Model Paper Quaid-i-Azam University  
PAPER ZOOLOGY A  
Session 2013-2014  

NAME---------------------------------  ROLL NO------------------------  
ZOOLOGY PAPER –A  B.Sc. –PART-II  

Time: 3 Hours  Max. Marks: 26  

NOTE: Cutting and over writing is not allowed in objective part. In Part –I all questions are compulsory. Attempt three question from Part-II and two from Part-III.  

Q NO.1: Correct the statement. Mark tick against the correct ones. (0.25 x 8 =2)  

<table>
<thead>
<tr>
<th>Sr. #</th>
<th>Statement</th>
<th>True/False</th>
<th>Correct statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Oogenesis begins in unspecialized cells called oocyte.</td>
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<td>2</td>
<td>A human disease, called Cri-du-chat, results from a loss of part of chromosome 15.</td>
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<td>3</td>
<td>In recombinant DNA techniques, ligase is used to cut DNA strands prior to inserting a piece of DNA into a plasmid.</td>
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<td>4</td>
<td>A few animals like Ascaris and some flatworms have more than two sets of chromosomes. This condition is referred to as polyploidy</td>
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<td>5</td>
<td>Co-dominance is an interaction between two alleles in which both alleles are expressed in heterozygote.</td>
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<td>6</td>
<td>During Permian period all of earth’s landmasses united into a single continent called tectonic plate.</td>
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<td>7</td>
<td>Punctuated equilibrium is a model of evolution that depicts change as occurring gradually, over millions of years.</td>
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<tr>
<td>8</td>
<td>Altruism is the application of human characteristics to anything not human.</td>
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Q NO 2: Choose the best choice for the statement from the multiple choices given below: (0.25 X 8 =2)  

1 A geneticist crossed two fruit flies. Both were heterozygous for vestigial wings. Which of the following results should be expected for this cross?  
   a. 1/4 wild and 3/4 vestigial  
   b. 1/2 wild and 1/2 vestigial  
   c. 3/4 wild and 1/4 vestigial  
   d. all wild
4: A DNA nucleotide consists of all of the following EXCEPT _______.
   a. a base.    b. ribose.    c. deoxyribose.    d. phosphate.

5: After a bottleneck event has occurred _______.
   a. the genetic diversity of a population is greater
   b. the genetic diversity of a population is decreased
   c. the size of the population always increases
   d. the size of the population always decreases

6: The study of genetic events that occur in gene pools is called _______.
   a. evolutionary genetics     b. population genetics
   c. gene pool biology   d. allopatries

7: Causation in animal behavior that occurs on an evolutionary time scale is a/an _______ cause.
   a. ultimate     b. proximate     c. ethological     d. anthropomorphic

8: Hormones that regulate developmental aspects of behavior, for example testosterone causing the onset of male like behavior at sexual maturity, regulate _______.
   a. developmental effects     b. organizational effects
   c. activational effects   d. habituation effects

Q NO.3 Fill in the blank by appropriate word. (0.25 X 8=2)
1: During prophase I of meiosis, homologous chromosomes line up side-by-side in a process called _________.

2: The discovery that genes occur on chromosomes was made by _______.

3: A ___________________________ that results in the movement of an arm of human chromosome 22 to chromosome 9 is the first chromosomal abnormality associated with a form of cancer.

4: The _______________ of molecular genetics describes the relationship among the steps from DNA to production of a protein.

5: When an animal cell receives a foreign gene, and then an individual develops from the engineered cell, the resulting organism is termed _____________.

6: Natural selection that narrows the phenotypic range by selecting against phenotypic extremes is called _______.

7: When a geographical barrier divides members of a population, _______ speciation may occur.

8: The study of animal behavior that focuses on evolution and the natural environment is _______. 
Note: Give answer to any three of the following questions.

Q.4. Differentiate between the following. 1x.5=2
   i) Multiple Alleles and Polygene
   ii) Sex linked traits and sex influenced traits
   iii) Euploidy and Aneupolidy

Q.5. Give answers to the following. 1x2=2
   a) What is 2\textsuperscript{nd} law of Mendel? Explain it.
   b) List the steps involved in translation with brief description.

Q.6. Give brief answer of the following. 0.5+0.5+1=2
   i) What is complementary DNA?
   ii) What is Inversion? How it different from translocation.
   iii) List the sex determination methods in animals.

Part – III (2 X7=14)

Note: Give detailed answer to any two of the following questions.

Q. 7.Write detail notes on the followings. (3+4=7)
   a) Genetic Code   b) Gene Insertion.

Q. 8 Write detail of the followings
   i) DNA Replication   ii) Salient feature of Darwin evolution (3+4)

Q.9. Describe the learning behavior in detail. 7