Dept. of Zoology
Vivekananda College
Tiruvedakam West
Date: **09.04.2019**

I M.Sc., Zoology

III Sessional Test
II Semester
Max.Marks: 50
Time: 2 Hour

Immunology – 31CT21

SECTION – A Multiple choice questions

Answer All Questions: 5**X1=5 Marks**

1. Graft rejection in mammals is mediated by (CO3)
   a) Antibodies b) Opsonins
   c) Secretions of ductless glands d) Lymphocytes
2. Auto immunity is caused by (CO3)
   a) Bacteria b) Virus
   c) T dependent antigens d) Self antigens
3. Tentative cells identify tumor cells with ____ on their surface. (CO3)
   a) CD34 b) CD8
   c) MHC class 2 d) CD4
4. In indirect ELISA, the polystyrene surface is first coated with (CO5)
   a) Antigen b) Antibody
   c) Stick solution d) Enzyme linked antibody
5. The maximum rate of precipitation occurs in (CO5)
   a) Zone of antigen excess b) Zone of equivalence
   c) Zone of antibody excess d) all the above

SECTION – B Very short answer

Answer any Five Questions: 5X2=10 Marks

6. Expand and define SCID. (CO3)
7. AIDS is not a disease. Justify it. (CO3)
8. What is autoimmunity? Cite examples. (CO3)
9. Mention the role of immunosuppressive drugs. (CO3)
10. What is VDRL test? (CO5)
11. Define Immunofluorescence. (CO5)
12. What is Immuno electron microscopy? (CO5)

SECTION – C Short answer

Answer any Three Questions 3X6=18 Marks

13. Give an account on organ specific autoimmune diseases with suitable illustrations. (CO3)
14. What are tumour antigens? Add note on immune response to tumour. (CO3)
15. Describe the Radial Immuno diffusion. (CO5)
16. Give a brief account on ELISA test. (CO5)
17. Discuss briefly the double Immuno diffusion. (CO5)

SECTION - D Long Answer

Answer any Two Questions: 2x10 = 20 marks

18. Critically analyze the specific role of HLA system in determining the relationship between the donor and recipient during organ transplantation.. (CO1)
19. Give a detailed account on the principle and applications of Immuno electrophoresis. (CO5)
20. Write an essay on Radio Immuno Assay of Insulin. (CO5)

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Dept. of Zoology
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I M.Sc., Zoology

III Sessional Test
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Time: 2 Hours

BIOSTATISTICS – 31CT22

SECTION – A Multiple choice questions

Answer All Questions: **5X1=5 Marks**

1. Vital statistics deals with such events of human life as CO5
   a. births only b. deaths only c. marriage d. All
2. The crude and standard rates are used in _____ rate CO5
   a. birth b. death c. fertility d. crude birth
3. Which one of the following is an important of vital statistics? CO5
   a. Government b. Demographers c. Researcher d. All
4. The population rates are calculated per _____ person CO5
   a. 1000 b. 500 c. 100 d. 10
5. Sampling errors are present only in CO5
   a. Sample survey b. Census survey c. Both a and b d. Bias

SECTION – B Very Short Answer

Answer any FIVE Questions: **5X2=10 Marks**

6. Comment on the significances of Student t test CO2
7. What is 2x2 contigency table? CO2
8. Comment on ANOVA CO4
9. What is binomial theorem? CO1
10. What is alternative hypothesis? CO2
11. What are the merits and demerits of sampling? CO2
12. Define life table CO5

SECTION – C Short Answer

Answer any THREE Questions: **3X5=15 Marks**

13. What are the methods available to estimate the population? CO5
14. Write about the applications of life table CO5
15. What are the uses of vital statistics? CO5
16. Describe briefly in normal distribution and its attributes CO1
17. What do you mean by kurtosis? State different kinds of kurtosis CO1

SECTION – D Long Answer

Answer any TWO Questions: **2X10=20 Marks**

18. Give a brief account on sources of collection of demographic data. CO5

19. Applications of fertilizers were tested for the yield of rice grown in 10 plots. Another seed of 10 plots of similar size and condition were taken as control. Test the effect of fertilizer. CO2

Plot No	1	2	3	4	5	6	7	8	9	10
Fertilizer applied	16	14	18	15	13	17	16	15	14	13
Fertilizer not applied	10	12	11	9	13	13	12	14	13	11

(Tabulated t value at 5% level is 2.10)

20. Explain the basic formulae used in vital statistics CO5

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Dept. of Zoology
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Date: **11.04.2019**

I M.Sc., Zoology

III Sessional Test
II Semester
Max.Marks: 50
Time: 2 Hour

Developmental Biology – 31CT23

SECTION – A Multiple choice questions

Answer All Questions: 5**X1=5 Marks**

1. The Chromatin diminution was first observed in (CO4)
   a) *Ascaris* b) *Parascaris*
   c) *Amoeba* d) *Plasmodium*
2. Erythropoietin is obtained from (CO4)
   a) Plasma b) Kidney
   c) Lungs d) Brain
3. The invertebrate groups is remarkable for high regenerative ability are the (CO4)
   a) Planarians b) Nemertean
   c) Annelids d) Echinoderms
4. The fertilized egg divides by the process of (CO2)
   a) Regeneration b) Oogenesis
   c) Cleavage d) Invagination
5. The human embryo is about one inch in length after ____ (CO2)
   a) 2 weeks b) 4 weeks
   c) 6 weeks d) 8 weeks

SECTION – B Very short answer

Answer any Five Questions: **5X2=10 Marks**

6. What is differentiation? (CO4)
7. Define stem cells. (CO4)
8. What is metamorphosis? (CO5)
9. Define regeneration. (CO5)
10. What do you mean by competence? (CO3)
11. What is Amphimixis? (CO2)
12. Define: Polysermy. (CO2)

SECTION – C Short answer

Answer any Three Questions **3X5=15 Marks**

13. Enumerate the characteristics of differentiation. (CO4)
14. Assess the role of cytoplasm in differentiation. (CO4)
15. Briefly discuss the regeneration in amphibian. (CO5)
16. Discuss the importance of gradient theory. (CO3)
17. What are the various factors involved in fertilization? (CO2)

SECTION - D Long Answer

Answer any Two Questions: **2x10 = 20 marks**

18. Describe the hormonal control of metamorphosis in frog. (CO5)
19. Write an essay on gene action and hormonal control in development. (CO4)
20. Highlight the importance of nuclear transplantation. (CO3)

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PG & Research Dept. of Zoology **I M.Sc., Zoology** III Sessional Test
Vivekananda College II Semester
Tiruvedakam West Max.Marks: 50
Date: 12.04.2019 Time: 2 Hour

Evolution–31EP21

SECTION – A MULTIPLE CHOICE QUESTIONS
Answer All Questions: 5X1=5 Marks

1. The cranial capacity of *Homo erectus* is …..CO4
a) Human b) Ape c) Intermediated traits d) All
2. The central yolk in the transmission of culture belongs not to genes but to …..CO4
a) Human symbol system b) Behavior c) Civilization d) Language
3. Cluster of same gene loci is called …..CO3
a. Gene mutation b. Gene regulation c. Gene family d. Gene deletion
4. ---------- is suggests that evolutionary difference between organisms arise from mutation.
a. Biological clock b. Ecological clock c. Molecular clock d. None of these …..CO3
5. One amino acid substitutions has occurred every 7million years, it was reported by….CO3
a. Linus Pauling b. Fitch and Langely c. Maxon and Wilson d. King and Jukes

SECTION – B VERY SHORT ANSWER
Answer any Five Questions: 5X2=10 Marks

6. Write down the Simpson's definition of higher taxa …..CO4
7. What is polyploidy? …..CO4
8. Define the term altruism. …..CO5
9. Define neutrality theory. …..CO3
10. Comment on DNA phylogeny? …..CO3
11..What is gene mutation? …..CO3
12. What are the advantages of using proteins and nucleic acid determining phylogenies?CO3

SECTION – C SHORT ANSWER
Answer any Three Questions 3X5=15 Marks

13.Explain the modes of origin of higher taxa. ….CO4
14. Give a brief account on rates of evolution. ….CO4
15. Write a short account on cultural evolution ….CO5
16.Give a brief account on electrophoretic analysis and its significance on evolutionCO3
17. Write a short note on the patterns of speciation. ….CO3

SECTION - D LONG ANSWER
Answer any Two Questions: 2x10=20 Marks

18.Write an essay on biological evolution of man . …..CO5
19.What do you understand by molecular evolution? Describe molecular evolution of Hemoglobin in vertebrates. …..CO3
20. Write short notes on: …..CO3
i. Molecular clockevolution
ii.Test tube evolution

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PG & Research Dept. of Zoology **II M.Sc., Zoology** III Sessional Test
Vivekananda College IV Semester
Tiruvedakam West Max.Marks: 50
Date: 09.04.2019 Time: 2 Hour

Applied Biotechnology–31CT41

SECTION – A MULTIPLE CHOICE QUESTIONS 5X1=5 Marks

Answer All Questions:

1. ____ is the permanent solution for genetic disease
 a) Gene therapy b) SCID c) Dystrophin d) All the above
2. YACs can carry large sized genes and are effectively used in___
 a) Transfection b) Trans-desalination c) Transduction d) Trangenesis
3. Which compound is used to penetration of the sperm into the egg in artificial medium?
 a) Penicillamine b) FSH c) Prostaglandin F2a d) FACS
4. The size of nanoparticles is between _____ nm.
a. 100 to 1000 b. 0.1 to 10 c. 1 to 100 d. 0.01 to 1
5. The most important property of nanomaterials is

a. Force b. Friction c. Pressure d. Temperature

SECTION – B VERY SHORT ANSWER 5X2=10 Marks

Answer any Five Questions:

6. Drug targeting
7. YAC.
8. Trangenesis
9. Virulence factors
10. Comment on biofuels.
11. Define biotransformation.
12. List out most commonly used microorganisms for bioleaching.

SECTION – C SHORT ANSWER 3X5=15 Marks

Answer any Three Questions

13. Comment on Biomaterials and their application.
14. How are various factors used as drug targets?
15. Define the characteristic features of Nanoparticles.
16. Brief an account on strategies of synthesis of Nanoparticles.
17. What is bioleaching? Brief the mechanisms and methods of bioleaching

SECTION - D LONG ANSWER 2x10=20 Marks

Answer any Two Questions:

18. Give account on embryonic stem cell engineering.
19. Write an essay on solid waste management.
20. Write a detailed account on applications of Nanoparticles.

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Dept. of Zoology
Vivekananda College
Tiruvedakam West
Date: 10.04.2019

II M.Sc., Zoology

III Sessional Test
IV Semester
Max.Marks: 50
Time: 2 Hours

Environmental Biology – 31CT42

SECTION – A Multiple choice questions

Answer All Questions: **5X1=5 Marks**

1. _____ is conduced almost in all countries once in 10 years.

a. Population census b. Registration method c. Analytical method d. All the above

2. _____ deals with the various biological sciences concerned with the study of travel in the space craft and the space environment.

a. Population ecology b. Urban ecology c. Space ecology d. Community ecology

3. _____ is used for obtaining data to prepare inventory of complex natural ecosystems and their regular monitoring.

a. Geographic information system b. Satellite c. Scanner d. Remote sensing

4. "World Environment day" is observed on

a. June 5 b. July 10 c. December 8 d. March 20

5. Every municipal authority are responsible for collection, segregation, storage, transportation, processing and disposal of municipal solid under the law

a. Indian law b. Municipal Solid Wastes Rules, 2000 c. biosphere law d. Civil law

SECTION – B Very Short Answer

Answer any FIVE Questions: **5X2=10 Marks**

6. Comment on Satellite town
7. Define population control
8. UNESCO
9. Define population explosion
10. Comment on slums
11. What is the goal of environmental education?
12. Write short notes on standard drinking water.

SECTION – C Short Answer

Answer any THREE Questions: **3X5=15 Marks**

13. Comment on Man and Biosphere programme.
14. Trace the impact of Urbanization on the natural ecosystems.
15. Give a brief account on the life supporting system of Space.
16. Enumerate various environmental laws of India.
17. Discuss in detail the principle, objectives and effect on environmental education.

SECTION – D Long Answer

Answer any TWO Questions: **2X10=20 Marks**

18. Environment can be preserved only through education and awareness-Deliberate.
19. Describe in detail the various natural calamities.
20. Write an essay on various role of pollution control board in India and Tamilnadu.

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Dept. of Zoology
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II M.Sc., Zoology

III Sessional Test
IV Semester
Max.Marks: 50
Time: 2 Hours

Biofarming Technology – 31EP41

SECTION – A Multiple choice questions

Answer All Questions: **5X1=5 Marks**

1. Which of the following is not indigenous breeds of fowl?
   a. Aseel b. Chagus c. Chittagong d. Brahma
2. Which of the following is Asiatic class of fowl?
   a. New Hampshire b. Polymouth Rock c. 5-Langson d. Aseel
3. The disease of hen Spirochaetosis is caused by
   a. Tick b. Mite c. Virus d. Bacteria
4. Which one of the following is exotic breeds in cow?
   a. Jersey b. Sahiwal c. redsindhi d. greysindhi
5. The deep freezing of semen is stored at _____ ^{o}C
   a. -50 b. -70 c. -80 d. -196

SECTION – B Very Short Answer

Answer any FIVE Questions: **5X2=10 Marks**

6. Mention about the few characteristic of Wyandotte.
7. What is brooding?
8. Comment on Cross-Breeding.
9. What is Ranikhet disease?
10. Define feeders
11. What is artificial insemination?
12. Comment on Rinderpest

SECTION – C Short Answer

Answer any THREE Questions: **3X5=15 Marks**

13. Describe briefly the characteristics of Fowl-House.
14. Write a brief account on Rhode Island Red breed of fowl.
15. Give a short note on Mediterranean Classes of fowl.
16. What are the equipment's and records required for maintaining dairy farm
17. Give an account on common dairy products

SECTION – D Long Answer

Answer any TWO Questions: **2X10=20 Marks**

18. Write an account of diseases and their control in poultry.
19. Describe any five Milch breeds of India
20. Write an essay on Artificial insemination