

**Govt. M.H. College of Home Science & Science for women, Autonomous  
Jabalpur M.P.**

**Code No. OBS/201/Z/21**

**M.Sc. II Semester Open Book Main Examination July 2021**

**Subject : - Zoology**

**Paper-I : General and Comparative Animal Physiology & Endocrinology of**

**Max. Marks : 35**

**Min. Marks : 12**

**Note : Attempt all questions in about 250 to 300 words.**

**All questions carry equal marks.**

- Q.1 Describe transportation of carbon dioxide by blood.**
- Q.2 Describe the Osmoregulation in different animal groups.**
- Q.3 Explain the Photoreception in Mammals.**
- Q.4 Write an essay on Bioluminescence.**
- Q.5 Explain phylogeny and antogeny of thyroid gland.**

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**Subject : - Zoology**

**Paper-II : Population Ecology & Environmental Physiology**

**Max. Marks : 35**

**Min. Marks : 12**

**Note : Attempt all questions in about 250 to 300 words.**

**All questions carry equal marks.**

- Q.1 Describe population growth with special reference to stochastic and time log model.**
- Q.2 Describe ecophysiological adaptations of fresh water environment.**
- Q.3 Explain limiting factors.**
- Q.4 Describe biohazards and their harmful effects on human health.**
- Q.5 Explain Physiological mechanism of regulation of the body temperature in Endothermic.**

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**Code No. OBS/203/Z/21**

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**Subject : - Zoology**

**Paper-III : Tools and Techniques of Biology**

**Max. Marks : 35**

**Min. Marks : 12**

**Note : Attempt all questions in about 250 to 300 words.**

**All questions carry equal marks.**

- Q.1    What do you understand by sterilization/ Give the various methods of sterilization.**
- Q.2    Describe principles, types and applications of PAGE and Agarose Gel electrophoresis.**
- Q.3    Give an account of Biosensors.**
- Q.4    Explain different types of culture media.**
- Q.5    Explain PCR and its application.**

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**Subject : - Zoology**

**Paper-IV : Molecular Cell biology and Genetics**

**Max. Marks : 35**

**Min. Marks : 12**

**Note : Attempt all questions in about 250 to 300 words.  
All questions carry equal marks.**

- Q.1 Describe the molecular structure of Plasma Membrane and mention its functional consequences.**
- Q.2 What are intra cellular signaling molecules? Describe cyclic AMP.**
- Q.3 Describe  $Ca^{++}$  dependent Homophilic cell to cell adhesion.**
- Q.4 What is human Genome Project? Explain its purpose and implication.**
- Q.5 Describe Transgenic animals and their applications.**

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**M.Sc. II Semester Practical Sessional Examination July 2021**

**Subject : - Zoology**

**Practical - I**

**Max. Marks : 10**

**Note : All questions are compulsory.  
Each question carries one mark.**

- Q.1** Comment upon the structure of Spectrophotometer and mention its application along with Principle.
- Q.2** Describe process of Block making for the preparation of permanent slide by the Process of Microtomy.
- Q.3** Briefly describe-  
(a) Principle of Paper chromatography.  
(b) Describe Phenomenon of colorblindness.
- Q.4** A color blind woman is married to a normal man. Their children will have this character of Not? Explain.

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+		↓		
		?		

- Q.5** Write Hardy Weinberg law of population Genetics and solve the following problem according to this law observation-

Black Eyed Persons	=	104
Browned Eyed Persons	=	81
Blue Eyed Persons	=	15

**Calculate the frequency of dominant and recessive allele.**

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**M.Sc. II Semester Practical Sessional Examination July 2021**

**Subject : - Zoology**

**Practical - II**

**Max. Marks : 10**

**Note : All questions are compulsory.  
Each question carries one mark.**

- Q.1 Write the method of W.B.C. count through Hemolytometer.**
- Q.2 Comment upon histology of Thyroid and pituitary gland.**
- Q.3 Write a note on desert Adaptation.**
- Q.4 Explain the life span of Tribolium with the help of logistic growth curve.**
- Q.5 Write the procedure for Ammonia test.**

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