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B.V.Sc. & A.H. (Second Professional) Examination – 2023
Animal Genetics and Breeding Paper -II

Time: Three Hours

Maximum Marks: 100

Weightage: 20

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 Karan-Swiss is the cross of Brown-Swiss with.....
- 1.2 Mating of large bull to small cow is known as assortative mating.
- 1.3 The interval between two successive calving is known as
- 1.4 Positive heterosis is called as
- 1.5 For selection of carcass traits evaluation of animal is done by
- 1.6 Uttara is the indigenous breed of
- 1.7 Home tract of Mewari breed of Poultry is instate
- 1.8 Inbreeding coefficient was first given by.....
- 1.9 An example where relationship coefficient is one
- 1.10 The cattalo is the name given to the progeny produced by crossing and Bison.
- 1.11 ICDP stands for.....
- 1.12 is the ability of an individual to stamp its characteristics on the progeny.
- 1.13 The swamp buffalo breed of India is.....
- 1.14 The total number of registered cattle breeds in India are
- 1.15 National Bureau of Animal Genetics Resources is located in.....
- 1.16 BLUP stands for
- 1.17 Procedure of selection for a trait by genetic marker is called the.....
- 1.18 Mating of purebred (inbred)males with unrelated females is called
- 1.19 Semen having X- or Y- bearing sperms to produce progenies of a desired sex either female or male is known as
- 1.20 Livestock census is conducted every Years

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)
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2.1 Marwari is not a breed of

1. Sheep
2. Camel
3. Horse
4. Cattle

2.2 The biological name of sheep is

1. *Bos indicus*
2. *Capra hircus*
3. *Ovis Aries*
4. *Bos grunniens*

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2.3 Indigenous Poultry breed includes

1. White leg horn
2. Minorca
3. Daothigir
4. Plymouth rock

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2.4 An increase in the inbreeding coefficient (F), is likely to result in

1. Reduced likelihood of heterozygotes being present in a population
2. Higher proportion of genes that show linkage
3. Lower level of difference between proteins in two daughter cells
4. Higher level of difference between RNA molecules in two daughter cells

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2.5 Back fat thickness is a desired trait in

1. poultry
2. Goat
3. Pig
4. sheep

()

2.6 If lines are fully inbred, the variance of general combining ability is equal to ()

1. Non-additive
2. Over dominance
3. Epistasis
4. Additive variance

2.7 The first cloned sheep 'Dolly' was created through which of these techniques? ()

1. Nuclear transfer
2. Gene transfer
3. Germinal cell transfer
4. Somatic cell transfer

2.8 Which among the following is wrong about accuracy of selection? ()

1. It is the correlation between breeding value and phenotypic value.
2. It is dependent on the heritability
3. It can be increased by repeated measurement of traits
4. Accuracy of pedigree selection is more than that of individual selection

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- 2.9 Heterosis in F_1 generation is equal to
1. $\sum dy^2$ ()
 2. $\sum d^2y^2$
 3. $\sum dy^3$
 4. $\sum d^3y^3$
- 2.10 Co-efficient of relationship between two dizygotic twins is
1. 100% ()
 2. 50 %
 3. 25 %
 4. 75 %
- 2.11 A new breed can be evolved by
1. Grading up ()
 2. Out crossing
 3. Cross breeding
 4. Inbreeding
- 2.12 In situ conservation
1. Freezing of semen ()
 2. Maintaining live animal breeding population
 3. Freezing of embryos
 4. All the above
- 2.13 Jersind cattle is the cross of Jersey with
1. Tharparker ()
 2. Sahiwal
 3. Gir
 4. Red Sindhi
- 2.14 National Research Centre (NRC) on camel is situated at
1. Jaipur ()
 2. Hisar
 3. Karnal
 4. Bikaner
- 2.15 'Sanchori' is the breed of
1. Cattle ()
 2. Buffalo
 3. Sheep
 4. Goat
- 2.16 Ability of female animal of produce large numbers of young ones in their life span is called as
1. Prepotency ()
 2. Prolificacy
 3. Probability
 4. Repeatability
- 2.17 Inbreeding coefficient of full sib
1. 0.50 ()
 2. 0.25
 3. 0.75
 4. 1.00

2.18 Which of these native breed was used for the development of synthetic breed 'Phule Traveni' ()

1. Sahiwal
2. Gir
3. Red Sindhi
4. Tharparkar

2.19 Exotic breed for pelt production ()

1. Australian merino
2. Soviet merino
3. Karakul
4. Rambouillet

2.20 Which of the following exotic cattle breed is suitable in most parts of India where the climate is hot and sufficient irrigation facilities are not available ()

1. Brown Swiss
2. Ayrshire
3. Holstein Friesian
4. Jersey

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

3.1 Breed descriptors

3.2 Selection differential

3.3 Elite female

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3.4 Species hybridization

3.5 Effective population size

3.6 Grading Up

3.7 Intensity of selection

3.8 Controlled breeding

3.9 Transgenesis

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3.10 Artificial Selection

3.11 Kennel club of India

3.12 Backcrossing

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 Inbreeding depression and its consequences

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4.2 Sire evaluation

4.3 All India coordinated Research Project on Buffaloes

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4.4 Reciprocal Recurrent Selection

4.5 Selection index

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4.6 Limitations of captive Breeding

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4.7 How to develop inbred lines

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4.8 Advantages of ONBS over CNBS

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

(2x12.0 = 24)

- 5.1 What is selection? Write in brief about various basis or aids to selection with their merits and demerits. (2+5+5)
- 5.2 Describe in detail economic traits of dairy cattle along with their importance in dairy farming economics. (8+4)
- 5.3 What do you understand by conservation and preservation? Enlist principles and objects of conservation. Describe in brief methods of conservation employed for animal genetic resources. (3+5+4)