Question Bank

- 1. Scientist who coined the term Genetics
- 2. What is the contribution of Wilhem Johanssen to Genetics?
- 3. Theory of pangenesis was proposed by ------
- 4. The concept of Genotype and Phenotype was introduced by -----
- 5. Chromosome theory of heredity was proposed by
- 6. Germ plasm theory was put forward by
- 7. The nationality of Gregor Mendel who is regarded as "father of genetics"
- 8. In 1900, Mendel's work were rediscovered by ------
- 9. Law of Segregation is also known as------
- 10. Human blood group type is an example of -----
- 11. ----- and ----- are two recessive traits that are inherited.
- 12. What is the ratio due to double recessive epistasis?
- 13. Linkage was first observed by------ in sweet pea.
- 14. Crossing over occurs in the ----- stage of meiosis.
- 15. Chromosome number in fowl is ------
- 16. Epistasis works at----- level where as Dominance always work at the -----level
- 17. What is penetrance ?
- 18. The degree to which a genotype is expressed phenotypically is called
- 19. Name the scientist who first discovered chromosomes
- 20. Who coined the term Chromosomes?
- 21. The organelle from which the r-RNA is synthesized
- 22. Metacentric chromosomes assume which shape?
- 23. Pairing of the homologous chromosomes takes place at ------ stage
- 24. Coiled filament that runs throughout the length of the chromosome is called

25. Darkly stained regions of the chromosomes at prophase is called ----

- 26. Sex chromatin are rich in -----
- 27. Where are Lampbrush chromosomes found?
- 28. The Octate structure in the nucleosome consists of ----
- 29. Balbiani rings or Chromosomal puffing are present in------
- 30. Interphase of the cell cycle consists of ------
- 31. Complete synaptonemal complex is found in which stage?
- 32. Sythesis of DNA is completed in -----stage of Meiosis
- 33. The unit representing a map unit between the linked gene.....

34. Phenomenon by which crossing over in one region suppresses crossing over in adjacent region----

- 35. What is coefficient of coincidence ?
- 36. ----- is measured using coefficient of coincidence ?
- 37. In fowl females are heterogametic T / F
- 38. Barred plumage in poultry is a type of ----
- 39. Genic balance theory of sex determination was proposed by ------
- 40. ---- confirms the presence of barr body in female somatic cells.
- 41. -----syndrome which is caused by deletion of short arm of chromosome no 5
- 42. Point mutation was first noticed by ------ in Ancon sheep?
- 43. World's first chromosome map was produced by------
- 44. The no . of chromosomes in Drosophila is ------
- 45. Haploid-Diploid type of sex determination is seen in ------
- 46. In Drosophila sex is determined by the ratio of X chromosome to ------
- 47. Polyploids created by chromosome duplication is called ------
- 48. The presence of extra chromosome sets in a cell is called as ------

49. which is the stain used for G banding----

50. The chart of images of chromosomes is called ------

ANSWERS

1.William Bateson 2.Coined 'allele' and 'genes' 3. Darwin 4.W Johanssen 5.W S Sutton 6.Weismann 7.Austria 8. Hugo de Vries, Carl Correns Eric von Tschermack 9.Law of purity of gametes 10.Multiple alleles 11.Alkaptonuria and Phenylketonuria 12.9:7 13.Bateson and Punnet 14.Pachytene 15.78 16.Intergenic, Intragenic 17. % of individuals with a given genotypes which exhibits the related phenotypes. 18.Expressivity 19.Strassburger 20.Waldever 21.Nucleolus 22." V " shape 23. Zygotene 24.chromonema 25.heterochromatin 26.Heterochromatin 27. Primary oocytes of amphibians and spermatocyte of Drosophila. 28. Two molecules each of H2A, H2B, H3 and H4. 29.Salivary gland cells of Drosophila. $30.G_{1}\text{, }S$ and G_{2} 31.Zygotene 32.Zygotene 33.CentiMorgan 34.Interference 35.% of observed cross overs/ % of expected crossovers (RATIO) 36. Degree of interference 37.T 38.Sex linked character 39.C.B.Bridges 40.Lyon's hypothesis 41.Cridu-chat syndrome 42.Seth Wright 43.Alfred Sturtevant 44.8 45. Honey bees and wasps 46.Autosomes

47.Autopolyploid 48.Polyploidy 49.Giemsa 50.Karyotype

Who gave the theory of path coefficient? (a) Sewell Wright (b) Fisher (c) Haldane (d) Hazel Answer>>

2. Name the scientist who defined selection as "differential reproductive rate" ? (a) Hazel (b) Lush (c) Lerner (d) Falconer <u>Answer>></u>

3. Heritability of a trait is given by (a) r_{AP} (b) b_{AP} (c) b_{GP} (d) none of above Answer>>

4. Inbreeding coefficient (F) in the first generation when half sibs are bred is (a) 0 (b) 0.062 (c) 0.125 (d) 0.250 <u>Answer>></u>

5. Inbreeding coefficient (F) through full sib (brother X sister) mating reaches > 0.986 after how many generations (a) 10 (b) 15 (c) 20 (d) none of the above <u>Answer>></u>

6. Variance of change in gene frequency after one generation of sampling is (a) $\frac{1}{2}N(p_0q_0)^2$ (b) $p_0q_0/2N$ (c) 1- p_0q_0 (d) none of the above <u>Answer>></u>

7. Response is not a function of (a) Selection intensity (b) Mean of the trait (b) phenotypic standard deviation of trait (d) h^2 of the trait <u>Answer>></u>

8. Individual merit and family merit as basis of selection was proposed by ______ (a) Hazel and Lush (b) Hazel (c) Lush (d) Lerner <u>Answer>></u>

9. Another name of selection intensity is ______ (a) Standardized selection differential (b)
 Weighed selection differential (c) Selection differential (d) Selection coefficient <u>Answer>></u>

10. Selection procedure not widely used in poultry breeding is _____(a) Individual selection (b) family selection (c) progeny testing (d) sib selection <u>Answer>></u>

11. The selection index method was introduced in animal breeding by _____ (a) Lush (b) Smith and Hazel (c) Lerner (d) Comstock <u>Answer>></u>

12. A locus will contribute to a change of mean value on inbreeding only if ______ (a) Dominance is absent (b) There is epistasis (c) There is partial dominance (d) Dominance is not zero <u>Answer>></u>

13. The covariance of the mean of the offspring and the mid parent is _____ (a) V_A (b) $\frac{1}{2}V_A + \frac{1}{4}V_D$ (c) $\frac{1}{2}V_A$ (d) V_G <u>Answer>></u>

14. Intra-sire regression of offspring on dam estimates (a) heritability (b) repeatability (c) half of heritability
(d) twice the heritability <u>Answer>></u>

15. By increasing the intensity of selection, breeder can increase the ______ (a) response per unit time
(b) response per generation (c) realized response (d) realized heritability <u>Answer>></u>

16. The occurrence of heterosis on crossing is dependent on (a) non-directional dominance (b) directional dominance (c) presence of dominance (d) presence of heterotic genes<u>Answer>></u>

17. A measure of variation which is correlated with the mean is ______ (a) variation (b) standard deviation (c) coefficient of determination (d) coefficient of variation <u>Answer>></u>

18. The mean performance of line when expressed as the deviation from the mean of all crosses is called
(a) G.C.A of line (b) S.C.A of line (c) G.C.A and S.C.A of line (d) Average effect of the
line <u>Answer>></u>

19. Reciprocal recurrent selection (RRS) is used to improve (a) only G.C.A (b) only S.C.A (c) Both G.C.A and S.C.A (d) None <u>Answer>></u>

20. Reciprocal recurrent selection was first proposed by ______in 1949 (a) Comstock, Robertson and Harvey (b) Comstock, Robinson and Harvey (c) Croas, Robertson and Fisher (d) Comstock, Lush and Hazel <u>Answer>></u>

21. What increases or decreases the chance of fixation of a new mutant (a) Crossbreeding (b) Random drift (c) Selection (d) Inbreeding <u>Answer>></u>

22. Variance due to general combining ability arises due to (a) $V_A + V_{AA} + V_{AD}$ (b) $V_A + V_{AA} + V_D$ (c) $V_A + V_{AA} + V_{DD}$ (d) $V_A + V_{AA} + V_{$

23. If the frequency of recessive gene in a population if 0.10, then what would be the frequency of this recessive gene after 4 generations of selection in which all recessive homozygotes are discarded (a) 0.001 (b) 0.071 (c) 0.005 (d) 0.021 <u>Answer>></u>

24. The ratio of response to selection to selection differential is the: (a) degree of genetic determination(b) heritability in broad sense (c) realized heritability (d) heritability in narrow sense <u>Answer>></u>

25. When response to selection has ceased, the population is said to be at (a) zero response (d) selection limit (c) Response limit (d) no response <u>Answer>></u>

26. The maternal effect may show an asymmetry of response associated with (a) genes derived from dam (b) maternal component of the trait (c) Traits governed by xx chromosomes (d) traits governed by females hormones<u>Answer>></u>

27. If additive gene action is most important for a trait, the best and simplest basis of selection is: (a) pedigree selection (b) individual selection (c) progeny testing (d) none <u>Answer>></u>

28. If the environmental and genetic effects of a trait are different to distinguish the individual selection is:(a) advantageous (b) disadvantageous (c) equally efficient to other methods (d) none <u>Answer>></u>

29. In an analysis of half sib families the component of covariance between sire is: (a) $1/2 \text{ COV}_A$ (b) $1/4 \text{ COV}_A$ (c) $3/4 \text{ COV}_A$ (d) $\text{COV}_{AB} \underline{Answer>>}$

30. Precision of heritability estimate depends on its: (a) standard error (b) coefficient of variation (c) sampling variance (d) all the above <u>Answer>></u>

31. The panmictic index at tth generation is (a) $P_t = (1+\Delta f)^t P_0$ (b) $P_t = (1-\Delta f)^t P_0$ (c) $(1-\Delta f_{t-1}) P_0$ (d) none above <u>Answer>></u>

32. Highest genetic gain can be achieved by accurate estimation of breeding value by (a) sires of dams(b) dams of sires (c) sires of sires (d) dams of dams <u>Answer>></u>

34. Family selection is better than individual selection when interclass correlation of phenotypic values is ______(a) zero (b) 0.5 (c) >0.5 (d) <0.5 <u>Answer>></u>

35. Faster rate of genetic improvement can be achieved in (a) dairy cattle for milk production (b) sheep for lamb production (c) Pig for litter size (d) broilers for growth rate <u>Answer>></u>

36. In case of multiple trait selection, as compared to intensity of selection for each of the trait separately for 'n' traits under simultaneous selection, the selection intensity for combined selection would decrease by (a) n times (b) 1/n times (c) $1/\sqrt{n}$ times (d) 2n times <u>Answer>></u>

37. If fixed number of sires are tested under farm progeny testing, the improvement in management practices in cows will improve ______ (a) intensity of selection of sires (b) accuracy of selection of sires (c) Selection differential of sires (d) none <u>Answer>></u>

38. The correlated response obtained for a trait when selection is done on another trait is due to
(a) Linkage effect (b) pleotrophic effect (c) epistatic effect (d) dominance effect <u>Answer>>></u>

39. Hardy Weinberg law was formulated in the year (a) 1809 (b) 1908 (c) 1918 (d) 1928 Answer>>

40. Repeatability sets an upper limit to (a) V_A/V_P (b) V_G/V_P (c) both above (d) V_A/V_D <u>Answer>></u>

41. In a population under H-W equilibrium, the maximum genotype frequency of heterozygote will be observed when the frequency of dominant gene is (a) 0.4 (b) 0.5 (c) 0.6 (d) 0.25 <u>Answer>></u>

42. The genetic covariance of full sib is (a) 1/2 V_A (b) 1/4 V_A (c) 1/2 V_A + 1/4 V_D (d) 1/2 V_A + 1/2 V_D <u>Answer>></u>

43. Number of generations 't' required to change the gene frequency from q_0 to q_t is ______ (a) q_t - q_0 (b) $2(q_t-q_0)$ (c) $1/q_t - 1/q_o$ (d) none above <u>Answer>></u>

44. if 'L' is the load borne by the population, the average fitness of the population is _____ (a) 1-L (b) L-1 (c) 1/L (d) none <u>Answer>></u>

45. If gene frequency in migrants is the same as that in the groups from and to which they go, migration affects: (a) quality of population (b) no. of population (c) neither quality nor number (d) both quality and number <u>Answer>></u>

46. If 25% have the recessive phenotype (aa) and the population is in equilibrium with respect to this locus, then q is _____ (a) 0.25 (b) 0.5 (c) 0.75 (d) 1.00 <u>Answer>></u>

47. The difference between the genotype value (G) and the breeding value (A) of a particular genotype is
(a) dominance deviation (b) no dominance (c) directional dominance (d) none of the above <u>Answer>>></u>

48. The quantitative traits are governed by genes having large phenotypic effects are called (a) quantitative genes (b) major genes (c) minor genes (d) polygenes <u>Answer>></u>

49. The correlation between breeding values and phenotypic values is equal to the square root of(a) repeatability (b) regression (c) response (d) heritability <u>Answer>></u>

50. The resemblance between offspring and parents provide the basis for (a) discrete breeding (b) inbreeding (c) random breeding (d) selection breeding <u>Answer>></u>

51. selection brings about many changes in the population. The ultimate interest of the breeder may be in
(a) change in gene frequency (b) change in population mean (c) change in variation (d)
extruding the range of traits <u>Answer>></u>

52. The sum of the additive or average effects for all loci influencing a trait is referred as (a) additive genetic variance (b) average breeding value (c) dominance variation (d) epistatic variation <u>Answer>></u>

53. Sibs selection is recommended for (a) sex linked traits (b) sex limited traits (c) sex influenced traits (d) none of the above <u>Answer>></u>

54. The first progeny testing scheme was launched in India during first five year plan at: (a) Hissar (b) Karnal (c) Ludhiana (d) Anand <u>Answer>></u>

55. The BLUP method for sire evaluation was suggested by _____ (a) Lush (b) Henderson (c) S. Wright (d) Fischer <u>Answer>></u>

56. Nili-Ravi breed of buffalo is formed in (a) Punjab (b) Maharashtra (c) UP (d) Gujarat Answer>>

57. Project directorate on cattle was established in _____ (a) 1990 (b) 1985 (c) 1987 (d) 1986 <u>Answer>></u>

58. Equal parent index (EPI) is an expression of: daughter production (a) higher than sire and dam production (b) lower than sire and dam production (c) half way between sire and dam production (d) equal to sire and dam production <u>Answer>></u>

59. Variation without natural discontinuities is called continuous variation and character that exhibit it are called (a) metric character (b) correlated character (c) neutral character (d) balanced character <u>Answer>></u>

60. The precision of heritability estimate is known by the ______ (a) standard error (b) magnitude (c) method of estimation (d) experimental design <u>Answer>></u>

61. The description of the covariance, applicable to any sort of relationship is (a) between half and full sibs (b) between offspring and mid parent (c) between offspring and one parent (d) all the above <u>Answer>></u>

62. Sire intra-class correlation (t) is _____ times of h² variance (a) 1/2 (b) 1/4 (c) 1 time (d) none above <u>Answer>></u>

63. Disruptive process change gene frequency in a manner predictable in _____ (a) amount only (b) direction only (c) both (d) none <u>Answer>></u>

64. The strength of selection is expressed as (a) coefficient of selection (b) response to selection (c) selection differential (d) none <u>Answer>></u>

65. if 's' is the coefficient of selection then the relative fitness of the genotype selected against is : (a) S
(b) 1-S (c) S/2 (d) none <u>Answer>></u>

66. Genetic drift in small population is an example of ______ (a) systematic process (b) dispersive process (c) none of the above <u>Answer>></u>

67. Degree of genetic determination is (a) h^2 in narrow sense (b) h^2 in broad sense (c) additive variance (d) none <u>Answer>></u>

68. When repeatability is low, multiple measurements gives ______ gain in accuracy (a) large (b) a little (c) none <u>Answer>></u>

69. The proportion of phenotypic variation expressed by repeatability is (a) permanent genetic variance
(b) permanent environmental variance (c) both (d) special environmental variance <u>Answer>></u>

70. The regression of offspring and one parent (b_{op}) is given by _____ (a) V_A/V_P (b) 1/4 V_A/V_P (c) 1/2 V_A/V_P (d) 3/4 V_A/V_P <u>Answer>></u>

Answer Key

| 1.a | 11.b | 21.c | 31.b | 41.b | 51.b | 61.d |
|------------|--------------|--------------|--------------|--------------|--------------|------|
| 2.b | 12.d | 22.d | 32.c | 42.c | 52.b | 62.b |
| 3.D 4.c | 13.C 14 c | 23.D 24 c | 33.0 34 c | 43.C 14 a | 53.D 54 a | 64 a |
| 4.0 5.0 | 14.0 15.b | 24.0 25.b | 35.d | 45.c | 55.b | 65.b |
| 6.b | 16.b | 26.b | 36.c | 46.b | 56.a | 66.b |
| 7.b | 17.d | 27.b | 37.b | 47.a | 57.c | 67.b |
| 8.c | 18.a | 28.b | 38.b | 48.b | 58.c | 68.a |
| 9.a | 19.c | 29.b | 39.b | 49.d | 59.a | 69.c |
| 10.c | 20.b | 30.c | 40.c | 50.d | 60.a | 70.c |

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PART.A: ANIMAL GENETICS

- 1. Germ Plasm theory was postulated by
- a) Lamark b) Weisman c) Kolliker d) Hertwig

2. The ability of a given gene or gene combination to be expressed phenotypically to any degree

| a) Penetrance | b) expressivity | c) pleiotropism | d) |
|---------------|-----------------|-----------------|----|
| prepotency | | | |

- 3) Linkage group in swamp buffalo
- a) 25 b) 30 c) 24 d) 26

4. Total number of genotypes in human ABO blood group system

a) 3 b) 12 c) 6 d) 4

5. Eye colour in drosophila is an example of

| a) Sex linked inheritance | b) sex limited inheritance | c) |
|----------------------------|----------------------------|----|
| sex influenced inheritance | d) incomplete dominance | |

6. If the X/A ratio is 0.5, the individual will be

| a) Intersex | b) normal female | c) super female | d) |
|-------------|------------------|-----------------|----|
| normal male | | | |

7) Total number of barr bodies in an individual with Turner's syndrome

a) 0 b) 1 c) 2 d) none of the above

8. In translocation, the exchange of chromosomal segments occurs

a) With in the same chromosome b) between homologous chromosomes c) between non homologous chromosomes d) both b and c

9. If a woman heterozygous for colour blindness marries a colour blind man, what is the probability that their first child will be colour blind daughter?

a) 50% b) 25 % c) 75% c) 100%

10. If the centromere is located close to the end, and giving a very short arm and an exceptionally long arm, the chromosome is called

a) acrocentric b) telocentric c)submetacentric d)none of the above

11. Shortest phase in mitosis is

a) prophase b) anaphase c) metaphase d) telophase

12. Soluble RNA (sRNA) is

| a) tRNA RNA | b) rRNA | c)mRNA | |
|---|-----------------------------|----------------------------|------------|
| 13. The theory of | epigenesis was proposed | by | |
| a) K.F. Wolf Kolliker | b) Charles Darwir | n c) Swammerdam | d) |
| 14. Phenotypic F2 interaction) is | 2 ratio of duplicative rece | essive epistasis (compleme | ntary gene |
| a) 12:3:1 9:3:3:1 | b) 9:7 | c) 9:6:1 | d) |
| 15. Source of ene | rgy in nucleus is | | |
| a) glycolysis only none of the above | b) TCA cycle o | only c) both a and b | o d) |
| 16. Crossing over | taking place at | | |
| a) mitosis the above | b) meiosis ll | c) meiosis l | d)all of |
| 17. Xanthine is de | eaminated product of | | |
| a) adenine | b) thymine | c) cytosine | d) guanine |

18. The types of phenotypes in F2 generation is

| a) 2 ⁿ | b) 3 ⁿ | c) n^2 | d) n^3 |
|-------------------|-------------------|---------------|----------|
| u) 2 | 0) 5 | v) II | u) 11 |

| 19. Sum total of genes in a population is | |
|---|--|
|---|--|

| a) genotype | b) karyotype | c) gene pool | d) gene |
|-------------|--------------|--------------|---------|
| frequency | | | |

| 20. Rho factor is required for the termination of | | | | | | |
|---|-----------------------------|---------------------|--------|----|--|--|
| a) Replication transversion | b) transcription | c) translation | | d) | | |
| 21. The types of h | istone proteins present in | eukaryotic chromoso | me are | | | |
| a) 4 | b) 5 | c) 6 | d) 7 | | | |
| | | | | | | |
| 22. The classical t | est cross ratio in dihybric | l is | | | | |

| a) 7:1:1:7 | b) 1:7:7:1 | c) 1:1:1:1 | d) both a and b |
|------------|------------|------------|-----------------|
|------------|------------|------------|-----------------|

23. Chromatin consists of

| a) DNA & protein only | b RNA & protein only | c) RNA |
|-----------------------|----------------------|--------|
| & protein only | d) DNA,RNA&protein | |

| \mathbf{A} | C1 | 1 | C | 1 | , • | • | • |
|--------------|-------------|---------|------------|-------|--------|---------------|----|
| 24 | (hromosome | number | ot | dome | estic. | $n_{1\sigma}$ | 1S |
| | cinomosonie | mannoer | U 1 | GOIII | | P18 | 10 |

| a) 38 | b) 78 | c) |
|-------|-------|----|
| 62 | d) 54 | |

| 25. Epistasis is | . type of interaction | | |
|----------------------------------|-----------------------|--------------------|----|
| a) inter allelic both a and c | b) intra allelic | c) allelic genetic | d) |

26. Sickle cell anemia is due to point mutation, in which

a) glu. is replaced by val. b) val. is replaced by glu. c) his. is replaced by val. d) val. is replaced by his. (Note: val-valine,glu-glutamic acid)

27. MN blood group system in humans is an example of

| a) multiple alle | lism | b) co dominance | c) incomplete |
|------------------|---------|-----------------|---------------|
| dominance | d) plei | iotropism | |

28. If the number multiple alleles for a trait is 5, then what is the total number of genotypes

a) 9 b) 16 c) 12 d) 15

29. Chromosome theory of linkage was proposed by

a) Beadle and Tatum b) Bateson and Punnett c) Morgan and Castle d)Sutton and Bovery

30. Barred condition in poultry is an example of

a) sex linked inheritance b) sex limited inheritance c) multiple allelism d) sex influenced inheritance

······

ANSWERS A:

| 1.b | 2.a | 3.c | 4.c 5.a | 6.d | 7. a | 8.c | 9.b | 10.a | 11.b | 12.a | 13.a | 14.b |
|------|-----|------|---------|------|------|------|-----|------|------|------|------|------|
| | | | | | | | | | | | | |
| 15.a | 16 | ō.c | 17.d | 18.a | 19.c | 20.1 | b 2 | 21.b | 22.c | 23.d | 24.a | 25.a |
| 26.a | 2 | 27.b | 28.d | 29.c | 30.a | | | | | | | |

PART.B: ANIMAL BREEDING

| 1. Quantitative traits | are controlled by | | |
|-----------------------------|-------------------|---------------|------------|
| a) major genes and c | b) minor genes | c) poly genes | d) both b |
| 2. Breeding value (B | V) is | | |
| a) equal to the TA of TA | b) twice the TA | c) 1/2 of TA | d) 1/4 |
| 3. Heritability in nar | row sense is | | |
| a) VA/VP VA+VG/VP | b) VE/VP | c) VG/VP | d) |

| 4. Repeatability value | set inof h | neritability | |
|---|---|----------------------------|-----------------|
| a) lower limit of h^2 both a and b | b) upper limit | of h^2 c) intermedia | ate of h^2 d) |
| 5. The most effective | method of selection | | |
| a) mass selection selection index | b) pedigree select | ion c) progeny | testing d) |
| 6. Quantitative traits s | hows | | |
| a)continuous variation b d)none of th | n b)discontinuou le above | s variation c)both a | a and |
| 7. Genotypic frequenc | ey of progeny depen | ds on | |
| a) genotypic freq. of p freq. of parent | arent b) geno d) both a and c | otypic freq. of population | on c) gene |
| 8. In a population sex total sex linked genes | linked genes are can in the population | rried by homogametic s | ex isof the |
| a) 1/2 | b) 1/4 | c) 1/3 | d) 2/3 |
| 9. Type of gene action | n in general combini | ng ability (GCA) is | |
| a) additive above | b) non additive | c) both a and b | d) none of the |
| | | | |

10.Range of h^2 and fitness is

| a) 0 to 1 | b) -1 to +1 | c) 0 to infinity | d) 0 to |
|----------------|-------------|------------------|---------|
| x ⁿ | | - | |

11. The proportion of population which shows genetic death is

| a) genetic sterility | b) genetic linkage | c) genetic load | d) |
|----------------------|--------------------|-----------------|----|
| genetic drift | | | |

12. For inbreeding, mated individuals should have common ancestors with in

| a) 2-3 generations | b) 4-6 generations | c) 6- |
|--------------------|-----------------------------|-------|
| 7 generations | d) more than 10 generations | |

13. Inbreeding coefficients of progenies produced by self mating, parent offspring mating, full sibs and half sibs are in the order

a) 1,0.5,0.25,0.125 b) 0.5,0.5,0.25,0.125 c) 1,0.5,0.5,0.25 d) 0.5,0.25,0.25,0.125

14. Hissardale is the cross of

| a) Merino ewe x Bikaneri ram | b) Lincoln ram x Rambouillet ewe | c) |
|------------------------------|----------------------------------|----|
| Merino ram x Bikaneri ewe | d) Lincoln ewe x Rambouillet ram | |

15. In the second generation, hybrid vigor will be

| a) same as t | he first | b) doubled the first | c) half of the |
|--------------|---------------|----------------------|----------------|
| first | d)none of the | e above | |

16. Crossing of two inbred lines of the same breed is

| a) Incrossing | c) Incross breeding | c) top incrossing | d) top |
|------------------|---------------------|-------------------|--------|
| incross breeding | | | |

- 17. The intensity of selection depends with number traits considered 'n' is
- a) 1/n b) $1/n^2$ c) n d) $1/\sqrt{n}$
- 18. Non additive gene action include,
- a) epistasis b) dominance c) interaction d) all of the above
- 19. Mildest form of out breeding is
- a) Cross breeding b) close breeding c) out crossing d) rotational crossing

20. The dispersive process mainly occurs in small population in which,

| a) only direction can be predicted not amount not direction | b) only amount can be predicted |
|---|---------------------------------|
| c) both amount and direction can be predicted be predicted | c) direction and amount cannot |

21. The contribution of offspring to the next generation is called

| a) fitness | b) adaptive value | c) selective value | d) all of |
|------------|-------------------|--------------------|-----------|
| the above | | | |

22. Genotypic correlation is due to

| a) polymorphism both b and c | b) linkage | c) pleiotropism | d) | | |
|--|--|---------------------------------------|---------------|--|--|
| 23. Carcass quality a | nd quantity is an ex | cample of | | | |
| a) non additive gene &b d)none of the | interaction e above | b) additive gene interaction | c) both a | | |
| 24. In MN blood gro the gene frequencies | up system, genotyp of M and N alleles | bes are $MM = 153$, $MN = 260$, are | NN = 87, then | | |
| a) 0.64, 0.36 0.482 | b) 0.5, 0.5 | c) 0.566, 0.434 | d) 0.518, | | |
| 25. A new breed can be evolved by | | | | | |
| a) out crossing of the above | b) cross breed | ding c) grading up | d) none | | |
| 26. If the coefficient of selection is 0.25, then the fitness is | | | | | |
| a) 1 | b) 0.25 | c) 0.75 | d)0.5 | | |
| 27. Father of modern animal breeding | | | | | |
| a) Robert Bakewell Lush d | b) S.Wr)Gauss | ight c)J.L. | | | |
| | | | | | |

28. Reproductive traits in animals usually follow \dots type h^2

| a) High of the above | | b) n | o) medium | | | | c) low | | | d) none | |
|-------------------------|---------------------------------------|------------|-----------|--------|--------|----------------|---------|--------|------|---------|--|
| 29. The goat b | oreed, to | oggenbe | erg ori | ginate | ed fro | m | | | | | |
| a) Spain nce | | b) Denmark | | | | c) Switzerland | | | | d) Fra | |
| 30. Grading u | p produ | ices pur | e breed | in ho | w ma | iny gen | eration | 8 | | | |
| a) 2-4 7-8 | | b) 4-5 | | | | | c) 10-1 | | d) | | |
| | · · · · · · · · · · · · · · · · · · · | | | | | | | | | •••• | |
| ANSWERS I | <u>3 :</u> | | | | | | | | | | |
| 1.d 2.b 13.d | 3.a | 4.b | 5.c | 6.a | 7.c | 8.d | 9.a | 10.a | 11.c | 12.b | |
| 14.c 15.c c 25.b | 16.a | 17.d | 18.d | 1 | 9.c | 20.b | 21.0 | d 22.d | 23.b | 24. | |
| | | | | | | | | | | | |

26.c 27.c 28.c 29.c 30.d