1. 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 Answer>>

3. Heritability of a trait is given by (a) rAP (b) bAP (c) bGP (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 Answer>>

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 Answer>>

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 Answer>>

7. Response is not a function of (a) Selection intensity (b) Mean of the trait (b) phenotypic standard deviation of trait (d) h2 of the trait Answer>>

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

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

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

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

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 Answer>>

13. The covariance of the mean of the offspring and the mid parent is _____ (a) VA (b) ½VA+¼VD (c) ½VA (d) VG Answer>>

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

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 Answer>>

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 genesAnswer>>

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 Answer>>

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 Answer>>

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 Answer>>

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 Answer>>

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

22. Variance due to general combining ability arises due to (a) VA + VAA+ VAD (b) VA + VAA+ VD (c) VA + VAA+ VDD (d) VA + VAA+ VAAA Answer>>

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 Answer>>

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 Answer>>

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 Answer>>

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 Answer>>

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 Answer>>

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 Answer>>

29. In an analysis of half sib families the component of covariance between sire is: (a) 1/2 COVA (b) 1/4 COVA (c) 3/4 COVA (d) COVAB Answer>>

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

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

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 Answer>>

33. For predicting breeding value of a cow on basis of information on itself, its dam and paternal halfsibs we use _____ (a) Analysis of variance technique (b) Maximum likelihood technique (c) Multiple correlation technique (d) Multiple regression technique Answer>>

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 Answer>>

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 Answer>>

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/ n times (d) 2n times Answer>>

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 Answer>>

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 Answer>>

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) VA/VP (b) VG/VP (c) both above (d) VA/VD Answer>>

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 Answer>>

42. The genetic covariance of full sib is (a) 1/2 VA (b) 1/4 VA (c) 1/2 VA + 1/4 VD (d) 1/2 VA + 1/2 VD Answer>>

43. Number of generations 't' required to change the gene frequency from q0 to qt is _____ (a) qt-q0 (b) 2(qt-q0) (c) 1/qt - 1/qo (d) none above Answer>>

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 Answer>>

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 Answer>>

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 Answer>>

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 Answer>>

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 Answer>>

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

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

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 Answer>>

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 Answer>>

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

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

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

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 Answer>>

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 Answer>>

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 Answer>>

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

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 Answer>>

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

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

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

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 Answer>>

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

67. Degree of genetic determination is (a) h2 in narrow sense (b) h2 in broad sense (c) additive variance (d) none Answer>>

68. When repeatability is low, multiple measurements gives_____ gain in accuracy (a) large (b) a little (c) none Answer>>

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

70. The regression of offspring and one parent (bop) is given by _____ (a) VA/VP (b) 1/4 VA/VP (c) 1/2 VA/VP (d) 3/4VA/VP Answer>>

Answer Key

1.a

2.b

3.b

4.c

5.c

6.b

7.b

8.c

9.a

10.c

11.b

12.d

13.c

14.c

15.b

16.b

17.d

18.a

19.c

20.b

21.c

22.d

23.b

24.c

25.b

26.b

27.b

28.b

29.b

30.c

31.b

32.c

33.d

34.c

35.d

36.c

37.b

38.b

39.b

40.c

41.b

42.c

43.c

44.a

45.c

46.b

47.a

48.b

49.d

50.d

51.b

52.b

53.b

54.a

55.b

56.a

57.c

58.c

59.a

60.a

61.d

62.b

63.a

64.a

65.b

66.b

67.b

68.a

69.c

70.c