

Test Paper : III  
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 : III  
Subject : LIFE SCIENCE

Time : 2 Hours 30 Minutes

Maximum Marks : 150

Number of Pages in this Booklet : 16

Number of Questions in this Booklet : 75

**ಅಭ್ಯರ್ಥಿಗಳಿಗೆ ಸೂಚನೆಗಳು**

- ಈ ಪುಟದ ಮೇಲ್ಭಾಗದಲ್ಲಿ ಒದಗಿಸಿದ ಸ್ಥಳದಲ್ಲಿ ನಿಮ್ಮ ರೋಲ್ ನಂಬರನ್ನು ಬರೆಯಿರಿ.
- ಈ ಪತ್ರಿಕೆಯು ಬಹು ಆಯ್ಕೆ ವಿಧದ ಎಪ್ಪತ್ತೈದು ಪ್ರಶ್ನೆಗಳನ್ನು ಒಳಗೊಂಡಿದೆ.
- ಪರಿಷ್ಕರಿಸಿದ ಪ್ರಾರಂಭದಲ್ಲಿ ಪ್ರಶ್ನೆಪತ್ರಿಕೆಯನ್ನು ನಿಮಗೆ ನೀಡಲಾಗುವುದು. ಮೊದಲ 5 ನಿಮಿಷಗಳಲ್ಲಿ ನೀವು ಪತ್ರಿಕೆಯನ್ನು ತೆರೆಯಲು ಮತ್ತು ಕೆಳಗಿನಂತೆ ಕಡ್ಡಾಯವಾಗಿ ಪರಿಷ್ಕರಿಸಲು ಕೋರಲಾಗಿದೆ.  
(i) ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಗೆ ಪ್ರವೇಶಾಪಕ ಪಡೆಯಲು, ಈ ಹೊದಿಕೆ ಪುಟದ ಅಂಚಿನ ಮೇಲಿರುವ ಪೇಪರ್ ಸೀಲನ್ನು ಹರಿಯಿರಿ. ಸ್ವಿಚ್ ಸೀಲ್ ಇಲ್ಲದ ಅಥವಾ ತೆರೆದ ಪತ್ರಿಕೆಯನ್ನು ಸ್ವೀಕರಿಸಬೇಡಿ.  
(ii) ಪತ್ರಿಕೆಯಲ್ಲಿನ ಪ್ರಶ್ನೆಗಳ ಸಂಖ್ಯೆ ಮತ್ತು ಪುಟಗಳ ಸಂಖ್ಯೆಯನ್ನು ಮುಖಪುಟದ ಮೇಲೆ ಮುದ್ರಿಸಿದ ಮಾಹಿತಿಯೊಂದಿಗೆ ತಾಳೆ ನೋಡಿರಿ. ಪುಟಗಳು/ಪ್ರಶ್ನೆಗಳು ಕಾಣೆಯಾದ, ಅಥವಾ ದ್ವಿಪ್ರತಿ ಅಥವಾ ಅನುಕ್ರಮವಾಗಿಲ್ಲದ ಅಥವಾ ಇತರ ಯಾವುದೇ ವ್ಯತ್ಯಾಸದ ದೋಷಪೂರಿತ ಪ್ರಶ್ನೆಗಳನ್ನು ಕೂಡಲೇ 5 ನಿಮಿಷದ ಅವಧಿ ಒಳಗೆ, ಸಂವೀಕ್ಷಕರಿಂದ ಸರಿ ಇರುವ ಪತ್ರಿಕೆಗೆ ಬದಲಾಯಿಸಿಕೊಳ್ಳಬೇಕು. ಆ ಬಳಿಕ ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಯನ್ನು ಬದಲಾಯಿಸಲಾಗುವುದಿಲ್ಲ, ಯಾವುದೇ ಹೆಚ್ಚು ಸಮಯವನ್ನೂ ಕೊಡಲಾಗುವುದಿಲ್ಲ.
- 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	C	D
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(C) ಸರಿಯಾದ ಉತ್ತರವಾಗಿದ್ದಾಗ.
- ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಗಳನ್ನು ಪತ್ರಿಕೆ III ಪ್ರಶ್ನೆಗಳೊಳಗೆ ಕೊಟ್ಟಿರುವ OMR ಉತ್ತರ ಹಾಳೆಯಲ್ಲಿ ಮಾತ್ರವೇ ಸೂಚಿಸತಕ್ಕದ್ದು. OMR ಉತ್ತರ ಹಾಳೆಯಲ್ಲಿನ ಅಂಡಾಕೃತಿ ಹೊರತುಪಡಿಸಿ ಬೇರೆ ಯಾವುದೇ ಸ್ಥಳದಲ್ಲಿ ಗುರುತಿಸಿದರೆ, ಅದರ ಮೌಲ್ಯಮಾಪನ ಮಾಡಲಾಗುವುದಿಲ್ಲ.
- OMR ಉತ್ತರ ಹಾಳೆಯಲ್ಲಿ ಕೊಟ್ಟ ಸೂಚನೆಗಳನ್ನು ಜಾಗರೂಕತೆಯಿಂದ ಓದಿರಿ.
- ಎಲ್ಲಾ ಕರಡು ಕೆಲಸವನ್ನು ಪತ್ರಿಕೆಯ ಕೊನೆಯಲ್ಲಿ ಮಾಡತಕ್ಕದ್ದು.
- ನಿಮ್ಮ ಗುರುತನ್ನು ಬಹಿರಂಗಪಡಿಸಬಹುದಾದ ನಿಮ್ಮ ಹೆಸರು ಅಥವಾ ಯಾವುದೇ ಚಿಹ್ನೆಯನ್ನು, ಸಂಗತವಾದ ಸ್ಥಳ ಹೊರತು ಪಡಿಸಿ, OMR ಉತ್ತರ ಹಾಳೆಯ ಯಾವುದೇ ಭಾಗದಲ್ಲಿ ಬರೆದರೆ, ನೀವು ಅನರ್ಹತೆಗೆ ಬಾಧ್ಯರಾಗುತ್ತೀರಿ.
- ಪರಿಷ್ಕರಿಸಿದ ಮುಗಿದನಂತರ, ಕಡ್ಡಾಯವಾಗಿ OMR ಉತ್ತರ ಹಾಳೆಯನ್ನು ಸಂವೀಕ್ಷಕರಿಗೆ ನೀವು ಹಿಂತಿರುಗಿಸಬೇಕು ಮತ್ತು ಪರಿಷ್ಕರಿಸಿದ ಕೊಡಲಿಯ ಹೊರಗೆ OMR ನ್ನು ನಿಮ್ಮೊಂದಿಗೆ ಕೊಂಡೊಯ್ಯಕೂಡದು.
- ಪರಿಷ್ಕರಿಸಿದ ನಂತರ, ಪರಿಷ್ಕರಿಸಿದ ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಯನ್ನು ಮತ್ತು ನಕಲು OMR ಉತ್ತರ ಹಾಳೆಯನ್ನು ನಿಮ್ಮೊಂದಿಗೆ ತೆಗೆದುಕೊಂಡು ಹೋಗಬಹುದು.
- ನೀಲಿ/ಕಪ್ಪು ಬಾಲ್ ಪಾಯಿಂಟ್ ಪೆನ್ ಮಾತ್ರವೇ ಉಪಯೋಗಿಸಿರಿ.
- ಕ್ಯಾಲ್ಕುಲೇಟರ್ ಅಥವಾ ಲಾಗ್ ಟೇಬಲ್ ಇತ್ಯಾದಿಯ ಉಪಯೋಗವನ್ನು ನಿಷೇಧಿಸಲಾಗಿದೆ.
- ಸರಿ ಅಲ್ಲದ ಉತ್ತರಗಳಿಗೆ ಋಣ ಅಂಕ ಇರುವುದಿಲ್ಲ.
- ಕನ್ನಡ ಮತ್ತು ಇಂಗ್ಲಿಷ್ ಆವೃತ್ತಿಗಳ ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಗಳಲ್ಲಿ ಯಾವುದೇ ರೀತಿಯ ವ್ಯತ್ಯಾಸಗಳು ಕಂಡುಬಂದಲ್ಲಿ, ಇಂಗ್ಲಿಷ್ 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 seventy five 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 oval as indicated below on the correct response against each item.  
Example : 

A	B	C	D
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where (C) is the correct response.
- Your responses to the question of Paper III are to be indicated in the **OMR Sheet kept inside the Booklet**. If you mark at any place other than in the ovals in OMR Answer 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 soon after the examination.
- Use only Blue/Black Ball point pen.
- Use of any calculator 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 SCIENCE**  
**PAPER – III**

**Note :** This paper contains **seventy-five (75)** objective type questions. **Each** question carries **two (2)** marks. **All** questions are **compulsory**.

1. Association of a nucleotide base with a complementary one by the formation of specific hydrogen bonding is
  - (A) Peptide bond
  - (B) Base pairing
  - (C) Recombination
  - (D) Mismatching
2. \_\_\_\_\_ is a retroviral based transposon designed for mutagenesis in vertebrates.
  - (A) Frog princess
  - (B) LINES
  - (C) SINES
  - (D) Tn3
3. The number of chromosomes in a normal human sperm is
  - (A) 24
  - (B) 22
  - (C) 46
  - (D) 23
4. Two important functions of cell membrane
  - (A) Selective permeability and active transport
  - (B) Selective permeability and partial transport
  - (C) Active transport and permeability
  - (D) Passive transport and permeability
5. Cell cycle is controlled by
  - (A) Phosphatases
  - (B) Cyclins
  - (C) r-RNA genes
  - (D) Transferases
6. Strategy used for whole genome sequencing by Gaig ventor is
  - (A) Clone-contig method
  - (B) Piece by piece method
  - (C) Shot-gun method
  - (D) Microarray method



7. During splicing spliceosome component recognizes
- (A) 5' – AU – AG – 3'
  - (B) 5' – CU – AG – 3'
  - (C) 5' – TU – AG – 3'
  - (D) 5' – GU – AG – 3'
8. Which of the following statement is correct ?
- (A) In the presence of sry, all sexual differentiation follows the female pathway in humans
  - (B) In the absence of sry, all sexual differentiation follows the female pathway in humans
  - (C) In the absence of her – 1, all sexual differentiation follows the female pathway in humans
  - (D) In the absence of her – 1, all sexual differentiation follows the male pathway in humans
9. A logical sequence for research on any complex disease would be
- (A) Family studies, segregation analysis, linkage analysis, DNA sequence analysis
  - (B) Family studies, segregation studies, DNA sequence analysis, linkage analysis
  - (C) Family studies, linkage analysis, segregation analysis, DNA sequence analysis
  - (D) Family studies, DNA sequence analysis, segregation analysis, linkage analysis
10. Fragile X is formed by trinucleotide expansion of
- (A) CAA
  - (B) CGA
  - (C) CGG
  - (D) GAA
11. The inversion which includes centromere and marked by alter chromosome morphology is
- (A) Paracentric
  - (B) Pericentric
  - (C) Holocentric
  - (D) Telocentric
12. If an individual has the genotype AaBBDD, what fraction of the gametes produced will be AbD if the genes are unlinked ?
- (A)  $\frac{1}{4}$
  - (B)  $\frac{1}{2}$
  - (C) 0
  - (D)  $\frac{1}{16}$



13. The surface of the body of an animal in \_\_\_\_\_ phylum has large number of minute openings.
- (A) Coelenterata
  - (B) Annelida
  - (C) Protozoa
  - (D) Porifera
14. The best method to determine the genotype of dominant parent is by crossing it with the hybrid
- (A)  $F_2$  cross
  - (B) Test cross
  - (C) Selfing
  - (D) Cross fertilisation
15. Panmictic population is also called
- (A) Endemic population
  - (B) Inbreeding population
  - (C) Cosmopolitan population
  - (D) Random population
16. In the study of history of evolution the idea of “great chain of being” is proposed by
- (A) Aristotle
  - (B) Anaximander
  - (C) Linnaeus
  - (D) Buffon
17. Tertiary structure of trypsin and chymotrypsin suggests that, they had their origin from
- (A) Translocated genes
  - (B) Invested genes
  - (C) Duplicated genes
  - (D) Deleted genes
18. Homology search and screening is used for
- (A) DNA sequencing
  - (B) Gene isolation
  - (C) Gene therapy
  - (D) DNA finger printing
19. The first microorganism used in the production of recombinant proteins
- (A) Escherichia coli
  - (B) Agrobacterium tumifaceans
  - (C) Bacillus subtilis
  - (D) Plasmodium vivax



20. In \_\_\_\_\_ technique data retrieval is slow, map positions for not more than few markers will be obtained in a single experiment.
- (A) SNP
  - (B) Radiation hybrid
  - (C) FISH
  - (D) STS
21. RNA interference is used to
- (A) Interfere with specific transcription factors
  - (B) Knockout the expression of a specific gene
  - (C) Cause a mutation in specific gene
  - (D) Stimulates apoptosis
22. The DNA microarray technology that indicates, which genes are transcribed is called
- (A) DNA variation screening
  - (B) Microarray comparative genomic hybridization
  - (C) Gene expression profiling
  - (D) Antisense RNA screening
23. Molecular karyotype means
- (A) Pulse-field gel electrophoresis
  - (B) Polyacrylamide gel electrophoresis
  - (C) Agarose gel electrophoresis
  - (D) 2-D electrophoresis
24. Raphanobrassica is
- (A) Interspecific hybrid
  - (B) Intervarietal hybrid
  - (C) Intravarietal hybrid
  - (D) Inter-generic hybrid
25. The probes for DNA finger printing are
- (A) unknown single stranded labeled DNA
  - (B) unknown double stranded labeled DNA
  - (C) known single stranded labeled DNA
  - (D) known double stranded unlabeled DNA
26. Which of the following bacteria is highly resistant to ionizing radiations ?
- (A) Staphylococcus
  - (B) Deinococcus
  - (C) Streptococcus
  - (D) Pneumococcus



27. Which of the following is due to the defect in DNA repair enzymes ?
- (A) Xeroderma pigmentosum
  - (B) Burkitt's lymphoma
  - (C) Myasthenia gravis
  - (D) Down's syndrome
28. Read the statement I & II and choose the correct answer :
- Statement I :** A given hormone may bind to multiple receptors and a given receptor may bind multiple hormones.
- Statement II :** Hormone receptors do not have the property of reversibility.
- (A) Statement I and II are correct
  - (B) Statement I correct and II wrong
  - (C) Statement I and II are wrong
  - (D) Statement I wrong, II correct
29. Beetles belong to the order
- (A) Deoptera
  - (B) Lepidoptera
  - (C) Hemiptera
  - (D) Coleoptera
30. Who got the nobel award in medicine for devising the MRI technique ?
- (A) H. Temin and D. Baltimore
  - (B) R. Franklin and F. Crick
  - (C) P. Lauterber and P. Mansfield
  - (D) G. Binning and E. Southern
31. Methyl carbon of pyruvate was labeled with  $^{14}\text{C}$ . If this pyruvate underwent gluconeogenesis, which carbon of glucose will be labelled ?
- (A) 1
  - (B) 1 and 3
  - (C) 3
  - (D) All
32. The entropy of a thermodynamic system refers to
- (A) Heat given off by the reaction
  - (B) Tendency of a system to randomness
  - (C) Maximum energy of the transition states
  - (D) Effect of temperature on the reaction velocities



- 33.** Trypsin was formed to cleave the peptide  
Asp – Ala – Leu – Phe – Arg – Asp – Val  
The products will be
- (A) Asp – Ala – Leu, Phe, Arg – Asp – Val
  - (B) Mixture of aminoacids
  - (C) Asp – Ala – Leu – Phe, Arg – Asp – Val
  - (D) Asp – Ala – Leu – Phe – Arg, Asp – Val
- 34.** An enzyme formed 0.1% of the total protein in the homogenate. If this enzyme is to be purified to homogeneity, what is the fold purification that is required ?
- (A) 100
  - (B) 1,000
  - (C) 10,000
  - (D) It can never be purified
- 35.** The coronary arteries arise from the
- (A) Superior vena cava
  - (B) Right atrium
  - (C) Pulmonary trunk
  - (D) Aorta
- 36.** Which of the following are correct for positive correlation ?
- I. Both variables increase
  - II. One variable increases, the other decreases
  - III. Both variable decrease
  - IV. One variable decreases, the other increases
- (A) I and II correct
  - (B) I and III correct
  - (C) II and III are correct
  - (D) III and IV are correct
- 37.** When a distribution is positively skewed
- (A) The mean is higher than mode
  - (B) The mean is lower than mode
  - (C) The mean is equal to mode
  - (D) The mean is equal to median
- 38.** Polytene chromosomes in *Drosophila* are formed during
- (A) Telophase
  - (B) Metaphase
  - (C) Prophase
  - (D) Interphase



39. The standard deviation is a measure of \_\_\_\_\_ of a frequency distribution.
- (A) Central tendency
  - (B) Variability
  - (C) Similarity
  - (D) Normality
40. Read the statements A & B and choose the correct answer :
- Statement A** : The Down's syndrome (Mangolism) individuals have 47 chromosomes instead of 46.
- Statement B** : The Down's syndrome (Mangolism) individuals show sex chromosomes abnormality.
- (A) Both the statements are correct
  - (B) Both the statements are wrong
  - (C) Statement A is correct, B is wrong
  - (D) Statement B is correct, A is wrong
41. Which of the following is the causative agent of cerebral malaria ?
- (A) Plasmodium vivax
  - (B) Plasmodium Ovale
  - (C) Plasmodium malarial
  - (D) Plasmodium falciparum
42. Enzymes and intermediates of the Calvin cycle of photosynthesis are located in the
- (A) Thylakoid membrane
  - (B) Thylakoid lumen
  - (C) Inner chloroplast membrane
  - (D) Stroma
43. Which is the chromosome location of retinoblastoma gene (RB) in humans ?
- (A) 13q.14
  - (B) 9q.34
  - (C) 17p.13
  - (D) 17q.21
44. Pioneering work on viral carcinogenesis was done by
- I. Peyton Rous
  - II. Ellerman and Bang
  - III. Howard Temin
  - IV. Bittner
- (A) I, II, III correct
  - (B) I, II, IV correct
  - (C) II, III, IV correct
  - (D) I, III, IV correct



45. Which of the following is not true for adaptive immunity ?

- (A) Antigen specificity
- (B) Does not confer long lasting immunity to the host
- (C) Diversity
- (D) Immunologic memory

46. Read the following statements and choose the correct answer :

**Statement I :** Erythropoietin is a hormone required for the production of erythrocytes.

**Statement II :** It is produced by liver cells.

- (A) Statement I correct and II wrong
- (B) Statement I and II are correct
- (C) Statement I wrong and II correct
- (D) Statement I and II wrong

47. In the development of vertebrates, which of the following gives rise to vertebrae ?

- (A) Myotome
- (B) Dermatome
- (C) Sclerotome
- (D) Ectoderm

48. Which part of the brain is involved in spatial memory ?

- (A) Thalamus
- (B) Pineal gland
- (C) Hippocampus
- (D) Cerebellum

49. Phosphorylation cascades involving a series of protein kinases are useful for cellular signal transduction because

- (A) They are species specific
- (B) They always lead to the same cellular response
- (C) They amplify the original signal many fold
- (D) They counter the harmful effects of phosphatases

50. Bacterial quorum-sensing signal molecule contains

- (A) Manganese
- (B) Magnesium
- (C) Molybdenum
- (D) Boron



51. Most signal molecules

- (A) Easily diffuse the membrane and bind to receptor in the cytoplasm or nucleus
- (B) Bind to membrane receptors and transmit information across a membrane without transversing the membrane
- (C) Carryout functions in the nucleus after binding to a receptor in the cell membrane
- (D) A and C

52. In an oxygenic photosynthesis, the green and purple bacteria do not use which of the following as an electron source ?

- (A)  $H_2O$
- (B)  $H_2$
- (C)  $H_2S$
- (D) Sulphur

53. Among the following which molecule till now not synthesized by mimicking the environment of pre-biotic environment ?

- (A) Pyrimidine
- (B) Purine
- (C) L-aminoacids
- (D) Ribose

54. Progeroid syndrome are group of rare genetic disorder that mimic physiological ageing. Which of the following are/is not a progeroid syndrome ?

- (A) Edward's syndrome
- (B) Werner syndrome
- (C) Cockayne syndrome
- (D) Bloom syndrome

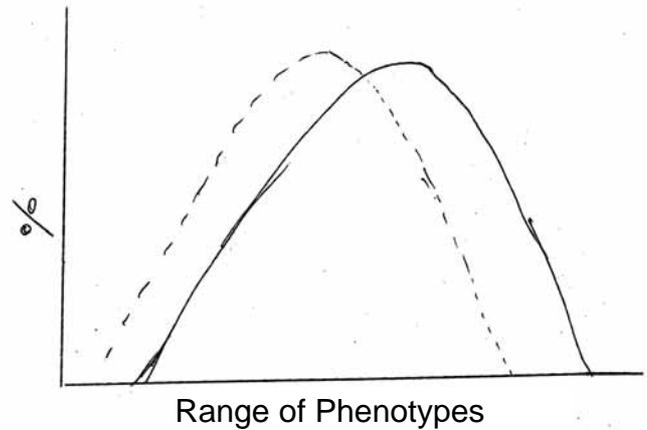
55. Which of the following bacteria divides in three planes ?

- (A) Streptococcus
- (B) Staphylococcus
- (C) Sarcia
- (D) Rhizobium



56. Rhizophora mucronata is a
- (A) Mangrove plant
  - (B) Terrestrial plant
  - (C) Freshwater plant
  - (D) Sea grass
57. Following bacteria significantly contribute for nitrogen fixation in paddy fields in India.
- (A) Anabaena
  - (B) Azotobacter
  - (C) Frankia
  - (D) Clostridium
58. Birds of the following island provided clues to Darwin about speciation
- (A) Hawaiian islands
  - (B) Andaman islands
  - (C) Galapagos islands
  - (D) Solomon islands
59. Dinosaurs were densely populated during
- (A) Cretaceous era
  - (B) Paleozoic era
  - (C) Mesozoic era
  - (D) Cenozoic era

60.



Above image exhibits the range of phenotype of original populations (-----) and evolved populations (—————). This type of selection is called

- (A) Stabilizing selection
  - (B) Disruptive selection
  - (C) Group selection
  - (D) Directional selection
61. The term homeobox refers to
- (A) A specific nucleotide sequence of some genes that regulate development
  - (B) A group of genes that determine polarity during development
  - (C) Glycoproteins that assist cells during morphogenetic movements
  - (D) Peptide sequence of aminoacids that turn other genes on or off



62. The hydrolytic enzymes which occur in lysosome work most effectively under condition of
- (A) Alkaline pH
  - (B) Acidic pH
  - (C) Neutral pH
  - (D) Salinity
63. The first vaccine developed from animal cell culture was
- (A) Hepatitis B vaccine
  - (B) Influenza vaccine
  - (C) Small pox vaccine
  - (D) Polio vaccine
64. Which fungus was used as a source of cellulase and pectinase by E.C. Cocking during protoplast isolation ?
- (A) Fusarium
  - (B) Mysothecium
  - (C) Trichoderma
  - (D) Polypore
65. Which of the following plants was used by Sipra Guha Mukherjee and Maheshwari to produce haploid plants ?
- (A) Tomato
  - (B) Potato
  - (C) Carrot
  - (D) Datura
66. A non directed physico-chemical interaction between heavy metal ions and microbial surface is called
- (A) Biotransformation
  - (B) Bioconversion
  - (C) Biosorption
  - (D) Biomining
67. Energy and nutrients enter a community by way of
- (A) Consumers
  - (B) Scavengers
  - (C) Detritivores
  - (D) Producers



68. Point out the mismatch in the following :

Organelle	Marker molecule
i. Mitochondria	Cytochrome oxidase
ii. Golgi complex	Inosine diphosphate
iii. Peroxisome	Permease
iv. Lysosome	Acid phosphatase

- (A) ii
- (B) i
- (C) iii
- (D) iv

69. Vinegar is obtained from molasses with the help of

- (A) Penicillin
- (B) Acetobacter
- (C) Yeast
- (D) Aspergillus

70. The exponential phase of growth, in cell cultures is called

- (A) Lag phase
- (B) Log phase
- (C) Plateau phase
- (D) Mitotic phase

71. Clones are identified by hybridizing them with

- (A) Probe
- (B) Vector
- (C) Antibody
- (D) Virus

72. Which of the following is tumor suppressor gene ?

- (A) SrC
- (B) abl
- (C) sis
- (D) p53

73. Which of the following is implicated in human cervical cancers ?

- (A) Epstein-Barr virus
- (B) Human papilloma virus
- (C) Hepatitis c-virus
- (D) Vaccinia virus

74. Inheritance of acquired characters was proposed by

- (A) Lamarck
- (B) Morgan
- (C) Darwin
- (D) Weisman

75. Radiations can be detected through

- (A) ELISA reader
- (B) Spectrophotometer
- (C) Geiger Muller counter
- (D) MalDi-Tof



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