) Glucagon and cholecystokinin
16. Identify the correct statement with reference to "Commensalism".
- (A) Both organisms benefit from each other
 - (B) One is harmed and the other is unaffected
 - (C) One is benefited from the other without affecting it
 - (D) One is benefited while the other is harmed
17. Epinephrine is made from
- (A) Tryptophan (B) Threonine
 - (C) Tyrosine (D) Aspartic acid



18. Arrest of replication fork at 'Ter' site requires the action of
(A) RNA polymerase
(B) DNA polymerase
(C) Tus protein
(D) Ori "C" protein
19. Heterosis is
(A) Appearance of spontaneous mutations
(B) Induction of mutations
(C) Mixture of two or more traits
(D) Superiority of hybrids over their parents
20. The size of human mitochondrial DNA is
(A) 30 Kb (B) 10 Mb
(C) 16 Kb (D) 20 Kb
21. Which one of the following is dominated by evergreen trees ?
(A) Tropical rain forest
(B) Thundra
(C) Deciduous forest
(D) Shrub jungle
22. Which experiment proved that DNA strands are antiparallel ?
(A) Messelson and Stahl experiment
(B) Okazaki fragments
(C) Nearest neighbour base frequency analysis
(D) Hershey and Chase experiment
23. The sphere of relatively nondescript cells that result from a rapid series of mitotic divisions of the zygote is called a
(A) Determination (B) Gastrulation
(C) Blastula (D) Morphogenesis
24. Toll-like receptors are involved in
(A) Antigen processing of B-cells
(B) Maturation of B-cells
(C) Antigen processing by Dendritic cells
(D) Damage associated molecular pattern recognition
25. In Poisson's distribution
(A) Mean is greater than variance
(B) Mean is less than variance
(C) Mean is equal to variance
(D) Mean is greater than standard deviation
26. 'CITES' is
(A) Conservation of International Trade in Endangered Species of wildlife fauna and flora
(B) Convention on International Trade in Endangered Species of wildlife fauna and flora
(C) Conservation of Internal Trade in Ecology of fauna and flora
(D) Convention on International Trend in Endangered Species of fauna and flora



27. The alpha fetoprotein (AFP) test in pregnant women helps in detecting _____ in the child to be born.
- (A) Spina bifida
 - (B) Polio attack
 - (C) Cholera attack
 - (D) Autism spectrum
28. A point mutation that results in premature termination of translation of the corresponding mRNA is called _____ mutation.
- (A) Missense
 - (B) Tautomeric shift
 - (C) Frame shift
 - (D) Nonsense
29. Electrochemical biosensors are normally based on
- (A) Radiowaves
 - (B) β Rays
 - (C) Transducers
 - (D) Enzymatic analysis
30. Which respiratory pigment is blue when bound to oxygen and colourless without oxygen ?
- (A) Hemerythrin
 - (B) Hemocyanin
 - (C) Hemoglobin
 - (D) Chlorocruorin
31. Which of the following is a product of Aldolase reaction ?
- (A) 3-Phosphoglycerate
 - (B) 2-Phosphoglycerate
 - (C) Glyceraldehyde 3-phosphate
 - (D) Glyceraldehyde 2-phosphate
32. Which of the following enzymes will carry out "Abortive cycling" ?
- (A) Ribozyme
 - (B) RNA polymerase II
 - (C) DNA polymerase III
 - (D) Topoisomerase I
33. Mosquitoes belonging to the order
- (A) Lepidoptera
 - (B) Coleoptera
 - (C) Diptera
 - (D) Hymenoptera
34. Identify the Factor III involved in hemostasis.
- (A) Proaccelerin
 - (B) Prothrombin
 - (C) Fibrinogen
 - (D) Tissue thromboplastin
35. _____ is a method of genetic analysis that can be used to estimate evolutionary rates and time scales using data from DNA or proteins.
- (A) RAPD
 - (B) SSLP
 - (C) SNP
 - (D) Molecular clock



36. Which of the following statements are true for Insulin Receptor ?
- i) They are G-protein coupled receptors
 - ii) They share many features with IGF – 1 receptor
 - iii) Insulin receptor has Tyr-kinase domain in its β chain
 - iv) They exist as dimers
- (A) i, ii and iii
(B) ii, iii and iv
(C) i and ii
(D) iii and iv
37. The total biomass of a micro-organism will be determined by the nutrient that is present at lowest concentration relative to the organism's requirement. This is governed by
- (A) Liebig's law
(B) Shelford's law of tolerance
(C) The second law of thermodynamics
(D) Heisenberg's principle of uncertainty
38. Gamma diversity represents
- (A) Diversity of a site
(B) Diversity among sites
(C) Diversity of the entire landscape
(D) Diversity between sites
39. The most abundant enzyme on the earth is
- (A) PEP carboxylase
(B) Nitrogenase
(C) Rubisco
(D) Nitrite reductase
40. Which is the most prevalent neurotransmitter of the human brain ?
- (A) Serotonin
(B) Glutamate
(C) γ -aminobutyric Acid
(D) Dopamine
41. K_M is defined as
- (A) Substrate concentration at half maximal velocity
(B) Half substrate concentration at maximal velocity
(C) Half maximal substrate concentration
(D) Half maximal velocity
42. According to biological species concept, Horse and Donkey are not considered in the same species because
- (A) They are unable to mate
(B) They do not produce fertile offspring
(C) They look different
(D) They live in different habitats



43. The compound which is not a member of the electron transport chain is
(A) NAD (B) Cytochrome C
(C) Ubiquinone (D) Carnitine
44. Which nucleus is used in the determination of Magnetic Resonance Imaging ?
(A) ^1H of water
(B) ^{13}C of protein
(C) ^{31}P of phosphate
(D) ^{19}F of probe molecule
45. When a bacteriophage genome has integrated into the host bacterium DNA, it is called
(A) Prophage
(B) Lambda phage
(C) Temperate phage
(D) Helper phage
46. Pronuclear injection is a technique which involves
(A) Injection of DNA fragments into the pronuclei of the newly fertilised egg
(B) Transfer of DNA fragment into maternal and paternal pronuclei
(C) Transfer of embryonic stem cell nucleus into an enucleated egg
(D) Injection of RNA fragments into pronuclei of the newly fertilized egg
47. The exogenous agents which causes abnormalities are called
(A) Toxicants
(B) Teratogens
(C) Mitogens
(D) Antigens
48. Taenia solium is a parasite of
(A) Man
(B) Frog
(C) Fish
(D) Snake
49. Identify the correct statement with reference to "Homologous recombination".
(A) Nucleotide sequences are exchanged between two similar or identical molecules of DNA
(B) It is not used by cells to repair harmful breaks that occur on both strands of DNA
(C) It is not seen in Eukaryotes
(D) It is not useful in Genetic Engineering
50. Which region of the brain mainly involved in learning of spatial memory ?
(A) Cerebellum
(B) Cerebral cortex
(C) Hypothalamus
(D) Hippocampus



Total Number of Pages : 8

ಚಿತ್ತು ಬರಹಕ್ಕಾಗಿ ಸ್ಥಳ
Space for Rough Work