

Test Paper : II

Test Subject : LIFE SCIENCE

Test Subject Code : K-2815

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 SCIENCE

Time : 1 Hour 15 Minutes

Maximum Marks : 100

Number of Pages in this Booklet : 8

Number of Questions in this Booklet : 50

ಅಭ್ಯರ್ಥಿಗಳಿಗೆ ಸೂಚನೆಗಳು

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

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 multiple-choice type of questions.
3. 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.
4. Each item has four alternative responses marked (A), (B), (C) and (D). You have to darken the oval as indicated below on the correct response against each item.
Example : (A) (B) (C) (D)
where (C) is the correct response.
5. 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 ovals in the Answer Sheet, it will not be evaluated.
6. Read the instructions given in OMR carefully.
7. Rough Work is to be done in the end of this booklet.
8. 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.
9. 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.
10. You can take away question booklet and carbon copy of OMR Answer Sheet soon after the examination.
11. Use only Blue/Black Ball point pen.
12. Use of any calculator or log table etc., is prohibited.
13. There is no negative marks for incorrect answers.
14. 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 SCIENCE
Paper – II

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

1. In the glycolytic pathway, 1,3 bis phospho glycerate is converted into 3 phospho glycerate and the phosphate group is transferred to ADP to produce ATP. This type of reaction is called
(A) Futile cycle
(B) Substrate level phosphorylation
(C) Energy conservation reaction
(D) Oxidative phosphorylation
2. A plasmid vector has two restriction sites for *EcoRI* and one restriction site for *BamHI*. A double digest of the plasmid with these two restriction enzymes will yield how many fragments ?
(A) 1 (B) 2
(C) 3 (D) 4
3. Which of the following is not an intermediate in the citric acid cycle ?
(A) Pyruvate
(B) Oxaloacetate
(C) Succinate
(D) Malate
4. The sequence of a strand of DNA is 5'-CATTAG-3'. What will be the sequence of the complimentary strand ?
(A) 5'-GTAATC-3'
(B) 5'-CATTAG-3'
(C) 5'-CTAATG-3'
(D) 5'-GATTAC-3'
5. Swi/Snf complex is involved in
(A) Histone modification
(B) Chromatin remodeling
(C) Heterochromatinization
(D) Nucleosome condensation
6. Toll-like receptors are involved in
(A) Antigen processing by B cells
(B) Maturation of B cells
(C) Maturation of dendritic cells
(D) Damage pattern recognition
7. A couple has four children each having a different blood group. Hence the blood group of the parents will be
(A) $I^A I^A$ and $i i$
(B) $I^B I^B$ and $i i$
(C) $I^A I^A$ and $I^B I^B$
(D) $I^A i$ and $I^B i$



8. The relationship between D-Glucose and d-Glucose is
- (A) Both are the same
 - (B) D-refers to optical rotation and d-refers to configuration
 - (C) D-refers to configuration and d-refers to optical activity
 - (D) D configuration always gives rise to dextro rotation
9. A restriction endonuclease recognizes 6 bases in a DNA sequence and makes a cut. Assuming that the bases are randomly distributed in the DNA, what will be the size of the fragments generated by this endonuclease ?
- (A) 256 bp (B) 2096 bp
 - (C) 4096 bp (D) 6096 bp
10. Membrane rafts are examples of
- (A) Membrane microdomains
 - (B) Membrane vesicles
 - (C) Polarized membrane
 - (D) Clathrin coated vesicles
11. Which of the following statements regarding lac operon is FALSE ?
- (A) When both glucose and lactose are present, there is a large amount of transcription
 - (B) When both glucose and lactose are absent, there is no transcription
 - (C) When glucose is present and lactose is absent, there is no transcription
 - (D) When glucose is absent and lactose is present, there is a large amount of transcription
12. The backbone atoms in a peptide linkage is as follows
- (A) C-N-C-C (B) C-C-N-C
 - (C) C-O-N-C (D) C-C-O-N
13. In biological nomenclature, if a specific epithet exactly repeats generic name, then it is called
- (A) Synonym (B) Basionym
 - (C) Tautonym (D) Homonym
14. In Stanley Miller's experiment that provided a conclusive evidence for the chemical synthesis of biomolecules, the following gases were used
- (A) Methane, ammonia and hydrogen
 - (B) Methane and hydrogen peroxide
 - (C) Helium, oxygen and hydrogen peroxide
 - (D) Hydrogen, carbon dioxide and helium
15. *Bacteria bassiana* is commercially useful as a
- (A) Biofertiliser
 - (B) Bioinsecticide
 - (C) Pathogen
 - (D) Fermenting agent



16. Flavr Savr gene is responsible for the improvement in the quality of
(A) Potato (B) Tomato
(C) Chillies (D) Brinjal
17. Which one of the following is not included in the family Orchidaceae ?
(A) Bulbophyllum
(B) Rhytia
(C) Cypridium
(D) Vanilla
18. Which one of the following is not an internal factor of differentiation ?
(A) Polarity
(B) Inductive effect
(C) Mutual incompatibility
(D) Cytoplasm
19. The nutritive tissue of the mature anther is
(A) Nucellus (B) Endosperm
(C) Tapetum (D) Endothecium
20. The precursor for the biosynthesis of Auxin is
(A) Tryptophan
(B) Hydroxylamine
(C) Tryptamine
(D) Indole acetic acid
21. Which one of the following accumulates under both drought and salinity stress in plants ?
(A) Proline
(B) Glycine
(C) Tryptophan
(D) Methionine
22. The compound that binds metal ions and capable of ion transport
(A) Ionophore
(B) Isoprenes
(C) Interferons
(D) Introns
23. Which one of the following is not a secondary metabolite ?
(A) Alkaloids
(B) Antibiotics
(C) Terpenes
(D) Trichoroacetic acid
24. Which one of the following is not concerned with hematopoiesis ?
(A) G-CSF
(B) Thyroxin
(C) Erythropoietin
(D) M-CSF



25. Which one of the following is a virus induced cancer ?
- (A) Breast cancer
 - (B) Colorectal cancer
 - (C) Cervical cancer
 - (D) Oral cancer
26. Which one of the following destabilizes Hardy-Weinberg law in a population ?
- (A) Absence of natural selection
 - (B) Random mating of individuals in the population
 - (C) Migration of individuals from one population to another
 - (D) Absence of mutation in the population
27. Synthesis of DNA strand occurs in
- (A) $3' \rightarrow 5'$ direction
 - (B) $5' \rightarrow 3'$ direction
 - (C) Both the directions
 - (D) Either $3' \rightarrow 5'$ or $5' \rightarrow 3'$ direction depending on energy budget
28. In a diploid organism, the mitotic cell division is characterized by
- (A) Extended anaphase
 - (B) Absence of chromosome condensation
 - (C) Formation of haploid daughter cells
 - (D) Formation of diploid daughter cells
29. The molecular formula of immunoglobulin E is
- (A) K_2 or $\lambda_2 + \delta_2$
 - (B) K_2 or $\lambda_2 + \gamma_2$
 - (C) K_2 or $\lambda_2 + \epsilon_2$
 - (D) K_2 or $\lambda_2 + \mu_2$
30. Facultative heterochromatin is characterized by
- (A) Presence of repetitive DNA
 - (B) Transcriptional inactivity in some cell types in an organism
 - (C) Absolute transcriptional inactivity
 - (D) Transcriptional activity in all cell types in an organism
31. Who won the Nobel Prize for the discovery of G protein ?
- (A) Thomas Check and Philip Sharp
 - (B) Rodbell and Gilman
 - (C) Karry Mullis
 - (D) Arthur Kornberg
32. Bacterial recombination mediated by bacteriophage is called
- (A) Transdetermination
 - (B) Transformation
 - (C) Transcription
 - (D) Transduction



33. The chromosome abnormality in individuals with Down syndrome belongs to the category
- (A) Trisomy
 - (B) Nullisomy
 - (C) Gene duplication
 - (D) Tetraploidy
34. The preponderance of heterozygous individuals in a population is referred to as
- (A) Density dependent selection
 - (B) Frequency dependent selection
 - (C) Heteroselection
 - (D) Kin selection
35. One of the most useful methods for identifying a specific gene is
- (A) Eastern blotting
 - (B) Western blotting
 - (C) Southern blotting
 - (D) Northern blotting
36. Which one of the following vectors has been most successful for the introduction of DNA into human cells ?
- (A) Retroviruses
 - (B) Yeast plasmid
 - (C) Bacterial plasmid
 - (D) T-DNA
37. Which one of the following is not the characteristic of normal cells in culture ?
- (A) They do not require substratum
 - (B) They lack contact inhibition
 - (C) They grow rapidly
 - (D) They do not possess aneuploidy
38. Direct cytoplasmic communication between neighbouring cells is facilitated by
- (A) Gap junctions
 - (B) Tight junctions
 - (C) Desmosomes
 - (D) Golgi apparatus
39. Human sperm nucleus contains
- (A) 22 pairs of autosomes + X or Y chromosome
 - (B) 22 autosomes + X or Y chromosome
 - (C) 22 autosomes + X and Y chromosomes
 - (D) 22 pairs of autosomes + X and Y chromosomes
40. Standard error is calculated by the equation
- (A) $\frac{\sqrt{\sum(X - \mu_x)^2}}{N}$
 - (B) $X - m$
 - (C) $\frac{\sum(X - m)^2}{n - 1}$
 - (D) $\frac{SD}{\sqrt{n}}$



41. The presynaptic membrane and postsynaptic membrane are separated by synaptic cleft whose width is
(A) 2 nm (B) 200 nm
(C) 20 nm (D) 100 nm
42. Which one of the following is not a region of nephron ?
(A) Malpighian body
(B) Proximal convoluted tubule
(C) Loop of Henle
(D) Renal medulla
43. A cell or its group alters the developmental fate of another cell. This phenomenon is called
(A) Induction
(B) Competence
(C) Germplasm theory
(D) Cell fate
44. Gonadotrophic hormones secreted by the pituitary
(A) Anti diuretic hormone, Melanocyte stimulating hormone, Follicle stimulating hormone
(B) Follicle stimulating hormone, Leutinizing hormone
(C) Prolactin, Thyroxin, Melanocyte stimulating hormone
(D) Thyroid stimulating hormone, Adrenocorticotropic hormone, Anti diuretic hormone
45. Allometric species refers to
(A) Those occupying the same geographical area
(B) Those inhabiting completely different geographical areas
(C) Those living on large land masses
(D) Those which are widely distributed
46. Melatonin hormone is produced by the gland
(A) Pituitary (B) Thyroid
(C) Pancreas (D) Pineal
47. Acetylcholine inhibits the heart of
(A) Insects (B) Echinoderms
(C) Fishes (D) Molluscs
48. Oxygen-haemoglobin curve shifts to the right when
(A) O₂ concentration decreases
(B) CO₂ concentration decreases
(C) Chloride concentration decreases
(D) CO₂ concentration increases
49. During oogenesis, total number of polar bodies formed in the ovary are
(A) 2 (B) 3
(C) 4 (D) 5
50. Circadian rhythm in animals is controlled by
(A) Zeitgeber
(B) Cerebral cortex
(C) Medulla
(D) Pituitary gland



Total Number of Pages : 8

ಚಿತ್ತು ಬರಹಕ್ಕಾಗಿ ಸ್ಥಳ
Space for Rough Work