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GENETICS

- The term 'genetics' was coined by- Bateson (1906).
- Theory of germplasm was introduced by- August Weisman.
- Mendel studied the inheritance of seven different pairs of contrasting characters.
- % of homozygous offsprings in F2 generation of monohybrid cross is – 50
- The terms 'genotype' and 'phenotype' coined by- Johanssen
- Test to assess whether the individuals are showing dominant character due to homo or heterozygosity- Test cross
- Universally accepted Mendel's law is- Law of Segregation
- The term 'heterosis' was coined by- Shull (1910)
- Genes that influence more than one phenotype trait is called –Pleiotropic genes.
- Phenotypic ratio n incomplete dominance is – 1:2:1
- Dominance involves intragenic gene suppression while epistasis involve intergenic suppression.
- 'Yellow' in mice is an example of- dominant lethal condition
- Genotype that is a carrier for sickle cell anemia is – Hb^A/Hb^S
- Expression of ancestral traits is termed as – Atavism.
- Qualitative characters like coat color, blood group etc. shows discontinuous variation, where as quantitative traits like height, weight etc. shows continuous variations.
- Alternative form of a normal gene is called- Allele
- Coat color in rabbits is an example of- Multiple allellism.
- Number of linkage groups in an orgainsim is equal to no: of chromosome pairs.
- Theory of linkage and concept of sex linked inheritance was proposed by- Thomas Hunt Morgan
- Rediscoverer's of Mendelian genetics was- Tschermack, Correns and Devries.
- Complete linkage is seen in – Male Drosophila

- Sex-linked genes for hemophilia and colorblindness in man are examples of Incomplete linkage
- Strength of linkage is inversely proportional to the distance between the genes and the strength is reduced by temperature and X-rays
- Crossing over occurs between non-sister chromatids of homologous pairs of chromosomes.
- Chances of crossing over more if genes are located- farthest
- 'Crossing over' takes place at the tetrad stage of meosis.
- Cell division characterized by splitting of nucleus followed by that of cytoplasm is called – Amitosis.
- Spindle formation inhibition and arresting the cells in metaphase are done by- colchicine.
- Examples of mitotic poison- Colchicine, Ribonuclease and Mustard gas.
- During meosis, pairing of chromosomes occur at- Zygotene stage
- From one spermatocyte 4 haploid spermatids are formed where as one oocyte forms single ovum.
- The term 'Chromosome' was coined by - Waldeyer
- Chromosomal basis of heredity was proposed by- Walter. S. Sutton.
- Chromosome with centromere in terminal position is called- Acrocentric.
- Chromosomes with subterminal centromere is called- Telocentric (J-shaped)
- Interphase chromosomes which are large and visible with naked eye are called- Polytene chromosomes.
- 'Cri-du-chat' or 'Cat cry syndrome' is caused by deletion in the short arm of 5^{th} chromosome
- Interchange of chromosome segments in non-homologous chromosomes is called- Translocation
- The method devised by Muller for detecting X-linked mutations in Drosophila is – CIB method.
- Classical experiments on *Neurospora crassa* was performed by- Beadle and Tatum.

- Substitution of a purine by a pyrimidine is called- Transversion
- Changes that involve replacement of one purine in a polynucleotide chain by another purine is called- Transitions
- Alkylating agents capable of causing mutations are- Ethyl methane sulphonate and Methyl methane sulphonate.
- Mutations caused by addition or deletion of nitrogenous based in the DNA or mRNA are known as- Frame shift mutation.
- In interphase, nucleus of cells in females a dark stained chromatin mass is observed called- Barr body.

Courtesy:

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