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2010/2011 HARMATTAN SEMESTER EXAMINATION

BIO201 (GENETICS I).
INSTRUCTION: ATTEMPT ALL QUESTIONS
TIME ALLOWED: 45 Mins

There are two types of genetic characters which are 1 and 2. Character like sex of organism is controlled by 3. The father of genetics is 4 because he postulated two laws which are 5 and 6. The phenotypic ratio of the first law is 7 while that of the genotypic ratio is 8. The second law has a phenotypic ratio of 9 and genotypic ratio is 10. A student crossed tall plants producing white flowers and round fruits with a short plant having red flower with wrinkle fruits. (Note tallness, red colour and smooth are dominant traits) What percentage of the offspring will be :

i) Tall with red flower and wrinkle fruit 11
ii) Tall with red flower and round fruit 12
iii) What is the phenotypic ratio 13
iv) What is the genotypic ratio 14

When a child takes after his/her mother's character, the character is controlled by 15 and not 16 genes which are located in the 17 and aligned along the 18. When a character is controlled by more than one pair of gene, it is called 19 inheritance. In this type of inheritance, the main gene is referred to as 20 gene while the other is called 21 or 22 gene(s), which could be 23 and 24. The fingertips are heritable characters which could be 25, 26 and 27. The genes that control ABO system is referred to as 28 since I^A gene is 29 to I^B while they are dominant over 30.
A student crossed two plants and got these results: i. 431 tall plants and 109 short plants. Calculate the X^2 value 31. ii) Is the character Mendelian? Taking X^2 value of 3.841 as your limit of confidence 32. The major difference between Mendelian genetics is that it deals with 33 gene(s) in 34 while that of population genetics deals with 35 gene(s) in the 36 which share the same 37. The sum total of genes in a biological cell is called 38. These genes are located on 39 which are in form of 40; each of which consists of 41 form the backbone, 42 holding 43 to the backbone. There are two main nitrogenous bases which are 44 consisting of 45 and 46 having single chemical ring and 47 consisting of 48 and 49 having two chemical rings. The nitrogenous base pairs thus 50 and 51. The sources of variation in siblings are 52, 53 and 54. When there are two simultaneous breaks in a single chromosomes and the middle rotates through 55 it is called 56. While when two simultaneous breaks occur between two 57 chromosome it is known as 58.Skin colour in man is controlled by 59 pairs of genes. 60 is a linkage group consisting genes in form of DNA.

ANSWERS TO BIO201 2010/2011

1. Non-Hereditable characters
2. Hereditable characters
3. Sex linked Genes
4. Mendel
5. Monohybrid inheritance
6. Dihybrid inheritance
7. 3:1
8. 1:2:1
9. 9:3:3:1
10. 1:2:2:4:1:2:1:2:1
11. 9/64
12. 27/64
13. (3:1)(3:1)(3:1)
14. Sum of genotype ratio 64
15. Non-chromosomal genes
16. Chromosomal
17. Nucleoplasm of Nucleus
18. Length of the chromosome
19. Polygenic
20. Major
21. Minor
22. Modifier
23. Skin colour in man
24. Height
25. Ulnar loop
26. Simple whorl
27. Radial loop
28. Co-dominant gene
29. Codominance
30. O
31. 6.6765
32. Not accepted
33. Genotypic & Phenotypic effect of the
34. Individual organism
35. Genotypic & Phenotypic effect of the
36. Population of organism
37. Gene Pool
38. Gene Pool
39. Chromosome
40. Double helical structure with base pairs
41. Phosphate groups & Sugars
42. Hydrogen bond
43. Nitrogenous bases
44. Pyrimidine
45. Thymine
46. Cytosine
47. Purine
48. Adenine
49. Guanine
50. Thymine
51. Cytosine
52. Linkage of genes
53. Combinatn of paternal & maternal chromosome
54. Crossover during meiosis
55. 180 degrees
56. Paracentric inversion
57. Arms of the
58. Pericentric inversion
59. Four
60. Chromosome