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B.V.Sc. & A.H. (Part – I) Examination – 2016
of the Five-Year Degree Course

ANIMAL GENETICS AND BREEDING PAPER-I

To be filled by the candidate:

Candidate's Roll Number:

In figure .....

In words .....

Candidate's Enrolment Number: .....

Day and date of examination: .....

Please see for general instructions overleaf.

Signatures of invigilators verifying the details filled by the candidate

Signature of invigilator 1: ..... 2: .....

Candidate should not write anything below this line

Marks to be filled by the examiner:

Section A		Section B	
Q. No.	Marks	Q. No.	Marks
1.		6.	
2.		7.	
3.		8.	
4.		9.	
5.		10.	
Total		Total	

Total Marks obtained:

In figures: ..... In words: .....

Signature of examiner: .....

Please write Roll No. above this line

INSTRUCTIONS TO THE CANDIDATES

1. The invigilator and the members of the Flying Squad are empowered to take search of the examinees during the examinations.
2. Candidate should read the question paper and the instructions carefully before they begin to write answers.
3. The candidate will not be allowed to leave the examination hall before one hour form the end of the examination time.
4. Write on the cover page all the required entries correctly and get the signature of the invigilators.
5. Write legibly in the space provided for answer of each questions/sub-questions according to instruction given in the question paper booklet (question paper).
6. Do not write your name on any part of the question paper / answer booklet.
7. Do not leave examination hall without handing over question paper / answer booklet to the invigilator incharge.
8. No leaves should be torn out of the question paper / answer booklet.
9. Candidate attempting to use unfair means or talking to one another will be dealt with severely as per unfair means rules.
10. No written paper or book notes etc. should be brought to examination hall.
11. Total number of pages of question paper / answer booklet be checked before writing.
12. Candidate should not bring in any article other than pens and admit card. Use of Mobiles, calculators on any other electronic device in the examination hall is strictly prohibited.

SPACE FOR ROUGH WORK

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B.V.Sc. & A.H. (Part – I) Examination – 2016
of the Five-Year Degree Course

ANIMAL GENETICS AND BREEDING PAPER-I

Time: Three Hours **Maximum Marks: 60**

Section A: Bio-Statistics and Computer Application: AGB-111 Marks 30
Section B: Principles of Animal Genetics and Population Genetics: AGB-121 Marks 30

Instructions:

1) Attempt all questions
2) Answer of all questions is to be written in the space provided along with the question in question-booklet.
3) Overwriting is not allowed in the objective type question.

SECTION – A

Bio-Statistics and Computer Application: AGB-111 **Maximum Marks 30**

Q.1 Fill in the blanks. **(9x0.5 = 4.5)**

i) An arrangement of data into rows and columns is known as _____.

ii) The difference between the upper and lower limit of class is called _____.

iii) The probability of a sure event is _____.

iv) The technique of ANOVA was developed by _____.

v) The total area under normal distribution curve is _____.

vi) If 50 animals are assigned 5 different rations at random, the choice of experimental design is _____.

vii) The hypothesis of qualitative information can be tested by _____ test.

viii) _____ is a percentage ratio of standard deviation to the arithmetic mean.

ix) In this modern age, _____ generation of computer is being used.

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Q.2 Choose the most suitable answer and write the number of the correct answer 1 or 2 or 3 or 4 in the space given against each sub question: (9x0.5 = 4.5)

i) If each and every unit of population has equal chance of being included in the sampling, it is known as: ( )
   1. Restricted sampling
   2. Purposive sampling
   3. Simple random sampling
   4. Stratified sampling

ii) _____ is one dimensional diagram: ( )
   1. Bar diagram
   2. Pie diagram
   3. Cylinder
   4. Histogram

iii) Probability of drawing a spade queen from a well shuffled pack of cards is: ( )
   1. 1/13
   2. 1/52
   3. 4/13
   4. 1/4

iv) In the case of one-way classification with N observations and t treatments, the error degrees of freedom is: ( )
   1. N - 1
   2. t - 1
   3. N - t
   4. Nt - 1

v) Sum of the deviations about mean is: ( )
   1. Zero
   2. Minimum
   3. Maximum
   4. One

vi) For a positively skewed distribution, the correct inequality is: ( )
   1. Mode < median
   2. Mean > median
   3. Mean < mode
   4. None of the above

vii) Rejection of hypothesis when it is true: ( )
   1. Type I error
   2. Type II error
   3. Type III error
   4. None of the above

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viii) RAM is used as a short memory because: ( )

1. It is volatile
2. It is expensive
3. It has small capacity
4. It is programmable

ix) Mode of the normal distribution is: ( )

1. μ
2. σ
3. $1 / \pi$
4. 0

Q.3 Attempt any nine out of the following twelve questions. Answer of each question should be in 2 to 3 lines. **(9x1= 9)**

i) Sample:

---

ii) Continuous variable:

---

iii) Frequency:

---

iv) Histogram:

---

v) Standard error:

vi) Mutually exclusive event:

vii) Null hypothesis:

viii) Computer:

ix) Kurtosis:

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x) Mouse:

xi) Local control:

xii) Harmonic mean:

Q.4 Attempt any <u>three</u> out of the following four questions. Answer of each question should be in 5 to 8 lines. **(3x2 = 6)**

i) Properties of normal distribution

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ii) Input devices:

iii) Applications of Z test:

iv) Advantages of randomized block design:

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Q.5 Answer the following question in 1-2 pages (attempt any one). **(1x6 = 6)**

i) Enlist different measures of dispersion. Describe Standard Deviation and CV % in detail.

ii) Describe principles of experimentation in detail.

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Q. No. .....

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SECTION – B

Principles of Animal Genetics and Population Genetics: AGB-121

Maximum Marks 30

Q.6 Fill in the blanks. **(9x0.5 = 4.5)**

i) The branch of genetics that is concerned with the study of the structure and function of the cell, especially chromosome is known as _____.

ii) Sex which produces only one type of gametes (identical) with regard to sex chromosomes is _____.

iii) Functional parts of the genes are called as _____.

iv) Scientist who coined the term 'Genetics' _____.

v) Holandric inheritance is due to genes located on _____ chromosome.

vi) Traits influenced by more than one gene are called _____ traits.

vii) Normal diploid number of chromosome in goat is _____.

viii) A syndrome caused by Trisomy 21 in human is known as _____.

ix) The type of inversion including centromere is _____.

Q.7 Choose the most suitable answer and write the number of the correct answer 1 or 2 or 3 or 4 in the space given against each sub question: **(9x0.5 = 4.5)**

i) If the recombination frequency is between zero and 0.5, then it is: ( )
   1. Complete linkage
   2. Incomplete linkage
   3. No linkage
   4. None of above

ii) Oraganelle of protein synthesis in the cytoplasm of a eukaryotic cell: ( )
   1. Golgi apparatus
   2. Mitochondria
   3. Ribosome
   4. Lysosome

iii) In which phase of cell cycle does replication of DNA take place? ( )
   1. Interphase
   2. Prophase
   3. Metaphase
   4. G1 phase

iv) Sex determination method in drosophila is: ( )
1. ZO method
2. XY method
3. ZW method
4. None of the above

v) A change of gene due to damage or being copied incorrectly is called: ( )
1. Evolution
2. Meiosis
3. Segregation
4. Mutation

vi) Crossing over occurs between: ( )
1. Sex chromosomes
2. Autosomes
3. Sister chromatids of homologous chromosomes
4. Non-sister chromatids of homologous chromosomes

vii) The most fundamental feature of prophase I is: ( )
1. Pairing of homologous chromosomes
2. Pairing of non homologous chromosomes
3. Crossing over
4. Appearance of nuclear membrane

viii) The value which can be computed as the regression of future performance on present performance is called: ( )
1. Realized heritability
2. Average effect of a gene
3. Repeatability
4. Breeding value

ix) A population cannot be in Hardy – Weinberg equilibrium if it is: ( )
1. Open
2. Large
3. Non mutating
4. All of the above

Q.8 Attempt any nine out of the following twelve questions. Answer of each question should be in 2 to 3 lines. **(9x1= 9)**

i) Dominance:

---

ii) Gynendroporph:

iii) Trisomy:

iv) Hardy – Weinberg Law:

v) Test cross:

vi) Heritability:

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vii) Genotypic frequency:

viii) Sex linked genes:

ix) Chromosome:

x) Linkage:

xi) Mitosis:

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xii) Average effect:

Q.9 Attempt any <u>three</u> out of the following four questions. Answer of each question should be in 5 to 8 lines. (3x2 = 6)

i) Forces changing gene frequency:

---

ii) Mutagenesis:

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iii) Multiple alleles:

iv) Sex influenced traits:

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Q.10 Answer the following question in 1-2 pages (attempt any one). (1x6 = 6)

i) What is heritability? Discuss various methods used for estimation of heritability.

ii) What is chromosomal abnormality? Explain structural chromosomal abnormalities with suitable examples.

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Q. No. .....

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