

# **GENE REGULATION - (MCQ WITH ANSWER)**



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- **1. Lac operon is an example of**
- (a) only positive regulation
- (b) only negative regulation
- (c) both positive and negative regulation
- (d) sometimes positive sometimes negative
- **Answer: (c)**

**2. In the presence of lactose, how long does it take for the lac operon to be expressed?**

(a) when lactose equals glucose concentration

(b) when glucose is more than lactose concentration

(c) as long as lactose is more than glucose concentration

(d) as long as lactose is more than galactose concentration

**Answer: (c)**

**3. Which of these acts as an inducer of the lac operon?**

- (a) Allolactose
- (b) Lactose
- (c) Galactose
- (d) Glucose

**Answer: (a)**

**4. The sequence of the structural genes in the lac operon is**

- (a) lacA-lacZ-lacY
- (b) lacZ-lacY-lacA
- (c) lacZ-lacA-lacY
- (d) lacA-lacY-lacZ

**Answer: (b)**

## **5. Lac Operon will be turned on when**

- (a) Lactose is less than glucose
- (b) Lactose is less in the medium
- (c) Lactose in more than glucose
- (d) Glucose is enough in the medium

**Answer: (c)**

## **6. In Lac-operon, the gene product of LacA gene is**

- (a) Beta-galactoside permease
- (b) Beta-galactoside transacetylase
- (c) Beta-galactosidase
- (d) Beta-galactoside isomerase

**Answer: (b)**

**7. Which of these operons is anabolic?**

- a) Lac
- b) Ara
- c) Trp
- d) Phe

**Answer: c**

**8. Which of these systems give the best mode for turning trp operon off?**

- a) Repressor
- b) Attenuator
- c) Repressor with a downstream poly A tail
- d) Repressor with an attenuator

**Answer: d**

**9. Which of these properties do not agree with trp operon attenuator?**

- a) It brings about repression of trp operon
- b) It consists of one stem loop system
- c) It has two codons for tryptophan in sequence
- d) Ribosome stalls at the attenuator

**Answer: b**

**10. Which operon behaves similar to Bacillus subtilis trp operon in terms of attenuation?**

- a) Lac operon
- b) His operon
- c) Phe operon
- d) Ara operon

**Answer: b**

**11. In which microorganism will you find attenuation by alternate loop formation due to ribosomal stalling?**

- a) *S. aureus*
- b) *E. coli*
- c) *S. typhimurium*
- d) *B. subtilis*

**Answer: d**

**12. When uncharged tRNA concentration is low what will you expect as the activity of tryptophan operon?**

- a) Low
- b) Medium
- c) High
- d) Very high

**Answer: d**

**13. Concept of operon coined by**

- a) Jacob
- b) Monod
- c) Bergstrom and samuelsson
- d) Jacob and Monod

**Answer - D**

**14. We know that lactose has a positive impact on the activity of the lac operon. Tryptophan's presence has a**

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- a) Positive feedback
- b) Negative feedback
- c) No difference
- d) Highly positive impact

**Answer: b**

THANK YOU