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Subject F . of Genetics

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DEP MICROBIOLOGY 4TH

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Q NO . 1

Answer ;

 Chromosome

 Chromosome are thread like structure located inside the nucleus of animal and plant cells .

 Chromosome is made of protein and single molecule of deoxyribonucleic acid DNA .passed from parents to offspring .

 Chromosome carrying genetic information in the form of genes .

 Q no 4

 Answer

 Chromosomal theory of inheritance

 Or the idea of that genes are located on chromosomes ,was proposed based on experiments by Thomas Hunt Morgan using drosophila melanogaster , or fruits flies .

 Why fruit fly

 Because like human they have xx in female and xy in female .they are cheap ,fast and easy to grow.

 Chromosome theory of inheritance state that genes are found specific location on chromosome and the behavior of chromosome

 Thomas Hunt Morgan , who studied fruit flies ,provide the first strong confirmation of the chromosome theory

 Morgan discovered a mutation that affected fly eye color .he observed that the mutation was inherited differently by male and female flies .

 Based on the inheritance pattern , Morgan conclude that the eye color gene must be located on X-chromosome .

Q no 2

Answer

 The DNA Era

1856-1863

 Mendel studied the inheritance of traits between generation based on experiments involving garden pea plants .he deduced that there is a certain essence that is passed on between generation from both parents .

The Avery –Macleod-McCarthy experiments isolate DNA as genetic materials at that time called transforming principal 1944 .

1950

 Erwin Chargaff determine the paring method of nitrogenous bases .

Chargaff and his term studied the DNA from multiple organisms and found three things also known as Chargaff rules .

First the concentration of pyramidines are always found in same amount as another .

Q NO 3

Answer

 The Genomic Era

1976 – the gene expressed in E.coli for the first time .

1982 – the U.S food and drug administration approved the release of the first genetically engineered human insulin . originally biosynthesis using recombination of DNA method by genetic in 1978 .

1978 – Yoshizumi fishing accidentally discarded the describe part of DNA sequence which later will be called CRISPR .

Q NO 5

Answer

 Mendel law of inheritance

Before Mendel law their was a concept of spontaneous generation .

The law of inheritance were derived by Gregor Mendel a 17 century monk

Between 1865 and 1863 ,he cultivated and tested some 29,000 pea plants .from these experiments he deduced two generation generalization which later become known as Mendel’s law of Heredity or Mendel an .

 Mendel work

He measured only absolute characteristics , such as color shape and position of the offspring ,rather than quantitative characteristics .

He expressed his result numerically and subjected them to statistical analysis .

His method of data analysis and his large sample size gave credibility to his data .

Without his careful attention to procedure and detail , Mendel work could not have had the impact it made on the world genetics.

 Fill in the Blanks

1. ; Gene

2 ; Human genetics

3 ; Heredity

4 ; T .H Morgan

5 ; Genotype

6 ; Genetic variation

7 ; Allelomorph

8 ; Traits

9 ; Centro mere , kinetochore

10 ; Medical genetics