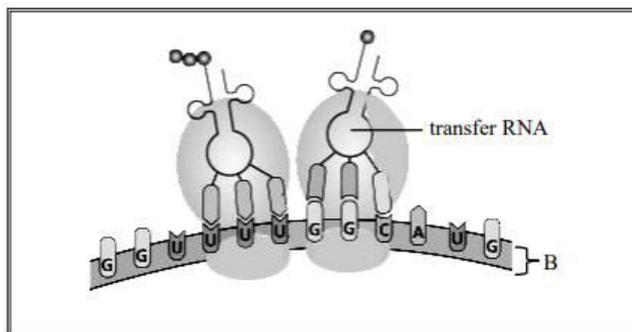


7. Purple flowers in sweet peas result from the pigment anthocyanin. Alleles C and P are required for the production of anthocyanin. The recessive alleles c and p are the inactive form of the anthocyanin. Thus the homozygous recessive for either gene (cc or pp) will block the synthesis of the pigment anthocyanin.

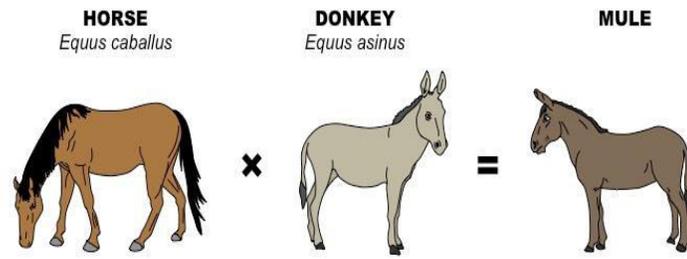
Note:		
•	C ___ P ___	= Purple Flowers
•	___ p p	= White Flowers
•	c c ___	= White Flowers

- (i) Name the gene interaction present in the above example.
 - (ii) Show how a cross between two white flowers with genotypes CCpp and ccPP will result in all purple flowers.
 - (iii) If a cross between two heterozygotes (CcPp) yield 32 flowers, calculate the number that would be white.
8. The diagram provided below shows a step in the process of protein synthesis occurring at the ribosomes. Use the diagram to answer the questions that follow.



Source: <http://docplayer.net>

- (i) Distinguish between a-site and p-site of a ribosome.
 - (ii) State the matching anticodons for the codon: UUU GGC
 - (iii) Identify the step shown and describe the process.
9. An individual with Turners Syndrome is monosomic for X in the 23rd pair of chromosomes.
- (i) Define the term **monosomic**.
 - (ii) Consider the gametes involved in the origin of an individual with Turners Syndrome. **Explain** how the individuals with Turners Syndrome have a chromosome number of 45.
10. Distinguish between Allopolyploidy and autopolyploidy.
11. Explain the following terms:
- (i) Seasonal isolation
 - (ii) Post zygotic isolation
12. The mule which is an infertile offspring is the result of a cross between a male donkey ($2n = 62$) and a female horse ($2n = 64$).



- (i) What term is given to the offspring that is produced from parents belonging to two **different** species?
- (ii) Calculate the diploid ($2n$) number of chromosomes in the mule.