

(6 pages)

Reg. No. :

Code No. : 6424

Sub. Code : HZOM 21

M.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2016.

Second Semester

Zoology

MICROBIOLOGY

(For those who joined in July 2012 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The microbial classification put forth by Robert H. Whittaker is based on
 - (a) Microbial evolution and diversity
 - (b) Cellular organisation and principal modes of nutrition
 - (c) Molecular characteristics
 - (d) Reproduction

2. The plasmids in bacteria are important because
 - (a) They are inherited to the progeny
 - (b) They may carry genes that give their host a selective advantage
 - (c) They can render bacterial drug-resistance
 - (d) All of the above
3. Micro organisms, which obtain energy from the oxidation of chemical compounds are called
 - (a) Phototrophs
 - (b) Chemotrophs
 - (c) Lithotrophs
 - (d) Organotrophs
4. The metabolic pathway which oxidizes Acetyl-CoA to CO₂ is
 - (a) EMP
 - (b) ED pathway
 - (c) HMP
 - (d) TCA cycle
5. Freshly prepared yogurt contains
 - (a) 10⁹ bacteria per gram
 - (b) 10¹² bacteria per gram
 - (c) 10⁶ bacteria per gram
 - (d) 10¹⁵ bacteria per gram

Page 2

Code No. : 6424



6. The metabolic products which accumulate during the period of nutrient limitation or waste product accumulation that follows the active growth phase are
- (a) Amino acids (b) Organic acids
(c) Enzymes (d) Antibiotics
7. The disease which is transmitted by contact transmission is
- (a) Tetanus (b) Anthrax
(c) Chicken pox (d) AIDS
8. Hepatitis B virus belongs to the family
- (a) Flaviviridae (b) Hepadna viridae
(c) Picornaviridae (d) Caliciviridae
9. The solubilization of metals from ores employing micro organisms is popularly called
- (a) Bioleaching (b) Biosorption
(c) Biodegradation (d) Bioremediation
10. The tumor like growths – gall formation in plants is produced by the infection of
- (a) Agaricus
(b) Agrobacterium
(c) Rhizobium
(d) Cauliflower mosaic virus

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Describe the patterns of flagella in bacteria.

Or

- (b) What is gram staining? Explain.

12. (a) Comment on the factors affecting bacterial growth.

Or

- (b) Describe the Entner – Doudoroff pathway.

13. (a) Explain pasteurization and its uses.

Or

- (b) Write notes on the most common types of food poisoning.

14. (a) What are water borne diseases? Explain with an example.

Or

- (b) Comment on the pathogenesis and symptoms of rabies.



15. (a) Explain what is meant by potable water? Write a note on drinking water quality standards in India.

Or

- (b) Describe the phosphorous cycle.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Characterize the structure of a bacterial cell wall.

Or

- (b) Describe the structure and functions of nucleoid.

17. (a) Explain the culture techniques of microorganisms. Add a note on their advantages.

Or

- (b) Describe the fermentation technology in detail.

Page 5

Code No. : 6424

18. (a) Write an account on the methods of food preservation.

Or

- (b) Comment on the industrial production of organic acid.

19. (a) Give an account on the epidemiological aspects of tetanus and anthrax.

Or

- (b) What are sexually transmitted diseases? Discuss their prevention and control.

20. (a) Discuss the levels of sewage treatment.

Or

- (b) Comment on the economic importance of *Rhizobium* and *Agrobacterium Tumifaciens*.
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Page 6

Code No. : 6424

