Test Paper : **II**

Test Subject : **LIFE SCIENCES**

Test Subject Code : **K-2818**

Roll No. | | | | | | | | |
(Figures as per admission card)

OMR Sheet No. : _____

TEST BOOKLET SERIAL NO.

Name & Signature of Invigilator/s

Signature : _____

Name : _____

Time : 2 Hours | Maximum Marks : 200

Number of Pages in this Booklet : **16** | Number of Questions in this Booklet : **100**

ಅಭ್ಯರ್ಥಿಗಳಿಗೆ ಸೂಚನೆಗಳು

1. ಈ ಪುಟದ ಮೇಲ್ತುದಿಯಲ್ಲಿ ಒದಗಿಸಿದ ಸ್ಥಳದಲ್ಲಿ ನಿಮ್ಮ ರೋಲ್ ನಂಬರನ್ನು ಬರೆಯಿರಿ.
2. ಈ ಪತ್ರಿಕೆಯು ಬಹು ಆಯ್ಕೆ ವಿಧದ ನೂರು (100) ಪ್ರಶ್ನೆಗಳನ್ನು ಒಳಗೊಂಡಿದೆ.
3. ಪರೀಕ್ಷೆಯ ಪ್ರಾರಂಭದಲ್ಲಿ, ಪ್ರಶ್ನೆ ಪುಸ್ತಿಕೆಯನ್ನು ನಿಮಗೆ ನೀಡಲಾಗುವುದು. ಮೊದಲ 5 ನಿಮಿಷಗಳಲ್ಲಿ ನೀವು ಪುಸ್ತಿಕೆಯನ್ನು ತೆರೆಯಲು ಮತ್ತು ಕೆಳಗಿನಂತೆ ಕಡ್ಡಾಯವಾಗಿ ಪರೀಕ್ಷಿಸಲು ಕೋರಲಾಗಿದೆ.
   (i) ಪ್ರಶ್ನೆಪುಸ್ತಿಕೆಗೆ 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 ಪ್ರಶ್ನೆಪತ್ರಿಕೆಯನ್ನು ಬದಲಾಯಿಸಲಾಗುವುದಿಲ್ಲ, ಯಾವುದೇ ಹೆಚ್ಚುಸಮಯವನ್ನೂ 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. ಈ ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಯ ಜೊತೆಯಲ್ಲಿ **ಕೊಟ್ಟಿರುವ OMR ಉತ್ತರ ಹಾಳೆಯಲ್ಲಿ 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 ಬಾಧ್ಯರಾಗುತ್ತೀರಿ.
9. ಪರೀಕ್ಷೆಯು ಮುಗಿದನಂತರ, ಕಡ್ಡಾಯವಾಗಿ OMR ಉತ್ತರ ಹಾಳೆಯನ್ನು ಸಂವೀಕ್ಷಕರಿಗೆ ನೀವು ಹಿಂತಿರುಗಿಸಬೇಕು ಮತ್ತು ಪರೀಕ್ಷಾ ಕೊಠಡಿಯ ಹೊರಗೆ OMRನ್ನು ನಿಮ್ಮೊಂದಿಗೆ ಕೊಂಡೊಯ್ಯಕೂಡದು.
10. ಪರೀಕ್ಷೆಯ ನಂತರ, ಪರೀಕ್ಷಾ ಪ್ರಶ್ನೆಪತ್ರಿಕೆಯನ್ನು 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 ಪ್ರಶ್ನೆಪತ್ರಿಕೆಗಳಲ್ಲಿ 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 Hundred 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 this Booklet.** 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.**

LIFE SCIENCES
Paper – II

Note : This paper contains **Hundred (100)** objective type questions. **Each** question carries **two (2)** marks. **All** questions are **compulsory**.

1. An open reading frame contains 333 nucleotides. The number of amino acids in the protein synthesized from this ORF will be

(A) 111 (B) 110

(C) 109 (D) 333

2. Plant movement that takes place in response to touch stimulus is called as

(A) Thigmotrophic movement

(B) Chemotrophic movement

(C) Hydrotrophic movement

(D) Osmotrophic movement

3. Color blindness is an X-linked recessive disorder. If a child is born to a normal father and carrier mother, what will be the probability that the child is color blind ?

(A) 3/4 (B) 2/4

(C) 1/4 (D) 4/4

4. Which techniques are used to study the transcription process in the cell ?

(A) Northern and Western blot analysis

(B) PCR and Restriction digestion

(C) Northern blot and *In-situ* hybridization

(D) Southern blot and ELISA

5. Radioactive Sulphur (S^{35}) was used to label the T_4 phage coat protein. When the phage was infected to equalize cells and the cells were precipitated by centrifugation. S^{35} labelled protein was found with

(A) Cell precipitate

(B) Cell supernatant

(C) Cell lysate

(D) *E.coli* proteins

6. Metagenomics deals with

(A) Isolation of soil bacteria

(B) Study of gene expression during metabolism

(C) Gene expression

(D) Culture independent analysis of biodiversity

7. Bats belong to which phylum ?

(A) Reptilia (B) Amphibia

(C) Aves (D) Mammalia

8. Which element is replaced by Strontium 90 in bones ?

(A) Potassium

(B) Sodium

(C) Calcium

(D) Selenium

9. Ergosterol is specific to

(A) Plants

(B) Animals

(C) Bacteria

(D) Filamentous fungi

10. Identify the right sequence of Ig gene segment joining that results in the production of functional heavy chain of immunoglobulin.

(A) VJC (B) CVJ

(C) CDJV (D) VDJC

11. Almost all major animal body plans seen today are found in which of the earliest fossils ?

(A) Cambrian

(B) Carboniferous

(C) Cretaceous

(D) Jurassic

12. Trisomy of chromosome 18 in human results in

(A) Down's syndrome

(B) Burkitt's lymphoma

(C) Spontaneous abortion

(D) Edward's syndrome

13. During abiotic stress, plants accumulate

(A) Acetyl salicylate

(B) Proline

(C) Oxalate

(D) Malate

14. Which of the following is NOT a living fossil ?

(A) Coelacanths

(B) Horseshoe crab

(C) Crocodile

(D) Archeopterix

15. Digger wasp will immobilize a prey, drag it to the hole in the ground, enter the hole, inspect it, place the prey in the hole and lay an egg on the prey and close the hole. If during this cycle of events, any one of the actions get interrupted, it will go through the entire sequence once again. This is an example of

(A) Innate behaviour

(B) Imprinting

(C) Learnt behaviour

(D) Trial and error behaviour

16. During bacterial conjugation, the directional transfer of DNA from donor to recipient occurs when

(A) Both conjugating cells are F^+ and F^-

(B) F factor is integrated into donor chromosome

(C) Both conjugating cells are F^- and F^-

(D) The conjugating cells are under nutritional stress

17. Flow cytometry is generally used

(A) To study localization of protein in the cell

(B) To study biomolecular interactions

(C) For identification of cell organelles

(D) For identification of cell types

18. Which one of these animal groups have the following characteristics ?

i. A body with trunk and tail and

ii. Notochord extending from rostrum to tail

Choose the right phylum with above characteristics :

(A) Cephalochordata

(B) Hemichordata

(C) Echinodermata

(D) Urochordata

19. Which one of the following cells do NOT contain nuclei ?

(A) Liver cells (B) Platelet cells

(C) Sperm cells (D) Ovarian cells

20. Naturally occurring phosphoprotein is

(A) Serum albumin

(B) Lacto globulin

(C) Casein

(D) Hemoglobin

21. Which of the following is NOT a component of MAP kinase pathway ?

(A) MAPKKK (B) ERK

(C) MEK (D) JNK

22. Transducin is a G-protein involved in which of the following biological processes ?

(A) Olfaction (B) Taste

(C) Vision (D) Touch

23. In which of the following model organism gene mapping can be made by tetrad analysis ?

(A) *Arabidopsis thaliana*

(B) *Escherichia coli*

(C) *Caenorabditis elegans*

(D) *Neurospora crassa*

24. Ions can move from one cell to another directly passing through

(A) Desmosomes

(B) Gap junctions

(C) Phagosomes

(D) Intermediate filaments

25. Which one of the following is an example for genomic variation ?

(A) Copy number variation

(B) RAPD

(C) Restriction mapping

(D) Fluorescence *in-situ* hybridization

26. Animal cell culture is quite popular in producing

(A) Lipids

(B) Enzymes

(C) Amino acids

(D) Vaccines

27. Beadle and Tatum showed that each kind of mutant bread mold lacked a specific enzyme. These experiments demonstrated that

(A) Genes carry information for making proteins

(B) Mutations are changes in genetic information

(C) Genes are made of DNA

(D) Enzymes are required to repair damaged DNA information

28. If bacteria doubles in 5 minutes, what would be the number of bacteria at the end of 25 minutes, if you start with 50 bacteria ?

(A) 250 (B) 2500

(C) 800 (D) 1600

29. During which stage of development, an embryo becomes triptoblastic ?

(A) Organogenesis

(B) Fertilization

(C) Gastrulation

(D) Blastulation

30. Ecological footprint of a land is an estimation of

(A) Carrying capacity of a land

(B) Available ecological capacity of a land

(C) Area of land per capita to meet actual demand on resources

(D) The relationship between the size of population and resources

31. Unlimited population growth is often prevented when death rates increase as population density increases, it is an example of

(A) Negative feedback

(B) Allelic effect

(C) r-selection

(D) Positive feedback

32. Which one of the following bacteria perform mixed acid fermentation ?

(A) *Staphylococcus aureus*

(B) *Clostridium perfingens*

(C) *Escherichia coli*

(D) *Streptococcus faecalis*

33. Hydroxy lysine and hydroxy proline in collagen are

(A) The results of post translational modification of lysine and proline

(B) Added during translation in certain eukaryotes

(C) Added during translation in certain archaebacteria

(D) Coded in the genome

34. A substance that mimics the cellular effects of a natural compound is known as

(A) Antagonist

(B) Agonist

(C) Activator

(D) Promoter

35. Lichens are combinations of

(A) Algae and Fungi

(B) Algae and Bacteria

(C) Algae and Protozoa

(D) Algae and Cyanobacteria

36. What would be the most likely confirmation of the following peptide ?

Gly-Leu-Pro-Met-Asp-Phe-Pro-Lys-Ala

(A) Alpha helix (B) Beta Sheet

(C) 3_{10} helix (D) Random coil

37. Obligate anaerobes means

(A) Use oxygen as final electron acceptor

(B) Do not use oxygen as final electron acceptor

(C) Tolerate presence of oxygen

(D) Grow under anaerobic and aerobic conditions

38. The plant viruses that multiply within their insect vector are called

(A) Persistent (B) Non-persistent

(C) Propogative (D) Circulative

39. Neuron response after an immediate shock is an example of

(A) Paracrine signaling

(B) Endocrine signaling

(C) Synaptic signaling

(D) Direct touch signaling

40. Which of the following functions is NOT concerned with chorio-allantosis of mammals ?

(A) Excretion

(B) Respiration

(C) Nutrition

(D) Locomotion

41. Late blight of potato is caused by

(A) *Phytopthera infestans*

(B) *Endothia parasitica*

(C) *Puccinia graminis*

(D) *Ustilago maydis*

42. What would be the phenotype of *Drosophila*, when the X chromosomal : Autosomal set ratio (X : A ratio) is 0.67 ?

(A) Male

(B) Intersex

(C) Metamale

(D) Metafemale

43. The classical four wings mutant fly *Drosophila melanagaster* resulted from

(A) Over expression of ultrabithorax protein

(B) Homozygous for three mutant alleles of the ultrabithorax gene

(C) Loss of abdominal A gene products

(D) Over expression of abdominal A gene products

44. Kohler and Milstein are associated with one of the following technique

(A) Southern Blotting

(B) Chromatography

(C) Electrophoresis

(D) Hybridoma

45. High yielding and photosynthetically efficient plants are usually

(A) Diploids (B) Polyploids

(C) Haploids (D) Aneuploids

46. Which of the following method can be used to enumerate the deer population in a forest ?

(A) Capture-recapture

(B) Line transect

(C) Collar banding

(D) Pit-trap

47. Yeast is an

(A) Anaerobe

(B) Aerobe

(C) Anaerobe and aerobe

(D) Chemotroph

48. Frankenstein foods are the products

(A) From GMOs

(B) Enriched in quality proteins and fats

(C) Enriched in essential mineral nutrients and fats

(D) Enriched in carbohydrate contents

49. A dense bacterial population caught in a tangled web of fibers sticking to a surface describes

(A) Biofilm

(B) Coagulation

(C) Biodisc

(D) Membrane filter

50. Which of the following processes occur exclusively in the cytosol of an eukaryotic cell ?

(A) Glycolysis and TCA cycle

(B) Glycolysis and fatty acid biosynthesis

(C) Fatty acid biosynthesis and beta oxidation

(D) TCA cycle and beta oxidation

51. Bohr effect is

(A) Effect of pH on oxygen binding to hemoglobin

(B) Effect of pH on substrate binding to the enzyme

(C) Effect of competition between substrate and inhibitor binding to enzymes

(D) Effect of temperature on the substrate binding to enzyme

52. Sarcolemma is plasma membrane of

(A) Stem cells

(B) Sarcoma cells

(C) Muscle fiber cells

(D) All types of cancer of cells

53. Cancer arising from epithelial cells is called

(A) Sarcoma

(B) Leukemia

(C) Adenoma

(D) Carcinoma

54. Historically which was the first genetically modified plant for antibiotic resistance and was produced in 1982 ?

(A) Potato

(B) Corn

(C) Tobacco

(D) Soybean

55. A gene was cloned in tet^R locus of pBR322 plasmid. The plasmid was then introduced to *E.coli* and grown. Which of the following statements are TRUE ?

i. *E.coli* will grow in medium containing ampicillin but not tetracycline.

ii. *E.coli* will grow in a medium containing tetracycline but not ampicillin.

iii. The colonies that grow on tetracycline containing medium have the inserted genes.

iv. The colonies that grow in ampicillin but not on tetracycline have the inserted gene.

(A) i and iii are true

(B) ii and iii are true

(C) i and iv are true

(D) ii and iv are true

56. 15 microgram of amylase (mol. wt. 150 kDa) acts on starch to produce maltose. If at maximal velocity, the enzyme released 6.84 mg of maltose (mol. wt. 342) per min, what is the turnover number ?

(A) 2×10^5 per min

(B) 2×10^4 per min

(C) 0.2×10^3 per min

(D) 2×10^6 per min

57. Ground feeding squirrels have one squirrel to stand as a sentinel (guard) to give alarm call if any predator is sighted. This action would put the life of the sentinel at risk. Yet the squirrels do it. This is explained on the basis of

(A) Altruistic behavior

(B) Reciprocal altruism

(C) Group selection

(D) Kin selection

58. Pollinating insects and flowering plants depend on each other. The evolution of these two is explained on the basis of

(A) Survival of the fittest

(B) Neutral evolution

(C) Adaptive radiation

(D) Co-evolution

59. In the DNA replication experiments by Okazaki, although he interpreted its results to support semi discontinuous synthesis of DNA, there were objections to this interpretation. Which of the objections was valid requiring further experimentation ?

(A) Both strands are made in short pieces

(B) Both are made in long pieces, but while isolating some break into short pieces

(C) After first strand is completely made, the second strand is started. Hence the small pieces

(D) Uridine is incorporated in place of thymidine. Removal of uridine leads to strand breaks

60. Which one of the following statements is INCORRECT to define "Mutation" ?

(A) A mutation may or may not produce discernible phenotype

(B) A mutation can induce damaging effects on normal gene sequence

(C) Mutations are important players during evolution

(D) Chemical mutagenesis can be used to produce transgenic animals

61. The Maturation Promoting Factor (MPF) of cell cycle is

(A) A defective protein

(B) An energy yielding molecule

(C) Cyclin dependent kinase complex

(D) A protein that arrests cell division

62. Which of the following phylum has metameric segmentation ?

(A) Platyhelminthes

(B) Nematode

(C) Annelida

(D) Mollusca

63. Which of the following transgenic animal was first developed for producing alpha 1 antitrypsin (AAT) in the milk ?

(A) Goat

(B) Sheep

(C) Cow

(D) Buffalo

64. Which of the following compounds form chitin, the exoskeleton of insects ?

(A) Polypeptide chain rich in sulphur

(B) Nitrogen containing polysaccharide

(C) Polypeptide chain with mineral salts

(D) Lipids with calcium salts

65. RNA editing is post transcriptional modification that includes addition, deletion or replacement of nucleotides in the mature RNA. Which of the following molecules play a role in mediating this process ?

(A) Small interfering RNA

(B) Nucleolar RNA

(C) Messenger RNA

(D) Guide RNA

66. Three dimensional structure of living cells/tissues can be viewed in

(A) Phase contrast microscope

(B) Fluorescence microscope

(C) Differential interference contrast microscope

(D) Stereo microscope

67. Which of the following is NOT a mating system ?

(A) Polyandry

(B) Polygyny

(C) Polygamy

(D) Sexual selection

68. Neem based biopesticide, Azadirachtin does not directly kill pest, but alters the life processing behavior in such a manner that the insect can no longer feed, breed or undergo metamorphosis. Azadirachtin interferes with the metabolism of

(A) Carbohydrates

(B) Ecodysone

(C) Cholesterol

(D) Estrogen

69. Which one of the following methods is used to detect the distribution of specific mRNAs within a cell ?

(A) RNase protection assay

(B) *In-situ* hybridization

(C) Northern Blot analysis

(D) Site Mapping

70. Trees may be damaged by animals which rub against them, wearing a strip of bark right around the tree trunk and exposing the xylem. The tree will then

(A) Die quickly because the leaves are deprived of food and water

(B) Die quickly because fungi enter the trunk through the wounds

(C) Continue to grow because bark always regrows to cover a wound

(D) It does not affect the tree

71. The mechanism of signal transduction by steroid hormone differs from amine and peptide hormone because

(A) Steroids use small, water soluble second messengers

(B) Steroid hormones act directly without the requirement of any receptor

(C) They bind to cytoplasmic or nuclear receptors and affect gene expression

(D) They all act through G proteins

72. Which one of the following feature is not associated with grasses ?

(A) Aleurone tissue

(B) Seutellum

(C) Cellular endosperm

(D) Three celled pollen

73. Apoptosis, a process of cell death in living organism occurs

(A) In HIV infected cells

(B) Naturally as a part of normal cellular development

(C) In carcinogenic cells

(D) Due to malnutrition

74. The major amphibolic pathway in almost all living organism is

(A) Glycolytic pathway

(B) Beta oxidation pathway

(C) Photosynthetic pathway

(D) Citric acid cycle pathway

75. Student's t-test is used for the comparison of

(A) Two sample means

(B) An independent variable with a dependent variable

(C) Three sample means

(D) Two independent variables and a number of dependent variables

76. Precursor for ethylene biosynthesis is

(A) Methionine

(B) Isopentane pyrophosphate

(C) Tyrosine

(D) Alpha ketoglutarate

77. Leydig cells secrete

(A) Growth hormone

(B) Estrogens

(C) Androgens

(D) Gonadotropins

78. Almost all the terpenoids are made up of

(A) Acetyl groups

(B) Isoprene units

(C) Fresnyl pyrophosphate

(D) TCA cycle intermediates

79. Which one of the following is NOT an example of extrachromosomal inheritance ?

(A) Yeast – Petite

(B) *Drosophila* – Bar eye

(C) *Neurospora* – Poky

(D) Snail – Shell coiling

80. Which of the following cloning vectors can be used to clone 3 kb and 300 kb DNA fragments ? Choose the correct order and vectors.

(A) Phasmid and Plasmid

(B) YAC and Cosmid

(C) Plasmid and Phage

(D) Plasmid and YAC

81. During maturation of B cells, the immunoglobulin gene rearrangements occur due to

(A) Meiotic recombination

(B) Sister chromatid exchange

(C) Site specific recombination

(D) Site directed mutagenesis

82. ABO blood group in man is an example for

(A) Pleiotropic effects

(B) Multiple alleles and co-dominance

(C) Sex linked and sex limited inheritance

(D) Polygenic inheritance

83. Goodness of Fit is carried out by using

(A) Chi square test

(B) Student's t-test

(C) ANOVA

(D) PCA

84. What is meant by the word "Whorl" in discussing floral meristem ?

(A) When leaf primordia first arise, they arise in a pattern described as "Whorl"

(B) Flowers consist of four different types of organs which occur in concentric rings called "Whorl"

(C) The floral meristem has to spin around during flower formation, the process is named "Whorl"

(D) The six stamens in a dicot flower like that of *Arabidopsis* form a ring that is called the flower's "Whorl"

85. Match the following :

Category 1	Category 2
a. *Yersinia pestis*	1. Hansen's disease
b. *Mycobacterium leprae*	2. Mumps
c. Rubulavirus	3. Measles
d. Morbillivirus	4. Black plague

(A) a – 4, b – 1, c – 2, d – 3

(B) a – 1, b – 4, c – 3, d – 2

(C) a – 2, b – 3, c – 1, d – 4

(D) a – 3, b – 2, c – 4, d – 1

86. The following is absolutely essential for the functioning of an ecosystem

(A) Producers and herbivores

(B) Decomposers

(C) Producers, herbivores and carnivores

(D) Producers and decomposers

87. Which of the following is the right sequence of spermatogenesis ?

(A) Spermatocytes, spermatids, spermatozoa, spermatogonia

(B) Spermatids, spermatozoa, spermatogonia, spermatocytes

(C) Spermatozoa, Spermatids, spermatocytes, spermatogonia,

(D) Spermatogonia, spermatocytes, spermatids, spermatozoa

88. Plasmodesmata in plants are similar to which one of the following structures of the animal cells ?

(A) Peroxisome

(B) Gap junction

(C) Extracellular matrix

(D) Cell cytoskeleton

89. Prokaryotic organisms have been divided into two domains, bacteria and archaea. This division is based on

i. Differences in cell wall composition

ii. Differences in cell membrane composition

iii. Presence or absence of introns

iv. Presence or absence of amino acids

(A) i and iii are correct

(B) i, ii and iii are correct

(C) ii and iv are correct

(D) ii, iii and iv are correct

90. Match the following :

Category 1	Category 2
a. Protozoa	1. Cell wall made up of Cellulose
b. Eubacteria	2. Cell wall made up of Chitin
c. Fungi	3. Cell wall made up of Murein
d. Algae	4. Cell wall without Murein
	5. Cell wall is absent

(A) a – 5, b – 3, c – 2, d – 1

(B) a – 5, b – 1, c – 2, d – 3

(C) a – 3, b – 2, c – 1, d – 4

(D) a – 5, b – 2, c – 1, d – 4

91. Leucoplast are

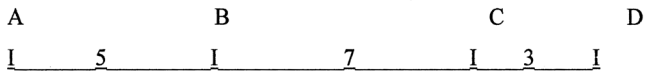
(A) A form of blood cells

(B) Plastids present in plant cells without pigments

(C) White blood cells

(D) Insect blood cells

92. The map of four genes on chromosome are as follows with map distance indicated.



Between which two genes would you expect highest frequency of recombination ?

(A) Between B and C

(B) Between A and D

(C) Between A and C

(D) Between B and D

93. International Kyoto Protocol (1997) of United Nations Framework Convention on the Climate Changes (UNFCCC) which came into implementation in 2005 mainly deals with

(A) Usage of chemical fertilizers

(B) Usage of pesticides in agriculture

(C) Reduction of greenhouse gases

(D) Safety of GM foods

94. Match the following :

Category 1	Category 2
a. Fungi	1. Leishmaniasis
b. Bacteria	2. Foot and mouth disease
c. Protozoa	3. Alzheimer's disease
d. Virus	4. Cholera
	5. Rice blast

(A) a – 5, b – 4, c – 1, d – 2

(B) a – 2, b – 4, c – 1, d – 5

(C) a – 3, b – 4, c – 1, d – 5

(D) a – 2, b – 3, c – 5, d – 1

95. Match the following :

Category 1	Category 2
a. Nanos	1. Gap gene
b. Bicoid	2. Formation of anterior structures of embryo
c. Kruppel	3. Segment polarity gene
d. Engrailed	4. Formation of posterior structures of embryo

(A) a – 2, b – 4, c – 3, d – 1

(B) a – 4, b – 2, c – 1, d – 3

(C) a – 3, b – 1, c – 2, d – 4

(D) a – 1, b – 3, c – 4, d – 2

96. Which one of the following mutagenic agents causes thymidine dimer in DNA ?

(A) UV radiation

(B) Sodium azide

(C) Beta rays

(D) Microwaves

97. Which one of the following plants is the source for Vinblastine and Vincristine, highly valued drugs in cancer chemotherapy ?

(A) *Camptotheca acuminate*

(B) *Atropa belladonna*

(C) *Catharanthus roseus*

(D) *Digitalis lanata*

98. Which of the following sequence correctly represents the phases of a cell cycle ?

(A) G_1, G_2, S, G_0, Mitosis

(B) G_0, G_1, S, G_2, Mitosis

(C) S, G_1, G_2, G_0, Mitosis

(D) Mitosis, G_1, S, G_2, G_0

99. Which of the following statements are CORRECT, with reference to ruminants ?

i. Use micro-organisms to digest cellulose

ii. Have a teeth adapted for mastication

iii. Get their nutrition from digested plant material

iv. Eat their faeces to replenish nutrients

(A) i, ii and iv

(B) i, ii and iii

(C) ii, iii and iv

(D) i, iii and iv

100. Kinetin is a type of cytokinin that was first isolated from

(A) Herring sperm

(B) Ovary of fish

(C) Endosperm of seed

(D) Pollen grains

ಚಿತ್ತು ಬರಹಕ್ಕಾಗಿ ಸ್ಥಳ

Space for Rough Work