B.V.Sc. & A.H. (Second Professional) Examination - 2025

Animal Genetics and Breeding Paper –I

(MSVE 2016)

Time: Three Hours **Maximum Marks: 100**
Weightage: 20

Unit-1 (Biostatistics and Computer Application)
Unit-2 (Principles of Animal and Population Genetics)

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.

Q.1 Fill in the blanks. **(20x0.5 = 10)**

1.1 When change in relative size of component are to be displayed, _____ chart is used.

1.2 In CRD, _____- way ANOVA is used.

1.3 In mitosis, at the end of _____phase the nuclear formation of membrane completes.

1.4 For Normal Distribution, Second Moment is same as _____.

1.5 _____ tests are also known as distribution-free tests.

1.6 _____ is largest computer Network.

1.7 Crossing over takes place between non-sisterchromatids of _____.

1.8 In poultry female are _____and male are _____.

1.9 The probability of rejecting null hypothesis is called _____.

1.10 Data obtained from newspaper is _____ type of data.

1.11 _____ is Father of Statistics.

1.12 When the environmental deviation is taken as zero, the mean phenotypic value is same as mean _____.

1.13 Repeatability is the higher limit of_____.

1.14 When the gene frequency reaches ____ it is said to be lost.

1.15 In a positively skewed distribution, the tail lies to _____.

1.16 _____ was discovered as limiting form of Binomial distribution.

1.17 _____ is type of correlation for the data which don't show normal distribution.

1.18 Y Linked genes also called as _____.

1.19 Colour vision charts were designed by_____.

1.20 The value of an individual determined by mean value of its progeny is called _____of that individual.

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: (20x0.5 = 10)

2.1 The range of Chi-square test statistic is _____ ( )

1. 0 to 1
2. -1 to +1
3. 0 to +α
4. –α to +α

2.2 For two groups and sample size being >30, which statistical test is used ( )

1. Chi-Square
2. 'F'
3. 'Z'
4. 't'

2.3 In MS-Excel, every formula is must to begin with _____ sign. ( )

1. >
2. =
3. "
4. +

2.4 A sampling in which each unit has equal chance of being included is called

1. Random ( )
2. stratified
3. Purposive
4. all of them

2.5 The vertical bars represent _____ in histogram. ( )

1. Class interval
2. Class limits
3. Frequency
4. Mid value

2.6 The sum of deviations for each observation taken from arithmetic mean is

1. 0 ( )
2. 1
3. infinity
4. positive value

2.7 Selected number of individuals from population to be studied is called____ ( )

1. Population
2. Sample
3. Sampling
4. Sampling error

2.8 Range of Correlation coefficient is ( )

1. -1 to +1
2. -3 to + 3
3. $-\alpha$ to $+\alpha$
4. 0 to 1

2.9 Which test is used to test Goodness of fit? ( )

1. Population
2. Sample
3. Sampling
4. Sampling error

2.10 The measure of central tendency which divides the data in two equal parts is _____ ( )

1. Mean
2. Median
3. Mode
4. None of these

2.11 "Biometry" is the branch of genetics which deals with_____. ( )

1. Quantitative traits
2. Qualitative traits
3. Bioinformatics
4. all the above

2.12 Theory of evolution given by _____. ( )

1. Hugo Devries
2. Darwin
3. Jean Baptist Lamark
4. Morgon

2.13 _____ affected by environmental. ( )

1. Quantitative traits
2. Coat Colour
3. Colour blindness
4. Qualitative traits

2.14 _____ is the total genes possessed by males and females in the population. ( )

1. Genetic drift
2. Gene pool
3. Sampling variation
4. Panmixia

2.15 _____ mutation does not produce permanent change ( )
1. Non recurrent
2. Recurrent mutation
3. Forward mutation
4. All the above

2.16 The genetic properties of a population are expressed in terms of__ ( )
1. Gene frequency
2. Genotype frequency
3. Heritability
4. Both a and b

2.17 The gene and genotype frequency depends on _____ ( )
1. Selection
2. Population size
3. Panmixia
4. Both a and b

2.18 The mutation rates are generally low which ranges from_____per generation
1. 10^{4} to 10^{8} ( )
2. 10^{1} to 10^{2}
3. 10^{10} to 10^{20}
4. 10^{2} to 10^{4}

2.19 Recessive epistasis and Dominant epistasis ratio is _____. ( )
1. 15:1 & 12:3:1
2. 9:7 & 15:1
3. 9:3:4 & 12:3:1
4. 12:3:1 & 9:3:4

2.20 The correct order of the cell cycle is_____. ( )
1. G1 >G2 >M>S
2. G2 >S>G1 >M
3. G1 >M>G2 >S
4. G1 >S>G2 >M

Q.3 Attempt any <u>ten</u> out of the following twelve questions. Answer of each question should be in 2 to 3 lines. (10x2.0= 20)

3.1 Stop codon

3.2 Replication

3.3 Karyotype

3.4 Type I error

3.5 Crossing over

3.6 Histogram

3.7 Migration

3.8 ANOVA

3.9 Selective value

3.10 Variance

3.11 Poisson distribution

3.12 Null hypothesis

Q.4 Attempt any six out of the following eight questions. Answer of each question should be in 8 to 10 lines. **(6 x 6.0 = 36)**

4.1 Write a note on Sex determination

4.2 Write a note on polygenic inheritance

4.3 Write a note on chromosomal aberrations

4.4 Write a note on precision and bias in estimation of heritability

4.5 Write a note on meaures o6f kurtosis

4.6 Write a note on Pearson's correlation coefficient

4.7 Write a note on CRD

4.8 Write about E-mail and differentiate with that of Traditional mail.

Q.5 Answer the following question in 1-2 pages (attempt any two). (2x12.0 = 24)

5.1 Discuss the generation wise advancement of technology in the development of different types of computers.

5.2 State law of H.W. equilibrium. Prove the Hardy-Weinberg law with gene and genotypic frequencies.

5.3 Explain different measures of central tendency with their merit and demerits.

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Animal Genetics and Breeding Paper –II
(MSVE 2016)

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Unit-3 (Principles of Animal Breeding)

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.

Q.1 Fill in the blanks. **(20x0.5 = 10)**

1.1 _____ is widest possible form of outbreeding.
1.2 Cross between cattle and yak is _____.
1.3 Intensity of selection is also called as _____ selection differential.
1.4 Copper colour breed of Buffalo _____.
1.5 Crossing of large number of individuals with a tester line(inbred) is called ____.
1.6 GCA stands for General _____.
1.7 The matting of animals from different established breed is called _____.
1.8 Project directorate for cattle is located at _____ in India.
1.9 _____ breed of cattle is used for grading up of local cattle in Kerala.
1.10 When more than two criterions are used selection is called as _____ selection.
1.11 Individual selection is not possible for traits with _____ heritability.
1.12 When heritability of a trait is _____, one can do Progeny Testing for selection of males.
1.13 Karanfries if cross between Holstein Friesian and _____.
1.14 No of traits under selection affects intensity of selection _____ way.
1.15 Full sib selection has _____ accuracy than half sib selection.
1.16 Hereford is _____ type of breed of cattle.
1.17 Genetic correlations indicate what is likely to happen in one trait when selection is practiced for _____ trait.
1.18 Production traits have _____ heritability.
1.19 BLUP method was developed by _____.
1.20 Project Directorate for Poultry is located at _____ in India.

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: (20x0.5 = 10)

2.1 Mating of Indian goat was done with __ breed for increased meat production. ( )
1. Boer
2. Alpine
3. Anglo Nubian
4. Angora

2.2 Tester line is used in _____. ( )
1. Recurrent Selection
2. Individual Selection
3. Reciprocal Recurrent Selection
4. None of the above

2.3 The following is/are a factor/factors affecting Response to Selection. ( )
1. Intensity of Selection
2. Accuracy of Selection
3. Generation Interval
4. All of the above

2.4 The status of a species is called 'Vulnerable' when population size remains _____. ( )
1. 0-100
2. 100-1000
3. 1000-5000
4. 5000-10000

2.5 Landrace is exotic breed of _____. ( )
1. Sheep
2. Goat
3. Pig
4. Poultry

2.6 Which of the following is not a major area of economic importance with regard to genetic improvement of beef cattle. ( )
1. Mature size
2. Maternal Performance
3. Resistance to environmental stress
4. Carcass traits

2.7 The measure of individual performance for a specific trait is its _____ value. ( )
1. Average
2. Additive
3. Phenotypic
4. Genotypic

2.8 Famous milch breed of India with half-moon appearance of horns. ( )
1. Kankrej
2. Shahiwal
3. Gir
4. Umblacherry

2.9 Mule is an example of _____. ( )
1. Cross breeding
2. Species Hybridization
3. Grading up
4. Commercial synthetic method

2.10 The selection criterion based on ancestor performance. ( )
1. Individual selection
2. Pedigree selection
3. Family selection
4. Progeny testing

2.11 Response to selection is _____. ( )
1. h^2S
2. SD
3. SD x i
4. S^2h

2.12 Cross breeding is mating of animals from different established __. ( )
1. Breeds
2. Species
3. None of above
4. Both (a) and (b)

2.13 Which of following breed of cattle is dual purpose. ( )
1. Kankrej
2. Gir
3. Sahiwal
4. Dangi

2.14 Sunandini breed was developed using _____. ( )
1. Grading up
2. Top Crossing
3. Inbreeding
4. Species hybrid

2.15 Inbreed lines are most commonly used in _____. ( )
1. Poultry
2. Pig
3. Goat
4. Both (a) and (b)

2.16 Heterosis may be due to _____. ( )
1. Dominance
2. Over Dominance
3. Epistasis
4. All of above

2.17 Which of the following is example of composite breeding? ( )

1. Frieswal
2. Sunandini
3. Mehsana
4. Tharparkar

2.18 _____ is not multi trait selection method. ( )

1. ICT
2. Sire index
3. Tandem Method
4. MPPA

2.19 Which of the following is specifically use for egg production in poultry.

1. Selection index ( )
2. Osborne index
3. Sire index
4. Dam index

2.20 Home tract of Vachur breed of cattle. ( )

1. Rajsthan
2. Tamilnadu
3. Kerala
4. Karnataka

Q.3 Attempt any <u>ten</u> out of the following twelve questions. Answer of each question should be in 2 to 3 lines. (10x2.0= 20)

3.1 Inbreeding

3.2 Conservation

3.3 Half sib selection

3.4 Selection differential

3.5 Heritability

3.6 Composite breed

3.7 Top crossing

3.8 Accuracy of selection

3.9 Transgenesis

3.10 CNBS

3.11 Pedigree selection

3.12 MAS

Q.4 Attempt any <u>six</u> out of the following eight questions. Answer of each question should be in 8 to 10 lines. **(6 x 6.0 = 36)**

4.1 Breeding for disease resistance.

4.2 Crossbreeding

4.3 Response to selection

4.4 Prepotency

4.5 ICL

4.6 Osborne index

4.7 Inbreeding depression

4.8 Breeding management of dogs and cats.

Q.5 Answer the following question in 1-2 pages (attempt any two). (2x12.0 = 24)

5.1 Enlist the various types of out breeding with definition and write in detail about Heterosis.

5.2 Enlist the various types of aids to selection with definition and write in detail about progeny testing.

5.3 Breeding strategies for the improvement of dairy cattle and buffalo.