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Reg. No. :

Code No. : 7257

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M.Sc. (CBCS) DEGREE EXAMINATION,
APRIL 2019.

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First Semester

Microbiology — Core

PHYSIOLOGY AND METABOLISM

(For those who joined in July 2017 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The cell wall of archae bacteria consists of——.
 - (a) Heteropolysaccharide
 - (b) Homopolysaccharide
 - (c) both (a) and (b)
 - (d) None

2. The cell wall of mycobacterium tuberculosis consists of _____.

- (a) Mycolic acid
- (b) Lactic acid
- (c) Succinic acid
- (d) None

3. _____ are transported by permease through plasma membrane.

- (a) Organic nutrients
- (b) Inorganic nutrients
- (c) Both (a) and (b)
- (d) None of the above

4. Final electron acceptor in aerobic respiration is _____.

- (a) Organic compound
- (b) Inorganic compound other than oxygen
- (c) Oxygen
- (d) None

5. Which of these are produced by yeast during fermentation?

- (a) ATP
- (b) Alcohol
- (c) Oxygen
- (d) Both (a) and (b)

6. Propionic acid fermentation is carried out by _____.
- (a) Desulfivibrio
 - (b) Desulfococcus
 - (c) Lactobacillus
 - (d) Propionic acid bacteria
7. Which of the following is not an example for photoautotroph?
- (a) Algae
 - (b) cyanobacteria
 - (c) Herbs
 - (d) Fungi
8. Symbiotic N_2 fixation is found in _____ sp.
- (a) Rhizobium
 - (b) Lactobacillus
 - (c) Micrococcus
 - (d) Azotobacter
9. During the phase the rate of New cells being added to the population has slowed down
- (a) Stationary phase
 - (b) Death phase
 - (c) Lag phase
 - (d) Exponential phase

10. The balance between cell division and cell death is called _____.

- (a) Lag (b) log
(c) Stationary (d) decline

PART B — (5 × 5 = 25 marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Write short notes on Archae bacteria?

Or

(b) What is a plasmid and what is its function?

12. (a) Discuss about group translocation.

Or

(b) Explain oxidative and substrate level phosphorylation.

13. (a) Write short notes on butyric acid fermentation?

Or

(b) Write a note on Bioluminescence?.

14. (a) What is heterocyst? Add notes on its function?

Or

- (b) Write notes on bacterial pigments.

15. (a) How does a turbidostat work?

Or

- (b) What are the four stages of the bacterial growth curve?

PART C — (5 × 8 = 40 marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Discuss about gram negative bacteria cell wall structure and its functions?

Or

- (b) Write short notes on the following?

(i) Capsule

(ii) Flagella

17. (a) What types of transport moves ion? Explain?

Or

- (b) Narrate glyoxylate cycle.

18. (a) Write a detail notes on alcoholic fermentation.

Or

(b) Write an essay on sulphate respiration.

19. (a) Write notes on green sulphur bacteria.

Or

(b) Describe photophosphorylation and its importance.

20. (a) Differentiate endo and exospores.

Or

(b) Write a detailed notes on Batch culture.
