

Previous Year Question Paper of

# SET - EXAM (KARNATAKA) LIFE SCIENCES - III

# Examination

2015

(Original Question Paper with Answer Key)



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Test Paper : <b>III</b>	
Test Subject : LIFE SCIENCE	Test Booklet Serial No. :
,	OMR Sheet No.:
Test Subject Code : K-2815	Roll No.
	(Figures as per admission card)
Name & Signatu	ire of Invigilator/s
Signature ·	
Name :	
Paper :	III
Time : 2 Hours 30 Minutes	LIFE SCIENCE  Maximum Marks : 150
<u></u>	
Number of Pages in this Booklet : 16	Number of Questions in this Booklet : 75
ಆಭ್ಯರ್ಥಿಗಳಿಗೆ ಸೂಚನೆಗಳು  1. ಈ ಪುಟದ ಮೇಲ್ತುದಿಯಲ್ಲಿ ಒದಗಿಸಿದ ಸ್ಥಳದಲ್ಲಿ ನಿಮ್ಮ ರೋಲ್ ನಂಬರನ್ನು ಬರೆಯಿರಿ.  2. ಈ ಪತ್ರಿಕೆಯು ಬಹು ಆಯ್ಕೆ ವಿಧದ ಎಪ್ಪತ್ತ್ರೆದು ಪ್ರಶ್ನೆಗಳನ್ನು ಒಳಗೊಂಡಿದೆ.  3. ಪರೀಕ್ಷೆಯ ಪ್ರಾರಂಭದಲ್ಲಿ ಪ್ರಶ್ನೆಪ್ರಸ್ತಿಕೆಯನ್ನು ನಿಮಗೆ ನೀಡಲಾಗುವುದು. ಮೊದಲ5 ನಿಮಿಷಗಳಲ್ಲಿ ನೀವು ಪ್ರಸ್ತಿಕೆಯನ್ನು ತೆರೆಯಲು ಮತ್ತು ಕೆಳಗಿನಂತೆ ಕೆಡ್ಡಾಯವಾಗಿ ಪರೀಕ್ಷಿಸಲು ಕೋರಲಾಗಿದೆ.  (i) ಪ್ರಶ್ನೆ ಪ್ರಸ್ತಿಕೆಗೆ ಪ್ರವೇಶಾವಕಾಶ ಪಡೆಯಲು, ಈ ಹೊದಿಕೆ ಪುಟದ ಅಂಚಿನ ಮೇಲಿರುವ ಪೇಪರ್ ಸೀಲನ್ನು ಹರಿಯಿರಿ. ಸ್ಟಿಕ್ಟರ್ ಸೀಲ್ ಇಲ್ಲದ ಅಥವಾ ತೆರೆದ ಪುಸ್ತಿಕೆಯನ್ನು ಸ್ವೀಕರಿಸಬೇಡಿ.  (ii) ಪುಸ್ತಿಕೆಯಲ್ಲಿನ ಪ್ರಶ್ನೆಗಳ ಸಂಖ್ಯೆ ಮತ್ತು ಪುಟಗಳ ಸಂಖ್ಯೆಯನ್ನು ಮುಖಪುಟದ ಮೇಲೆ ಮುದ್ರಿಸಿದ ಮಾಹಿತಿಯೊಂದಿಗೆ ತಾಳೆ ನೋಡಿರಿ. ಪುಟಗಳು/ಪ್ರಶ್ನೆಗಳು ಕಾಣೆಯಾದ, ಅಥವಾ ದ್ವಿಪ್ಪತಿ ಅಥವಾ ಅನುಕ್ರಮವಾಗಿಲ್ಲದ ಅಥವಾ ಇತರ ಯಾವುದೇ ವೃತ್ಯಾಸದ ದೋಷಪೂರಿತ ಪುಸ್ತಿಕೆಯನ್ನು ಕೂಡಲೆ5 ನಿಮಿಷದ ಅವಧಿ ಒಳಗೆ, ಸಂವೀಕ್ಷಕ್ಷರಿಂದ 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.	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) (D)
<ol> <li>ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಗಳನ್ನು, ಪತ್ರಿಕೆ III ಪುಸ್ತಿಕೆಯೊಳಗೆ ಕೊಟ್ಟಿರುವ OMR ಉತ್ತರ ಹಾಳೆಯಲ್ಲಿ ಮಾತ್ರವೇ ಸೂಚಿಸತಕ್ಕದ್ದು, OMR ಉತ್ತರ ಹಾಳೆಯಲ್ಲಿನ ಅಂಡಾಕೃತಿ ಹೊರತುಪಡಿಸಿ ಬೇರೆ ಯಾವುದೇ ಸ್ಥಳದಲ್ಲಿ ಗುರುತಿಸಿದರೆ, ಅದರ ಮೌಲ್ಯ ಮಾಪನ ಮಾಡಲಾಗುವುದಿಲ್ಲ.</li> <li>OMR ಉತ್ತರ ಹಾಳೆಯಲ್ಲಿ ಕೊಟ್ಟ ಸೂಚನೆಗಳನ್ನು ಜಾಗರೂಕತೆಯಿಂದ ಓದಿರಿ.</li> <li>ಎಲ್ಲಾ ಕರಡು ಕೆಲಸವನ್ನು ಪುಸ್ತಿಕೆಯ ಕೊನೆಯಲ್ಲಿ ಮಾಡತಕ್ಕದ್ದು.</li> </ol>	5 Your responses to the question of Paper III are to be indicated
8. ನಿಮ್ಮ ಗುರುತನ್ನು ಬಹಿರಂಗಪಡಿಸಬಹುದಾದ ನಿಮ್ಮ ಹೆಸರು ಅಥವಾ ಯಾವುದೇ ಚಿಹ್ನೆಯನ್ನು , ಸಂಗತವಾದ ಸ್ಥಳ ಹೊರತು ಪಡಿಸಿ, OMR ಉತ್ತರ ಹಾಳೆಯ ಯಾವುದೇ ಭಾಗದಲ್ಲಿ ಬರೆದರೆ, ನೀವು ಅನರ್ಹತೆಗೆ ಬಾಧ್ಯರಾಗಿರುತ್ತೀರಿ.	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
9. ಪರೀಕ್ಷೆಯು ಮುಗಿದನಂತರ, ಕಡ್ಡಾಯವಾಗಿ OMR ಉತ್ತರ ಹಾಳೆಯನ್ನು ಸಂವೀಕ್ಷಕರಿಗೆ ನೀವು ಹಿಂತಿರುಗಿಸಬೇಕು ಮತ್ತು ಪರೀಕ್ಷಾ ಕೊಠಡಿಯ ಹೊರಗೆ OMR ನ್ನು ನಿಮ್ಮೊಂದಿಗೆ ಕೊಂಡೊಯ್ಯಕೂಡದು.	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.
<ul> <li>10. ಪರೀಕ್ಷೆಯ ನಂತರ, ಪರೀಕ್ಷಾ ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಯನ್ನು ಮತ್ತು ನಕಲು OMR ಉತ್ತರ ಹಾಳೆಯನ್ನು ನಿಮ್ಕೊಂದಿಗೆ ತೆಗೆದುಕೊಂಡು ಹೋಗಬಹುದು.</li> </ul>	10. You can take away question booklet and carbon copy of OMR Answer Sheet soon after the examination.
11. ನೀಲಿ/ಕಪ್ಪುಬಾಲ್ಪಾಯಿಂಟ್ ಪೆನ್ ಮಾತ್ರವೇ ಉಪಯೋಗಿಸಿರಿ.	11. Use only Blue/Black Ball point pen.
12. ಕ್ಯಾಲ್ಕುಲೇಟರ್ ಅಥವಾ ಲಾಗ್ ಟೇಬಲ್ ಇತ್ಯಾದಿಯ ಉಪಯೋಗವನ್ನು ನಿಷೇಧಿಸಲಾಗಿದೆ.	12. Use of any calculator or log table etc., is prohibited.
, 13. ಸರಿ ಅಲ್ಲದ ಉತ್ತರಗಳಿಗೆ ಋಣ ಅಂಕ ಇರುವುದಿಲ್ಲ. ▶ 14. ಕನ್ನಡ ಮತ್ತು ಇಂಗ್ಲೀಷ್ ಆವೃತ್ತಿಗಳ ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಗಳಲ್ಲಿ ಯಾವುದೇ ರೀತಿಯ ವ್ಯತ್ಯಾಸಗಳು	<ul><li>13. There is no negative marks for incorrect answers.</li><li>14. In case of any discrepancy found in the Kannada</li></ul>



# 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 B (D) Mismatching **2.** \_\_\_\_\_ is a retroviral based transposon designed for mutagenesis in vertebrates. (A) Frog princess (B) LINES (C) SINES (D) Tn3 B 3. The number of chromosomes in a normal human sperm is (A) 24 (B) 22 (C) 46
- 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

A

- **5.** Cell cycle is controlled by
  - (A) Phosphatases
  - (B) Cyclins
  - (C) r-RNA genes
  - (D) Transferases

В

- **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

 $\mathbf{C}$ 

Paper III 2

D

(D) 23

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- **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'
- D
- **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

В

- **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

C

- 11. The inversion which includes centromere and marked by alter chromosome morphology is
  - (A) Paracentric
  - (B) Pericentric
  - (C) Holocentric
  - (D) Telocentric

В

- **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)  $\frac{1}{16}$

C

A

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Paper III

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13.	The surface of the body of an animal in	n
	phylum has large number of	of

minute openings.

- (A) Coelenterata
- (B) Annelida
- (C) Protozoa
- (D) Porifera

D

- **14.** The best method to determine the genotype of dominant parent is by crossing it with the hybrid
  - (A) F<sub>2</sub> cross
  - (B) Test cross
  - (C) Selfing
  - (D) Cross fertilisation B
- **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 C

**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) <u>Plasmodium vivax</u>

A

A

Paper III

(4)

D

#### **Total Number of Pages: 16 20.** In \_\_\_\_\_\_ technique data retrieval 23. Molecular karyotype means is slow, map positions for not more than (A) Pulse-field gel electrophoresis few markers will be obtained in a single (B) Polyacrylamide gel electrophoresis experiment. (C) Agarose gel electrophoresis (D) 2-D electrophoresis (A) SNP A (B) Radiation hybrid 24. Raphanobrassica is (C) FISH (A) Interspecific hybrid $\mathbf{C}$ (B) Intervarietal hybrid (D) STS (C) Intravarietal hybrid 21. RNA interference is used to (D) Inter-generic hybrid D (A) Interfere with specific transcription 25. The probes for DNA finger printing are factors (A) unknown single stranded labeled (B) Knockout the expression of a DNA specific gene (B) unknown double stranded labeled (C) Cause a mutation in specific gene DNA (D) Stimulates apoptosis (C) known single stranded labeled B DNA 22. The DNA microarray technology that (D) known double stranded unlabeled indicates, which genes are transcribed DNA $\mathbf{C}$ is called **26.** Which of the following bacteria is highly (A) DNA variation screening resistant to ionizing radiations? (B) Microarray comparative genomic (A) Staphylococcus hybridization (B) Deinococcus

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 $\mathbf{C}$ 

(C) Gene expression profiling

(D) Antisense RNA screening

B

(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

A

- **28.** Read the statement I & II and choose the correct answer:
  - Statement 1: A given hormone may bind to multiple receptors and a given receptor may bind multiple hormones.

**Statement II:** Hormone receptors donot 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

C

- 29. Beetles belong to the order
  - (A) Deptera
  - (B) Lepidoptera
  - (C) Hemiptera
  - (D) Coleoptera

D

#### **Total Number of Pages: 16**

- **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 <sup>14</sup>C. If this pyruvate underwent gluconeogenesis, which carbon of glucose will be labelled?
  - (A) 1
  - (B) 1 and 3
  - (C) 3
  - (D) All

В

C

- **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

B

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**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

D

- **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 B
- **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

В

- 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

A

- **38.** Polytene chromosomes in Drosophila are formed during
  - (A) Telophase
  - (B) Metaphase
  - (C) Prophase
  - (D) Interphase

D

Paper III

- **39.** The standard deviation is a measure of \_\_\_\_\_ of a frequency distribution.
  - (A) Central tendency
  - (B) Variability
  - (C) Similarity
  - (D) Normality

F

- **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

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- **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

D

- **43.** Which is the chromosome location of retinoblastoma gene (RB) in humans?
  - (A) 13q.14
  - (B) 9q.34
  - (C) 17p.13
  - (D) 17q.21

A

- **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

В

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D

- **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

B

- **46.** Read the following statements and choose the correct answer :
  - Statement 1 : 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

A

- **47.** In the development of vertebrates, which of the following gives rise to vertebrae?
  - (A) Myotome
  - (B) Dermatome
  - (C) Sclerotome
  - (D) Ectoderm

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- **48.** Which part of the brain is involved in spatial memory?
  - (A) Thalamus
  - (B) Pineal gland
  - (C) Hippocampus
  - (D) Cerebellum

C

- **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

D

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#### 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<sub>2</sub>O
  - (B) H<sub>2</sub>
  - (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

D

- **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

**A** 

- **55.** Which of the following bacteria divides in three planes?
  - (A) Streptococcus
  - (B) Staphylococcus
  - (C) Sarcia
  - (D) Rhizobium

B/C

Paper III

(1

#### **56.** Rhizophora mucronata is a

- (A) Mangrove plant
- (B) Terrestrial plant
- (C) Freshwater plant
- (D) Sea grass

A

- **57.** Following bacteria significantly contribute for nitrogen fixation in paddy fields in India.
  - (A) Anabaena
  - (B) Azotobacter
  - (C) Frankia
  - (D) Clostridium

A/B/C

- **58.** Birds of the following island provided clues to Darwin about speciation
  - (A) Hawaiian islands
  - (B) Andaman islands
  - (C) Galapogos islands
  - (D) Solomon islands

C

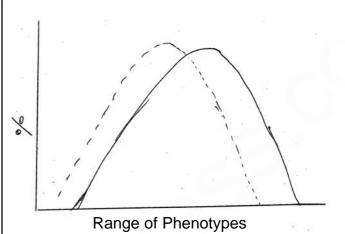
- **59.** Dinosaurs were densely populated during
  - (A) Cretaceous era
  - (B) Paleozoic era
  - (C) Mesozoic era
  - (D) Cenozoic era

A/C

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**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

D

- 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

A

Paper III

- **62.** The hydrolytic enzymes which occur in lysosome work most effectively under
  - (A) Alkaline pH

condition of

- (B) Acidic pH
- (C) Neutral pH
- (D) Salinity

В

- **63.** The first vaccine developed from animal cell culture was
  - (A) Hepatitis B vaccine
  - (B) Influenza vaccine
  - (C) Small pox vaccine
  - (D) Polio vaccine

 $\mathbf{D}$ 

- **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

**Total Number of Pages: 16** 

- 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

D

- 66. A non directed physico-chemical interaction between heavy metal ions and microbial surface is called
  - (A) Biotransformation
  - (B) Bioconversion
  - (C) Biosorption
  - (D) Biomining

C

- **67.** Energy and nutrients enter a community by way of
  - (A) Consumers
  - (B) Scavengers
  - (C) Detritivores
  - (D) Producers

D

Paper III

(12

B

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	C

- **69.** Vinegar is obtained from molasses with the help of
  - (A) Penicillin
  - (B) Acetobacter
  - (C) Yeast
  - (D) Aspergillus B/C/D
- **70.** The exponential phase of growth, in cell cultures is called
  - (A) Lag phase
  - (B) Log phase
  - (C) Plateau phase
  - (D) Mitotic phase B

Total Number of Pages : 16

- **71.** Clones are identified by hybridizing them with
  - (A) Probe
  - (B) Vector
  - (C) Antibody
  - (D) Virus

Λ

- **72.** Which of the following is tumor suppressor gene?
  - (A) SrC
  - (B) abl
  - (C) sis
  - (D) p53

 $\mathbf{D}$ 

- **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

В

- **74.** Inheritance of acquired characters was proposed by
  - (A) Lamarck
  - (B) Morgan
  - (C) Darwin

A

- (D) Weisman
- 75. Radiations can be detected through
  - (A) ELISA reader
  - (B) Spectrophotometer
  - (C) Geiger Muller counter
  - (D) Maldi-Tof

 $\mathbf{C}$ 

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