

ZOO 601

Reg. No.

CREDIT BASED SIXTH SEMESTER B.Sc. DEGREE EXAMINATION – APRIL 2013

ZOOLOGY

GENETICS, EVOLUTION AND PALEONTOLOGY

Duration: 3 hours

Max marks: 80

Note: Answer any **TEN** Questions from Part-A

Answer **SIX** questions from Part-B choosing any two questions from each unit.

PART A

I. Answer any **TEN** of the following:

2x10=20

1. Give two reasons for choosing *Drosophila* as a suitable material for genetic experiments.
2. Define epistasis. Name the two types.
3. What is polygenic inheritance?
4. Mention any two significance of crossing over.
5. What are holandric genes? Give examples.
6. Name the genes present on Lac-operon.
7. Define Eugenics. Name two types.
8. What is amniocentesis?
9. Define genetic drift.
10. Define sympatric speciation.
11. What is meant by struggle for existence?

12. Name the different theories of organic evolution.

PART-B

UNIT-I

- II. a) What is a dihybrid cross? Explain it in an animal by giving Punnet's checker board with F₂ phenotypic ratio. 07
b) What are lethal genes? Give an example. 03
- III. a) What is interaction of genes? Explain the phenomenon with reference to comb pattern in fowls. 07
b) What is an agglutination test? Explain it. 03
- IV. a) Write short note on Erythroblastosis factalis. 05
b) Explain complete linkage in Drosophila. 05

UNIT-II

- V. a) Write an essay on inborn errors of metabolism with reference to phenyl alanine metabolism. 07
b) Write short notes on colourblindness in man. 03
- VI. a) Explain the molecular basis of mutation. 07
b) Write short notes on Down's Syndrome. 03
- VII. a) Write short notes on sex determination in Bonellia. 05
b) Explain nature and nurture with suitable example. 05

UNIT-III

- VIII. a) Give an account of evidences of organic evolution from comparative morphology and anatomy. 07
b) List the characters of modern man. 03
- IX. a) Give an account of the fossil history of Archaeopteryn. 07
b) Name the two orders of dinosaurs with example for each. 03
- X. a) Write explanatory notes on use and disuse. 05

b) Write notes on Microevolution.

05

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Max marks: 80

Note: Answer any **TEN** Questions from Part-A

Answer **SIX** questions from Part-B choosing any two questions from each unit.

PART A

I. Answer any **TEN** of the following:

2x10=20

13. State the law of independent assortment.
14. Define hybrid with an example.
15. What is erythroblastosis foetalis?
16. What are gynandromorphs?
17. What is a Klinefelter's syndrome?
18. Define Recon.
19. What is chorionic villus sampling?
20. Define Eugenics. Name the two types.
21. What is organic evolution?
22. What are analogous organs?
23. Define Genetic Drift
24. What is allopatric speciation?

PART-B

UNIT-I

- II. a) Explain the law of segregation with a suitable example. 07
b) Write short note on Barr bodies. 03
- III. a) Give an account of the mechanism of crossing over.. 07
c) What are lethal genes? Give an example. 03
- IV. a) What is dominant epistasis? Explain it with reference to coat color in dogs. 05
b) Give the characteristics of multiple alleles. 05

UNIT-II

- V. a) Write an essay on lac-operon concept. 07
b) What is haemophilia? What are its characteristics? 03
- VI. a) Write an essay on nature and nurture with suitable examples. 07
b) Write notes of Thalassemia. 03
- VII. a) Write a note on human twins. 05
c) Explain molecular basis of mutation by tautomerization. 05

UNIT-III

- VIII. a) What is Lamarckism? Explain the postulates with suitable examples. 07
c) Write short note on Cro-Magnon man. 03
- IX. a) Give an account of evidences of organic evolution from comparative Physiology & Biochemistry. 07
b) Mention the reptilian characters of Archaeopteryx. 03
- X. a) Write explanatory notes of Microevolution. 05
b) Write short note on: (1) Brontosaurus (2) Hyracotherium. 05

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CREDIT BASED SIXTH SEMESTER B.Sc. DEGREE EXAMINATION APRIL 2015

ZOOLOGY - VII

Genetics, Evolution and Palaeontology

Duration: 3 Hours

Max Marks: 80

Note: i) Answer any TEN questions from Part A

ii) Answer SIX questions from Part B choosing any TWO questions from each unit

PART A

I. Answer any TEN of the following:

10×2=20

- a) Define heterozygote with an example.
- b) Name any two lethal traits in man.
- c) Define complementary genes.
- d) What is incomplete linkage?
- e) Give the sex index of super males and super females in *Drosophila*.
- f) Write two characteristics of Klinefelter's syndrome.
- g) Define recon.
- h) What is amniocentesis?
- i) What is meant by struggle for existence?
- j) Write short note on connecting link.
- k) Define allopatric speciation.
- l) List the significant trends in the evolution of horse.

PART-B

Answer any TWO complete questions from each unit:

UNIT-I

- II. a) Explain the law of Independent Assortment with a suitable example. 07
- b) What is polygenic inheritance? Give an example. 03
- III. a) What is interaction of genes? Explain the phenomenon with reference to comb pattern in fowls. 07
- d) Explain the differences between test cross and a back cross. 03
- IV. a) Explain the theories of linkage. 05
- b) Define Rh factor. Explain its genetics in human. 05

UNIT-II

- V. a) Explain sex-linked inheritance with reference to haemophilia in man. 07
- b) Write short notes on Thalassemia. 03
- VI. a) Explain molecular basis of mutation. 07
- b) Write short note on norm of reaction. 03
- VII. a) Write short note on genetic counselling. 05
- d) Write short notes on effects of hormone on sex determination with an example. 05

UNIT-III

- VIII.** a) Give an account of evidences of organic evolution from comparative morphology and anatomy. **07**
d) Write short note on Lamarckism. **03**
- IX.** a) Give an account of synthetic theory of evolution. **07**
b) Write a brief note on Tyrannosaurus. **03**
- X.** a) Write explanatory note on cromagnon man. **05**
b) Explain Hardy-Weinberg law. **05**

CREDIT BASED SIXTH SEMESTER B.Sc. DEGREE EXAMINATION APRIL 2016

ZOOLOGY**GENETICS, EVOLUTION AND PALAENTOLOGY**

Duration: 3 hours

Max marks: 80

Note: Answer any **TEN** Questions from Part-AAnswer **SIX** questions from Part-B choosing any two questions from each unit.**PART A****I. Answer any TEN of the following: 10x2=20**

1. Define Heterozygote with an example.
2. What is dominant epistasis.
3. What is polygenic inheritance?
4. Define complete linkage.
5. What is a Free martin.
6. Define Recon.
7. What are phenocopies.
8. What is amniocentesis.
9. Define genetic drift.
10. What are analogous organs?
11. Define sympatric speciation.
12. Write a brief note on Tyrannosaurs.

PART-B**UNIT-I**

- II. a) Explain the law of Independent Assortment with a suitable animal example. 07
 b) Write a short note on Lethal genes. 03
- III. a) Give an account of the mechanism of crossing over. 07
 b) What is Pleiotropism? Give an example. 03
- IV. a) What are supplementary genes? Explain it with an example.. 05
 b) Define Rh factor. Explain its genetics. 05

UNIT-II

- V. a) Explain Sex-linked inheritance with reference to haemophilia in man. 07
 b) What is negative Eugenics? 03

- VI. a) Write an essay on nature and nurture with a suitable example. 07
b) Write a note on "Sex index". 03
- VII. a) Write short notes on i) Alkaptonuria ii) Albinism. 05
b) Explain chromosomal type of sex determination in heterogametic males with examples. 05

UNIT-III

- VIII. a) Give an account of evidences of organic evolution from comparative physiology and biochemistry. 07
b) Write a short note on micro-evolution. 03
- IX. a) Explain the postulates of Lamarkism with suitable examples. 07
b) Write short note on Eohippus? 03
- X. a) Write explanatory note on Australopithecus. 05
b) Explain natural selection with an example. 05
