K26FY0414 Pages: 2 Reg No:.....
Name:.....

Fourth Semester FYUGP Degree (Reg) Examination April 2026

KU4DSCBOT205/KU4DSCPLS205 - GENETICS

2024 Admission onwards

Time : 1.5 hours Maximum Marks : 50

Section A

Answer any 6 questions. Each carry 2 marks.

1. State the phenotypic ratio obtained in a monohybrid cross.
2. Describe the reasons foe Mendel's success.
3. Describe reciprocal cross citing example.
4. Define hemizygous condition with suitable example.
5. Cite the significance of chromosomes.
6. Differentiate acrocentric and submetacentric chromosomes.
7. Write down the ratios of dominant and recessive epistasis.
8. Define heritability in genetics.

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Section B

Answer any 4 questions. Each carry 6 marks.

9. Compare chromatid, secondary constrictions, satellites and nucleolar organizers.
10. Give an account on the modern concept of gene.
11. Elucidate the ultra structure of chromosomes.
12. In mice, the agouti coat color is dominant to black, but a recessive albino gene can mask both. A true-breeding agouti mouse is crossed with an albino mouse (whose hidden genotype is homozygous for black). The F1 offspring are all agouti.a)If the F1 individuals are intercrossed, work out the expected phenotypic ratio in the F2 generation. (3 marks). b)Explain the genetic basis of this 9:3:4 ratio, detailing how the homozygous recessive condition at one locus affects the expression of the second locus. (3 marks).
13. Pleotropism is an exception to Mendelism. Explain.
14. Ear size in corn is a polygenic character. Substantiate the statement.

Section C

Answer any 1 questions. Each carry 14 marks.

15. Describe co-dominance with one example. Add note on how it differs from incomplete dominance.

16. Describe the interaction between genetics and society citing suitable examples.

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