

Questions and problems:

Q1) Draw the schematic diagram by which 2-amino purine induced mutation.

Q2) Explain with figure the attenuation mechanism of controlling *trp* operon.

Q3) Explain with figure the tautomeric shift of Guanine.

Q4) Explain with figure the Base excision Repair system.

Q5) Fill the following blanks with suitable words.

- a) In a DNA fragment is transferred from one bacterium to another by a lytic bacteriophage.
- b) Defects in nucleotide excision repair of human causes (1),
(2) (3)
- c) In repressible operons the native repressor is
- d) The stable form of adenine is
- e) Alkylating agents are electrophilic chemicals which readily add alkyl group to various positions on nucleic acids such as: (1) (2)
(3) and (4)
- f) The function of transacetylase in *lac* operon is

Q6) Explain with figure the tautomeric shift of Adenine.

Q7) Write the types of silent mutation.

Q8) Explain with figure the Nucleotide excision repair system.

Q9) Draw the schematic diagram by which 5-Bromouracil induced mutation.

Q10) Fill the following blanks with suitable words.

- The mismatch mutation usually recognized by
- Changes in the of a codon often have no effect.
- binds to the DNA and causes irreversible frameshift mutation.
- The substitution of Adenine by Cytosine is called mutation.
- pathway corrects mutations from deamination of cytosine.

Q11) Explain with figure the tautomeric shift of Thymine.

Q12) Explain with figure the Hfr conjugation.

Q13) Explain with figure the Photoreactivation repair system.

Q14) Explain with figure the Regulation of *Lac* operon in the absence of cAMP and lactose.

Q15) Explain with figure the tautomeric shift of Cytosine.

Q16) Explain with figure the F⁺ conjugation.

Q17) Explain with figure the Regulation of *trp* operon in the presence of low level of tryptophan.

Q18) Explain with figure the Regulation of *Lac* operon in the presence of cAMP and lactose.

Q19) Explain with figure the generalized transduction.

Q20) Draw the schematic diagram by which nitrous acid induced mutation.