

Test Paper : III
Test Subject : LIFE SCIENCE
Test Subject Code : K-2816

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 ಏಕಪತ್ರ ಪ್ರಶ್ನೆಗಳನ್ನು ಒಳಗೊಂಡಿದೆ.
- ಪರಿಷ್ಕರಣೆ ಪ್ರಾರಂಭದಲ್ಲಿ ಪ್ರಶ್ನೆಪತ್ರಿಕೆಯನ್ನು ನಿಮಗೇನಿಡಲಾಗುವುದು. ಮೊದಲ 5 ನಿಮಿಷಗಳಲ್ಲಿ ನೀವು ಪ್ರಶ್ನೆಪತ್ರಿಕೆಯನ್ನು ತೆರೆಯಲು ಮತ್ತು ಕೆಳಗಿನಂತೆ ಕಡ್ಡಾಯವಾಗಿ ಪರಿಷ್ಕರಣೆ ಕೋರಲಾಗಿದೆ.
(i) ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಗೆ ಪ್ರವೇಶವಾಗುವ ಪದವಿಯು, ಈ ಹೊದಿಕೆ ಪುಟದ ಅಂಚಿನ ಮೇಲಿರುವ ಪೇಪರ್ ಸೀಲನ್ನು ಹರಿಯಿರಿ. ಸ್ವಿಕ್ಲರ್ ಸೀಲ್ ಇಲ್ಲದ ಅಥವಾ ತೆರೆದ ಪ್ರಶ್ನೆಪತ್ರಿಕೆಯನ್ನು ಸ್ವೀಕರಿಸಬೇಡಿ.
(ii) ಪ್ರಶ್ನೆಪತ್ರಿಕೆಯಲ್ಲಿನ ಪ್ರಶ್ನೆಗಳ ಸಂಖ್ಯೆ ಮತ್ತು ಪುಟಗಳ ಸಂಖ್ಯೆಯನ್ನು ಮುಖಪುಟದ ಮೇಲೆ ಮುದ್ರಿಸಿದ ಮಾಹಿತಿಯೊಂದಿಗೆ ತಾಳೆ ನೋಡಿರಿ. ಪುಟಗಳು/ಪ್ರಶ್ನೆಗಳು ಕಾಣೆಯಾದ, ಅಥವಾ ದ್ವಿಪ್ರತಿ ಅಥವಾ ಅನುಕ್ರಮವಾಗಿಲ್ಲದ ಅಥವಾ ಇತರ ಯಾವುದೇ ವ್ಯತ್ಯಾಸದ ದೋಷಪೂರಿತ ಪ್ರಶ್ನೆಪತ್ರಿಕೆಯನ್ನು ಕೂಡಲೇ 5 ನಿಮಿಷದ ಅವಧಿ ಒಳಗೆ, ಸಂವೀಕ್ಷಕರಿಂದ ಸರಿ ಇರುವ ಪ್ರಶ್ನೆಪತ್ರಿಕೆಗೆ 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 ಕವಚಿಸಬೇಕು.
ಉದಾಹರಣೆ :

A	B	●	D
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(C) ಸರಿಯಾದ ಉತ್ತರವಾಗಿದ್ದಾಗ.
- ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಗಳನ್ನು ಪತ್ರಿಕೆ III ಪ್ರಶ್ನೆಪತ್ರಿಕೆಯೊಳಗೆ ಕೊಟ್ಟಿರುವ OMR ಉತ್ತರ ಹಾಳೆಯಲ್ಲಿ ಮಾತ್ರವೇ ಸೂಚಿಸತಕ್ಕದ್ದು. OMR ಹಾಳೆಯಲ್ಲಿನ ಅಂಡಾಕೃತಿ ಹೊರತುಪಡಿಸಿ ಬೇರೆ ಯಾವುದೇ ಸ್ಥಳದಲ್ಲಿ ಗುರುತಿಸಿದರೆ, ಅದರ ಮೌಲ್ಯಮಾಪನ ಮಾಡಲಾಗುವುದಿಲ್ಲ.
- OMR ಉತ್ತರ ಹಾಳೆಯಲ್ಲಿ ಕೊಟ್ಟ ಸೂಚನೆಗಳನ್ನು ಜಾಗರೂಕತೆಯಿಂದ ಓದಿರಿ.
- ಎಲ್ಲಾ ಕರಡು ಕೆಲಸವನ್ನು ಪ್ರಶ್ನೆಪತ್ರಿಕೆಯ ಕೊನೆಯಲ್ಲಿ ಮಾಡತಕ್ಕದ್ದು.
- ನಿಮ್ಮ ಗುರುತನ್ನು ಬಹಿರಂಗಪಡಿಸಬಹುದಾದ ನಿಮ್ಮ ಹೆಸರು ಅಥವಾ ಯಾವುದೇ ಚಿಹ್ನೆಯನ್ನು, ಸಂಗತವಾದ ಸ್ಥಳ ಹೊರತು ಪಡಿಸಿ, OMR ಉತ್ತರ ಹಾಳೆಯ ಯಾವುದೇ ಭಾಗದಲ್ಲಿ ಬರೆಯಬೇಡಿ, ನೀವು ಅನರ್ಹತೆಗೆ ಬಾಧ್ಯರಾಗಿರುತ್ತೀರಿ.
- ಪರಿಷ್ಕರಣೆ ಮುಗಿದ ನಂತರ, ಕಡ್ಡಾಯವಾಗಿ OMR ಉತ್ತರ ಹಾಳೆಯನ್ನು ಸಂವೀಕ್ಷಕರಿಗೆ ನೀವು ಹಿಂತಿರುಗಿಸಬೇಕು ಮತ್ತು ಪರಿಷ್ಕರಣೆ ಕೊಠಡಿಯ ಹೊರಗೆ OMR ನ್ನು ನಿಮ್ಮೊಂದಿಗೆ ಕೊಂಡೊಯ್ಯಕೂಡದು.
- ಪರಿಷ್ಕರಣೆ ನಂತರ, ಪರಿಷ್ಕರಣೆ ಪ್ರಶ್ನೆಪತ್ರಿಕೆಯನ್ನು ಮತ್ತು ನಕಲು OMR ಉತ್ತರ ಹಾಳೆಯನ್ನು ನಿಮ್ಮೊಂದಿಗೆ ತೆಗೆದುಕೊಂಡು ಹೋಗಬಹುದು.
- ನೀಲಿ/ಕಪ್ಪು ಬಾಲ್ ಪಾಯಿಂಟ್ ಪೆನ್ ಮಾತ್ರವೇ ಉಪಯೋಗಿಸಿ.
- ಕ್ಯಾಲ್ಕುಲೇಟರ್, ವಿದ್ಯುನ್ಮಾನ ಉಪಕರಣ ಅಥವಾ ಲಾಗ್ ಟೇಬಲ್ ಇತ್ಯಾದಿಯ ಉಪಯೋಗವನ್ನು ನಿಷೇಧಿಸಲಾಗಿದೆ.
- ಸರಿ ಅಲ್ಲದ ಉತ್ತರಗಳಿಗೆ ಋಣ ಅಂಕ ಇರುವುದಿಲ್ಲ.
- ಕನ್ನಡ ಮತ್ತು ಇಂಗ್ಲೀಷ್ ಆವೃತ್ತಿಗಳ ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಗಳಲ್ಲಿ ಯಾವುದೇ ರೀತಿಯ ವ್ಯತ್ಯಾಸಗಳು 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 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 circle as indicated below on the correct response against each item.
Example :

A	B	●	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 circles in 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 SCIENCE
Paper – III

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

1. The Z-DNA helix
 - (A) has fewer base pair per turn than B-DNA
 - (B) is favoured by alternate GC base pairs
 - (C) tends to be found at 3' ends of genes
 - (D) is the most common conformation of DNA
2. Which of the following chromosome aberration causes change in order of genes in the genetic map without altering its linkage group ?
 - (A) transposition
 - (B) translocation
 - (C) inversion
 - (D) recombination
3. Which of the following is the most appropriate answer regarding microtubule assembly and disassembly during cell division ?
 - (A) Kinetochore microtubules polymerize at their plus ends up to anaphase and then begin to depolymerize
 - (B) Kinetochore microtubules polymerize at their minus ends up to anaphase and then begin to depolymerize
 - (C) Once formed, kinetochore microtubules depolymerize at the plus ends throughout mitosis
 - (D) Once formed, kinetochore microtubules polymerize at the plus ends throughout mitosis



4. Which of the following statement on cell junctions is wrong ?
- (A) Adherens junctions are cell-cell anchoring junctions connecting actin filaments in one cell with that in the next cell
 - (B) Gap junctions are channel forming junctions allowing passage of small water soluble molecules from cell to cell
 - (C) Tight junctions are occluding junctions, which seal gap between two cells
 - (D) Hemidesmosomes are cell-matrix anchoring junctions connecting intermediate filaments in one cell to extracellular matrix
5. The amino acid that can be synthesized directly by the incorporation of ammonia into oxalo acetic acid
- (A) Aspartic acid
 - (B) Alanine
 - (C) Glutamine
 - (D) Proline
6. "Agent Orange" is a
- (A) Colour used in inflorescent lamp
 - (B) Hazardous chemical used in plant
 - (C) Natural insecticide
 - (D) Dioxin containing weedicide
7. Origin of replication usually contains
- (A) AT rich sequence
 - (B) GC rich sequence
 - (C) Both AT and GC rich sequence
 - (D) No particular sequence
8. Regulatory elements for expression of ribosomal RNA genes reside in the
- (A) non-transcribed spacer region
 - (B) transcribed spacer region
 - (C) internal regions within the genes
 - (D) 5' flanking region of individual ribosomal RNA genes
9. In semi-conservative DNA replication, discontinuous fragments called Okazaki fragments are synthesised on the lagging strand. These fragments are synthesised into continuous DNA strand by which enzymes ?
- (A) DNA Pol I and DNA ligase
 - (B) DNA Pol III and DNA ligase
 - (C) DNA Pol II and DNA ligase
 - (D) DNA gyrase and DNA ligase



10. Sequence in TATA box is

- (A) ATGC
- (B) 3' -TATAT-5'
- (C) GCGCAT
- (D) 5'-TATAAA-3'

11. The consensus sequence of 5' and 3' splice junctions in eukaryotic mRNA contains

- (A) GU-GA
- (B) GU-AG
- (C) AG-GU
- (D) CG-AG

12. Choose the appropriate typical structure of a 5' → 3' eukaryotic gene.

- (A) 5' UTR → Promoter → Exons → Introns → 3' UTR
- (B) Promoter → 3' UTR → Exons → Introns → 5' UTR
- (C) 5' UTR → Exons → Introns → 3' UTR → Promoter
- (D) Promoter → 5' UTR → Exons → Introns → 3' UTR

13. A device used for measuring arterial pressure

- (A) Electrocardiogram
- (B) Defibrillator
- (C) Otoscope
- (D) Sphygmomanometer

14. Choose the right match

Category – I

Category – II

- | | |
|----------|-------------------------|
| i. IgA | 1. Basophils |
| ii. IgE | 2. δ heavy chain |
| iii. IgG | 3. Secretory component |
| iv. IgM | 4. Pentamer |
| | 5. Cross placenta |

Which of the above is right match ?

- (A) i-3, ii-1, iii-5, iv-4
- (B) i-3, ii-5, iii-2, iv-1
- (C) i-2, ii-3, iii-5, iv-4
- (D) i-2, ii-1, iii-3, iv-5

15. Which of the following is the right sequence for the auditory pathway ?

- (A) External auditory canal, tympanic membrane, auditory ossicles, oval window, cochlea and spiral organ
- (B) Tympanic membrane, external auditory canal, auditory ossicles, cochlea, spiral organ and round window
- (C) Auditory ossicles, tympanic membrane, cochlea, round window, oval window and external auditory canal
- (D) Auricle, tympanic membrane, round window, cochlea, spiral organ and oval window



16. A cross is made between pure wild type males and brown eyed, curled wing females of *D. melanogaster*. The F_1 females were test crossed. The F_2 progeny obtained are

Wild type	200
Brown eyes, curled wings	150
Brown eyes, normal wings	30
Normal eyes, curled wings	20
Total	400

The genetic distance in cM between brown eye and curled wing loci is

- (A) 50
(B) 12.5
(C) 25
(D) 150
17. Seymour Benzer proposed the concept of Recon by studying recombination between
- (A) white eye mutants of *Drosophila melanogaster*
(B) lysis mutants of bacteriophage T4
(C) biochemical mutants of *Neurospora crassa*
(D) auxotrophic mutants of *Escherichia coli*

18. Upon studying a considerable number of different crosses in *Drosophila*, Morgan reached the conclusion that all the genes of this fly were clustered into four linked groups corresponding to the four pair of chromosomes. Further studies revealed that the linkage is not absolute and it is broken frequently. It is broken in the prophase by a process called

- (A) recombination
(B) mutation
(C) integration
(D) jumping of genes

19. Humans have 23 pairs of chromosomes, while our closest relatives, chimpanzees, have 24. Chromosome studies indicate that at some point early in human evolution, two chromosomes simultaneously broke into a large portion and a small portion. The large parts combined to form a large chromosome, and the small parts combined to form a much smaller chromosome which was subsequently lost. This event could be due to

- (A) nondisjunction followed by deletion
(B) translocation followed by deletion
(C) duplication followed by deletion
(D) translocation followed by inversion



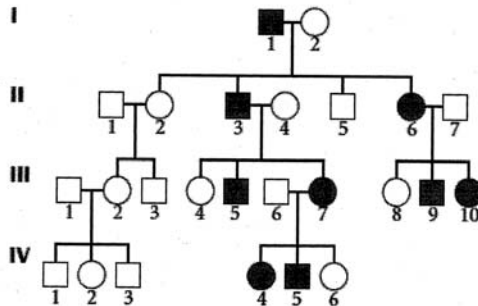
20. Which is the least invasive method of the following used to detect genetic disorders before birth ?
- (A) Chorionic villi sampling
 - (B) Amniocentesis
 - (C) Ultrasound imaging
 - (D) Fetoscopy
21. An autosomal recessive disorder has a population prevalence of 1 : 40 000. The carrier frequency is therefore
- (A) 1/400
 - (B) 1/200
 - (C) 1/100
 - (D) 1/50
22. A couple has a female child with disease, and three unaffected children. Neither of the parents affected with this disease. What is the probable pattern of inheritance ?
- (A) X-linked recessive
 - (B) Autosomal recessive
 - (C) X-linked dominant
 - (D) Autosomal dominant
23. The author of the monumental work "*On the Origin of Species by Means of Natural Selection or the "Preservation of Favored Races in the Struggle for Life"*"
- (A) Alfred Russel Wallace
 - (B) Charles Darwin
 - (C) Charles Darwin and Alfred Russel Wallace
 - (D) Charles Darwin and Charles Lyell
24. Which of the following is not contributing to genomic diversity among various species ?
- (A) Gene duplication
 - (B) Gene transcription
 - (C) Lateral gene transfer
 - (D) Chromosomal rearrangements
25. Which of the following is an insectivorous plant ?
- (A) *Adiantum*
 - (B) *Dionea*
 - (C) *Nephrolepis*
 - (D) *Nerium*



26. The CO_2 acceptor in C_3 plants is

- (A) PEP
- (B) PGA
- (C) RUDP
- (D) NADP

27. Identify the most likely mode of inheritance of the following pedigree.



- (A) X-linked recessive inheritance
- (B) X-linked dominant inheritance
- (C) Autosomal dominant inheritance
- (D) Autosomal recessive inheritance

28. Which among the following is not a thermodynamic system ?

- (A) Open system
- (B) Isolated system
- (C) Closed system
- (D) Surrounding

29. Inorganic element that serves as cofactor in Glutathione peroxidase is

- (A) Copper
- (B) Magnesium
- (C) Nickel
- (D) Selenium

30. Secondary structures of collagen contains

- (A) β -conformation
- (B) Triple helix
- (C) α -helix
- (D) β -helix

31. Which among the following statements is correct about urea cycle ?

- (A) Nitrogens of urea enter cycle as ammonia and alanine
- (B) Urinary urea is increased by diet rich in protein
- (C) Urea cycle occurs exclusively in cytosol
- (D) Urea is produced from hydrolysis of ornithine directly



- 32.** Cadherin helps in
- (A) Cell-cell adhesion
 - (B) Phagocytosis
 - (C) Exocytosis
 - (D) Apoptosis
- 33.** Caspase 3 helps in
- (A) Activation of cells
 - (B) Inhibition of cells
 - (C) Apoptosis of cells
 - (D) Division of cells
- 34.** Petals are formed in the 2nd Whorl due to
- (A) Class A genes
 - (B) Class A+B genes
 - (C) Class B+C genes
 - (D) Class C genes
- 35.** Which of the following organisms has the highest repetitive sequence ?
- (A) *Rana pipiens*
 - (B) *Escherichia. coli*
 - (C) *Mus. musculus*
 - (D) *Arabidopsis thaliana*
- 36.** Consider the following statements.
- Which of the following events in basic life cycle are in the right order ?
- i. Fertilization, cleavage
 - ii. Adulthood, senescence
 - iii. Gastrulation, Germ layer formation
 - iv. Organogenesis, metamorphosis
- Which of the statements given above are right ?
- A) i, ii, iii, iv
 - (B) i, iii, iv, ii
 - (C) i, iv, iii, ii
 - (D) i, ii, iv, iii
- 37.** Identify the technique that allow thousands of genes in different types of cells to be compared simultaneously
- A) Microarray
 - (B) In situ hybridization
 - (C) RFLP
 - (D) Restriction digestion
- 38.** Each mammalian somatic cell, whether male or female, has only one functional X-chromosome. This phenomenon is called
- (A) X-chromosome Histone acetylation
 - (B) Constitutive heterochromatin
 - (C) X-chromosome activation
 - (D) X-chromosome inactivation



39. Gene arrangement of cytotoxic T cells occurs primarily in the
- (A) Bone marrow
 - (B) Spleen
 - (C) Germinal centers
 - (D) Thymus
40. Asthma is a consequence of the release of histamine and heparin from
- (A) Mast cells, which induces oedema and broncho constriction
 - (B) Plasma cells, which induces antibody release
 - (C) Eosinophils, which induces proliferation of basophils
 - (D) Goblet cells, which induces hypersecretion
41. All the following belong to the conducting portion of the respiratory system, except
- (A) Trachea
 - (B) Bronchi
 - (C) Bronchioles
 - (D) Alveoli
42. In the β -cells of the pancreas, proinsulin is converted to insulin
- (A) In the blood stream
 - (B) In clathrin-coated vesicle
 - (C) In the golgi complex
 - (D) At the time of fusion of mature granula
43. The mechanism in which the rate of the solute movement increases by interaction of trans-membrane proteins is termed as
- (A) Endocytosis
 - (B) Simple diffusion
 - (C) Faciliated diffusion
 - (D) Active transport
44. Bulk of protein glycosylation takes place in
- (A) Golgi complex
 - (B) Peroxisomes
 - (C) Ribosomes
 - (D) Lysosomes



45. Which of the given enzyme is involved in packaging/supercoiling of DNA molecule ?

- (A) Topoisomerase
- (B) Ligase
- (C) α -polymerase
- (D) Helicase

46. Which of the following gene was engineered in the “Flavr-Savr” transgenic tomato variety ?

- (A) 1-Amino cyclopropane-1-carboxylic acid synthase
- (B) 1-Amino cyclopropane-1-carboxylic acid oxidase
- (C) Expansin
- (D) Polygalacturonase

47. A taxon is

- (A) A group of related families
- (B) A group of related species
- (C) A type of living organisms
- (D) A taxonomic group of any ranking

48. Consider the following statements.

(Assertion) (A) : Species is a genetically closed system

(Reason) (R) : Its members do not interbreed with member of different species

Which of the following is correct ?

- (A) Both A and R are true, R is the right explanation of A
- (B) Both A and R are true, R is wrong explanation of A
- (C) A is true and R is false
- (D) Both A and R are false

49. Presence of *Chlorella* within *Paramecium* is an example for _____ association.

- (A) Parasitic
- (B) Saprophytic
- (C) Endosymbiotic
- (D) Pathogenic

50. Which of the following is a autoimmune disorder ?

- (A) Multiple sclerosis
- (B) Blood cancer
- (C) Huntington disease
- (D) Cystic fibrosis



51. Consider the following statements.

The methods employed for the detection of viruses are

1. Detection of infectivity using cell cultures
2. Detection of virus nucleic acids
3. Detection of virus antigens
4. Detection of Ergosterols

Which of the above statements are right ?

- (A) 1, 2 and 3 are right
- (B) 1, 2 and 3 are wrong
- (C) 2, 3 and 4 are right
- (D) 1, 2 and 4 are right

52. Carbon source for cyanobacteria during dark reaction is

- (A) Glucose
- (B) CO₂
- (C) Carbohydrate
- (D) Hydrocarbon

53. Which of the following virulence factor protect bacteria from host immune response during phagocytosis ?

- (A) Cytolytic toxins and capsule
- (B) Pronase
- (C) Antigenic Variation
- (D) IgA protease

54. Which of the following spore of *Puccinia graminis* infect *Berberis vulgaris* ?

- (A) Basidiospores
- (B) Teliospores
- (C) Urediniospores
- (D) Aeciospores

55. Localized clusters of cambium-like cells in the callus is referred to as

- (A) Cybrids
- (B) Meristemoids
- (C) Embryoids
- (D) Lutoids



56. Rotavirus is a
- (A) Double-stranded DNA virus
 - (B) Single-stranded DNA virus
 - (C) Double-stranded RNA virus
 - (D) Single-stranded RNA virus
57. Typhoid is caused by
- (A) *Eschrichia*
 - (B) *Bacillus*
 - (C) *Mycobacterium*
 - (D) *Salmonella*
58. Identify the virus that has recently attracted strict quarantine measures, to avoid pandemic scare
- (A) HIV
 - (B) SARS
 - (C) Ebola
 - (D) Hepatitis
59. Heterothallism in fungi was reported for the first time by
- (A) Alexopoulous
 - (B) Landecker
 - (C) Blakeslee
 - (D) Mims
60. The fungus exploited as a source for mycoprotein "Quorn" is
- (A) *Fusarium salani*
 - (B) *Fusarium semitectum*
 - (C) *Fusarium graminearum*
 - (D) *Fusarium monoliformae*
61. According to the competitive exclusion principle, two species cannot continue to occupy the same
- (A) Habitat
 - (B) Niche
 - (C) Range
 - (D) Biome
62. Which of the following is a coagulant fixative ?
- (A) Formaldehyde
 - (B) Osmium tetroxide
 - (C) Acetic acid
 - (D) Ethanol



- 63.** FMDV causes significant economic loss to which of the following industry ?
- (A) Dairy
 - (B) Poultry
 - (C) Fishery
 - (D) Piggery
- 64.** In island biogeography theory, if there are two islands and one is closer to the mainland, the closer would have
- (A) A lower rate of extinction than the distant island
 - (B) Fewer species than the distant island
 - (C) A higher rate of extinction than the distant island
 - (D) A higher rate of immigration than the distant island
- 65.** Ecologist interested in functional aspects of Ecosystem often use
- (A) Shannon Wiener index, Simpson index
 - (B) Species evenness
 - (C) Species richness
 - (D) Cluster analysis
- 66.** Which among the following is a buffer ?
- (A) Mixture of acid and base
 - (B) Mixture of weak acid and strong base
 - (C) Mixture of strong acid and weak base
 - (D) A weak acid and its conjugate base
- 67.** The functional genomics can be best studied with
- (A) PCR
 - (B) DNA microchips
 - (C) Dot blot
 - (D) ELISA plate reader
- 68.** What is the correlation coefficient value required for accepted positive correlation of calibration line ?
- (A) $R=1$
 - (B) $R \Rightarrow 0.95$
 - (C) $R=100$
 - (D) $R=0.01$



69. A type I survivorship curve is characteristic of the species with a rapid increase in mortality in old age. This type curve is
- (A) typical of many invertebrates that produce a large number of offspring
 - (B) typical of humans and other large mammals
 - (C) almost never found in nature
 - (D) typical of all species
70. Sampling error in a small population leads to
- (A) Genetic load
 - (B) Genetic drift
 - (C) Heterosis
 - (D) Homeostasis
71. "Evolution by random walk" refers to
- (A) Any of the neutral mutations at random not retained in the gene pool or removed from the gene pool
 - (B) Any of the neutral mutations at random are retained in the gene pool or removed from the gene pool
 - (C) All the neutral mutations at random retained in the gene pool or removed from the gene pool
 - (D) None of the neutral mutations at random retained in the gene pool or removed from the gene pool
72. Which of the following repeated sequence includes an open reading frame for reverse transcriptase ?
- (A) LINE
 - (B) SINE
 - (C) Segmental duplication
 - (D) DNA transposon
73. Choose the labeling technique in which DNA polymerase I is used to replace some of the nucleotides of a DNA sequence with their labeled analogues to create a tagged DNA sequence.
- (A) End-labeling
 - (B) Random priming
 - (C) Nick translation
 - (D) Labeling by probe
74. How many genes are coded by the yeast genome ?
- (A) ~ 12000
 - (B) ~6000
 - (C) ~20000
 - (D) ~4000
75. Among the following which habitat is not covered in project tiger.
- (A) Sivalik-Terial Conservation Unit
 - (B) North East Conservation Unit
 - (C) Western Ghats Conservation Unit
 - (D) Eastern Ghats Conservation Unit



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