

GENE REGULATION - (MCQ WITH ANSWER)



PRESENTED BY:

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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 is 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

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

Answer: b

THANK YOU