Previous Year Question Paper

of

SET – KARNATAKA

LIFE SCIENCES - II

State Eligibility Test

2016

(Original Question Paper with Answer Key)

State Eligibility Test

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Test Paper : **II**

Test Subject : **LIFE SCIENCE**

Test Subject Code : **K-2816**

Test Booklet Serial No. : _____

OMR Sheet 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 ಮೇಲ್ತುದಿಯಲ್ಲಿ ಒದಗಿಸಿದ ಸ್ಥಳದಲ್ಲಿ ನಿಮ್ಮ ರೋಲ್ ನಂಬರನ್ನು ಬರೆಯಿರಿ.
2. ಈ ಪತ್ರಿಕೆಯು ಬಹು ಆಯ್ಕೆ ವಿಧದ ಐವತ್ತು ಪ್ರಶ್ನೆಗಳನ್ನು ಒಳಗೊಂಡಿದೆ.
3. ಪರೀಕ್ಷೆಯ ಪ್ರಾರಂಭದಲ್ಲಿ, ಪ್ರಶ್ನೆಪುಸ್ತಿಕೆಯನ್ನು ನಿಮಗೆ ನೀಡಲಾಗುವುದು. ಮೊದಲ 5 ನಿಮಿಷಗಳಲ್ಲಿ ನೀವು ಪುಸ್ತಿಕೆಯನ್ನು ತೆರೆಯಲು ಮತ್ತು ಕೆಳಗಿನಂತೆ ಕಡ್ಡಾಯವಾಗಿ ಪರೀಕ್ಷಿಸಲು ಕೋರಲಾಗಿದೆ.
   (i) ಪ್ರಶ್ನೆ ಪುಸ್ತಿಕೆಗೆ ಪ್ರವೇಶಾವಕಾಶ ಪಡೆಯಲು, ಈ ಹೊದಿಕೆ ಪುಟದ ಅಂಚಿನ ಮೇಲಿರುವ ಪೇಪರ್ ಸೀಲನ್ನು ಹರಿಯಿರಿ. ಸ್ಟಿಕ್ಕರ್ ಸೀಲ್ ಇಲ್ಲದ ಅಥವಾ ತೆರೆದ ಪುಸ್ತಿಕೆಯನ್ನು ಸ್ವೀಕರಿಸಬೇಡಿ.
   (ii) **ಪುಸ್ತಿಕೆಯಲ್ಲಿನ ಪ್ರಶ್ನೆಗಳ ಸಂಖ್ಯೆ ಮತ್ತು ಪುಟಗಳ ಸಂಖ್ಯೆಯನ್ನು ಮುಖಪುಟದ ಮೇಲೆ ಮುದ್ರಿಸಿದ ಮಾಹಿತಿಯೊಂದಿಗೆ ತಾಳೆ ನೋಡಿರಿ. ಪುಟಗಳು/ಪ್ರಶ್ನೆಗಳು ಕಾಣೆಯಾದ, ಅಥವಾ ದ್ವಿಪ್ರತಿ ಅಥವಾ ಅನುಕ್ರಮವಾಗಿಲ್ಲದ ಅಥವಾ ಇತರ ಯಾವುದೇ ವ್ಯತ್ಯಾಸದ ದೋಷಪೂರಿತ ಪುಸ್ತಿಕೆಯನ್ನು ಕೂಡಲೆ 5 ನಿಮಿಷದ ಅವಧಿ ಒಳಗೆ, ಸಂವೀಕ್ಷಕರಿಂದ ಸರಿ ಇರುವ ಪುಸ್ತಿಕೆಗೆ 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 ಕಪ್ಪಾಗಿಸಬೇಕು.
   ಉದಾಹರಣೆ: (A) (B) ● (D)
   (C) ಸರಿಯಾದ ಉತ್ತರವಾಗಿದ್ದಾಗ.
5. ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆ I ರಲ್ಲಿ **ಕೊಟ್ಟಿರುವ OMR ಉತ್ತರ ಹಾಳೆಯಲ್ಲಿ, ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆ I ಮತ್ತು ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆ II ರಲ್ಲಿ ಇರುವ ಪ್ರಶ್ನೆಗಳಿಗೆ ನಿಮ್ಮ ಉತ್ತರಗಳನ್ನು ಸೂಚಿಸತಕ್ಕದ್ದು.** OMR ಹಾಳೆಯಲ್ಲಿ ಅಂಡಾಕೃತಿಯಲ್ಲದೆ ಬೇರೆ ಯಾವುದೇ ಸ್ಥಳದಲ್ಲಿ ಉತ್ತರವನ್ನು ಗುರುತಿಸಿದರೆ, ಅದರ ಮೌಲ್ಯಮಾಪನ ಮಾಡಲಾಗುವುದಿಲ್ಲ.
6. OMR ಉತ್ತರ ಹಾಳೆಯಲ್ಲಿ ಕೊಟ್ಟ ಸೂಚನೆಗಳನ್ನು ಜಾಗರೂಕತೆಯಿಂದ ಓದಿರಿ.
7. ಎಲ್ಲಾ ಕರಡು ಕೆಲಸವನ್ನು ಪುಸ್ತಿಕೆಯ ಕೊನೆಯಲ್ಲಿ ಮಾಡತಕ್ಕದ್ದು.
8. ನಿಮ್ಮ ಗುರುತನ್ನು ಬಹಿರಂಗಪಡಿಸಬಹುದಾದ ನಿಮ್ಮ ಹೆಸರು ಅಥವಾ ಯಾವುದೇ ಚಿಹ್ನೆಯನ್ನು, ಸಂಗತವಾದ ಸ್ಥಳ ಹೊರತು ಪಡಿಸಿ, OMR ಉತ್ತರ ಹಾಳೆಯ ಯಾವುದೇ ಭಾಗದಲ್ಲಿ ಬರೆದರೆ, ನೀವು ಅನರ್ಹತೆಗೆ ಬಾಧ್ಯರಾಗಿರುತ್ತೀರಿ.
9. ಪರೀಕ್ಷೆಯು ಮುಗಿದನಂತರ, ಕಡ್ಡಾಯವಾಗಿ OMR ಉತ್ತರ ಹಾಳೆಯನ್ನು ಸಂವೀಕ್ಷಕರಿಗೆ ನೀವು ಹಿಂತಿರುಗಿಸಬೇಕು ಮತ್ತು ಪರೀಕ್ಷಾ ಕೊಠಡಿಯ ಹೊರಗೆ OMR ನ್ನು ನಿಮ್ಮೊಂದಿಗೆ ಕೊಂಡೊಯ್ಯಕೂಡದು.
10. ಪರೀಕ್ಷೆಯ ನಂತರ, ಪರೀಕ್ಷಾ ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಯನ್ನು ಮತ್ತು ನಕಲು OMR ಉತ್ತರ ಹಾಳೆಯನ್ನು ನಿಮ್ಮೊಂದಿಗೆ ತೆಗೆದುಕೊಂಡು ಹೋಗಬಹುದು.
11. **ನೀಲಿ/ಕಪ್ಪು ಬಾಲ್‌ಪಾಯಿಂಟ್ ಪೆನ್ ಮಾತ್ರವೇ ಉಪಯೋಗಿಸಿರಿ.**
12. **ಕ್ಯಾಲ್ಕುಲೇಟರ್, ವಿದ್ಯುನ್ಮಾನ ಉಪಕರಣ ಅಥವಾ ಲಾಗ್ ಟೇಬಲ್ ಇತ್ಯಾದಿಯ ಉಪಯೋಗವನ್ನು ನಿಷೇಧಿಸಲಾಗಿದೆ.**
13. **ಸರಿ ಅಲ್ಲದ ಉತ್ತರಗಳಿಗೆ ಋಣ ಅಂಕ ಇರುವುದಿಲ್ಲ.**
14. **ಕನ್ನಡ ಮತ್ತು ಇಂಗ್ಲೀಷ್ ಆವೃತ್ತಿಗಳ ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಗಳಲ್ಲಿ ಯಾವುದೇ ರೀತಿಯ ವ್ಯತ್ಯಾಸಗಳು 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 circle as indicated below on the correct response against each item.
   Example : (A) (B) ● (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 circles in the OMR 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 after the examination.
11. **Use only Blue/Black Ball point pen.**
12. **Use of any calculator, Electronic gadgets 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.**

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LIFE SCIENCE
Paper – II

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

1. Which of the following is not an oxygen transporting molecule ?

(A) Ceruloplasmin

(B) Hemocyanin

(C) Erythrocruorin

(D) Hemerythrin

2. Which of the following compounds have both covalent and coordinate bonds ?

(A) NH_4Cl (B) Fe_3O_4

(C) $MgCl_2$ (D) H_2SO_4

3. Which is the exclusive component of mitochondrial membrane ?

(A) Cholesterol

(B) Phosphatidyl choline

(C) Sphingomyelin

(D) Cardiolipin

4. Which of the following is strongest among weak forces of interactions ?

(A) Ionic

(B) Hydrogen bond

(C) Van der Waal's

(D) Dipole-dipole

5. Complete hydrolysis of ceramide will yield

(A) Sphingosine, Fatty acid, Choline

(B) Sphingosine, Fatty acid

(C) Sphingosine, Phosphate, Choline

(D) Sphingosine, Fatty acid, Phosphate

6. Which of the vectors has been most successful for the introduction of DNA into mammalian cells ?

(A) Bacteriophage

(B) Baculovirus

(C) Retrovirus

(D) Plasmid

7. Structure of trypsin and chymotrypsin suggests that they had origin from

(A) Duplicated genes

(B) Gene deletions

(C) Translocated genes

(D) Inversion of genes

8. Raphanobrassica is

(A) Interspecific hybrid

(B) Intergeneric hybrid

(C) Intravarietal hybrid

(D) Intervarietal hybrid

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9. Beetles belongs to the order

(A) Coleoptera

(B) Hemiptera

(C) Lepidoptera

(D) Diptera

10. Conjugation between an F^+ and F^- bacterial cells usually results in

(A) Death of both conjugating cells

(B) Two F^- cells

(C) Two F^+ cells

(D) An F^+ and an F^- cell

11. In which part of human female reproductive tract, the fertilization usually takes place ?

(A) Ovary (B) Uterus

(C) Oviduct (D) Cervix

12. Phytochrome of the plants are responsible for which of the following functions ?

(A) Photosynthetic electron flow

(B) Shade avoidance

(C) Seed dormancy

(D) Stomatal dynamics

13. The virus that can trigger neoplastic transformation of cells

(A) T4 phage (B) Polio virus

(C) RSV (D) M13

14. The cancer caused by defect in repairing UV-induced DNA damage

(A) Retinoblastoma

(B) Xeroderma pigmentosum

(C) Chronic myelogenous leukemia

(D) Renal cell carcinoma

15. The following cause red tide in oceans

(A) Diatoms

(B) Foramini ferans

(C) Dinoflagellates

(D) Rhodophyta

16. One of the following is an example for microbial bioremediation

(A) Use of bacteria to treat sewage

(B) Use of bacteria to kill other bacteria

(C) Use of antibiotics produced by cultured bacteria

(D) Engineering bacteria to produce human protein

17. Which of the following best represents the hierarchy of levels of biological classification ?

(A) Phylum, kingdom, class, order, genus, species, family

(B) Kingdom, phylum, family, class, order, genus, species

(C) Kingdom, phylum, class, order, family, genus, species

(D) Class, order, kingdom, phylum, family, genus, species

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18. Listing items like age, number of live organisms each year and life expectancy is known as

(A) Life table

(B) Survivorship table

(C) Rate table

(D) Mortality table

19. Which of the following phytohormones play a role in seed dormancy ?

(A) Gibberellin

(B) ABA

(C) Cytokinin

(D) Auxin

20. Which hormone allows seeds to ignore environmental condition and germinate ?

(A) Abscisic acid

(B) Cytokinins

(C) Auxins

(D) Gibberellins

21. Photochemical reaction occurs in

(A) Lumen of thylakoid

(B) Stroma of chloroplast

(C) Membrane of thylakoid

(D) Plant cell cytoplasm

22. Which of the following enzyme does not require a primer ?

(A) RNA dependent DNA polymerase

(B) DNA dependent DNA polymerase

(C) Terminal transferase

(D) Taq DNA polymerase

23. Chloramphenicol inhibits

(A) Cell wall synthesis in bacteria

(B) Protein synthesis in 70S ribosome

(C) Protein synthesis on 80S ribosomes

(D) DNA replication

24. Pathogenicity is

(A) Ability to cause disease

(B) Degree of disease

(C) Virulence

(D) Prevent disease

25. Cytotoxic T cell mediated killing of target cells occur by the release of

(A) Ubiquitin

(B) Lysozyme

(C) Cytokines

(D) Granzymes

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26. In which of the following types of ovules do the micropyle and the funiculus come to lie in one straight line ?

(A) Orthotropous

(B) Anatropous

(C) Hemianatropous

(D) Campylotropous

27. In Angiosperms, germinable adventive embryos develop from

(A) Endosperm

(B) Nucellus

(C) Antipodal cells

(D) Synergids

28. Which hormone stimulates process of ovulation in mammals ?

(A) Prolactin

(B) FSH

(C) LH

(D) Oxytocin

29. The correct sequence of process of development after fertilization and cleavage is

(A) Gastrulation – organogenesis – growth

(B) Organogenesis – gastrulation – growth

(C) Gastrulation – blastulation – growth

(D) Organogenesis – morulation – blastulation

30. A series of mitotic cell divisions that changes zygote into multicellular embryo

(A) Gastrulation

(B) Gametogenesis

(C) Blastulation

(D) Cleavage

31. Translesion DNA polymerases are capable of

(A) Inducing DNA recombination

(B) Inducing DNA breaks

(C) Bypassing distorted DNA to polymerize deoxyribonucleotides

(D) Preventing nucleotide polymerization

32. With reference to chromosomal DNA, genetic code degeneracy means

(A) a given triplet can code for more than one aminoacid

(B) there is no punctuation in the code sequence

(C) the genetic code has degraded from a larger codon

(D) a given aminoacid can be coded by more than one triplet

33. 'Biodiversity hotspot' is a region with significant levels of biodiversity that is

(A) in abundance

(B) endemic and under threat

(C) located in areas of high temperature

(D) located in high altitudes

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34. Ocean upwelling

(A) brings oxygen rich water to surface

(B) responsible for oceanic currents

(C) brings up coral reef communities

(D) brings nutrient rich water to surface

35. In addition to *Saccharomyces* which other organism can be used for alcohol production ?

(A) *Clostridium acetobutylicum*

(B) *Zymomonas mobilis*

(C) *Escherichia coli*

(D) *Pseudomonas aeruginosa*

36. Sequence of events in bacterial growth curve is

(A) Log phase, lag phase, stationary phase and death phase

(B) Stationary phase, lag phase, log phase and death phase

(C) Lag phase, log phase, stationary phase and death phase

(D) Stationary phase, log phase, lag phase and death phase

37. Bacteria that divide and perform function at low temperature are called

(A) Thermophilic

(B) Psychrophilic

(C) Basophilic

(D) Halophilic

38. If SKL is at the carboxy terminus of a protein, such protein is targeted to

(A) Endoplasmic reticulum

(B) Mitochondria

(C) Nucleus

(D) Peroxisome

39. If half life of a reaction is 30 min. How much time is required to complete 75% of the reaction ?

(A) 15 min.

(B) 30 min.

(C) 45 min.

(D) 60 min.

40. MRI is made possible by which of the following ?

(A) External magnet of high strength

(B) Gradient magnetic field

(C) Fourier transformation of the NMR signal

(D) Improved radio frequency detectors

41. Which of the following phenotypic ratios represent Hardy-Weinberg genetic equilibrium ?

(A) 0.09, 0.48, 0.64

(B) 0.09, 0.36, 0.04

(C) 0.04, 0.32, 0.64

(D) 0.16, 0.48, 0.49

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42. Genetic relatedness between two workers in a honeybee colony is

(A) 0.25

(B) 0.50

(C) 0.75

(D) 1.00

43. Which of the following is not a type of extra nuclear inheritance ?

(A) Sexual segregation

(B) Vegetative segregation

(C) Uniparental inheritance

(D) Biparental inheritance

44. Which of the following organism's whole genome is chemically synthesized ?

(A) *Drosophila*

(B) *Rana pipiens*

(C) *Mycoplasma genitalium*

(D) *Yeast*

45. Scientist who patented genetically modified organism that degrade hydrocarbons

(A) Arthur Kornberg

(B) H.G. Khorana

(C) Anand Chakraborthy

(D) James Watson

46. *Dictyostelium* morphogenesis requires

(A) GTP (B) ATP

(C) cAMP (D) CTP

47. Random changes in allelic frequency within a small population is known as

(A) Homeostasis

(B) Allelic mutation

(C) Genetic drift

(D) Heterosis

48. When autosomal genes are more readily expressed in one sex, it is known as

(A) Sex influenced trait

(B) Cytoplasmic inheritance

(C) Maternal effect

(D) Sex-linked inheritance

49. Using volunteers in a statistical study represents

(A) Truly random sample

(B) Purposive sample

(C) Stratified sample

(D) Non-random sample

50. Leaf sheath colouration, height, grain colour, aroma of rice are examples of

(A) Biological markers

(B) Morphological markers

(C) Cytological markers

(D) Biochemical markers

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