

Reg. No.

B.Tech. DEGREE EXAMINATION, MAY 2019

3rd to 8th Semester

7

15BT101 – BIOLOGY FOR ENGINEERS

(For the candidates admitted during the academic year 2015-2016 to 2017-2018)

Note:

- (i) **Part - A** should be answered in OMR sheet within first 45 minutes and OMR sheet should be handed over to hall invigilator at the end of 45th minute.
- (ii) **Part - B** and **Part - C** should be answered in answer booklet.

Time: Three Hours

Max. Marks: 100

PART – A (20 × 1 = 20 Marks)

Answer **ALL** Questions

- Sugar molecule in nucleic acid are categorized as ____
(A) Hexose (B) Tetrose
(C) Pentose (D) Doise
- Which one of the following is NOT a renewable, exhaustible natural resource?
(A) Aquatic animals (B) Wild life
(C) Minerals (D) Soil fertility
- A single cell to divide and produce all of the differentiated cells in an organism
(A) Pluripotent (B) Totipotent
(C) Unipotent (D) Multipotent
- What does SCNT means?
(A) Somatic cell nuclear transfer (B) Small cell nuclear transfer
(C) Single cell nuclear transfer (D) Small RNA nuclear transfer
- Degenerative disorder of the central nervous system
(A) Diabetes mellitus (B) Parkinson's disease
(C) Polio (D) Muscular dystrophy
- What is the capacity of unspecialized cell
(A) Differentiation (B) Self renewal
(C) Determination (D) Proliferation
- The mechanism of enzyme activity is termed as
(A) Catalysis (B) Hydrolysis
(C) Proteolysis (D) Oxidation
- ____ occurs when the inhibitory chemical, which does not have to resemble the substrate, binds to the enzyme other than at the active site
(A) Non competitive inhibition (B) Competitive inhibition
(C) Uncatalysed reaction (D) Activation energy

9. The visible product of photosynthesis is
(A) Glucose (B) Cellulose
(C) Starch (D) Fructose
10. Photosynthetic pigments in chloroplast are embedded in membrane of
(A) Thylakoids (B) Photoglobulin
(C) Matrix (D) Envelop of chloroplast
11. The F1 portion of ATP synthase contains _____ catalytic site
(A) 3 (B) 5
(C) 2 (D) 7
12. Kinesin and dynein transport _____ along microtubule.
(A) Cargo (B) ATP
(C) Actin (D) Myosin
13. An example for surfactant is
(A) Sodium dodecyl sulphate (B) PCB's
(C) Cyanides (D) Chloroform
14. The best pH range for bioremediation is
(A) 6.5 – 7.5 (B) 4.5 – 5.5
(C) 3.5 – 4.5 (D) 7.5 – 8.5
15. Biosensor consisting for an immobilized layer of biological materials includes.
(A) Enzymes (B) Organelle
(C) Whole cell (D) Carbohydrate
16. The traditional method widely used to recycle nutrients in garden and yard waste is
(A) Composting (B) Biopiles
(C) Land forming (D) Bioreactor
17. Active artificially acquired immunity is a result of
(A) Vaccination (B) Contact with a pathogen
(C) Injection of an immune serum (D) Antibodies of the mother passed to fetus
18. Where do T-cells reach maturity?
(A) Thymus (B) Bone marrow
(C) Tonsils (D) Lymph nodes
19. Synaptic signaling involves
(A) Neurotransmitters (B) Autocrine signals
(C) Paracrine signals (D) Endocrine signals
20. The only antibody that can cross placental barrier to the fetus is
(A) IgG (B) IgA
(C) IgM (D) IgE

PART – B (5 × 4 = 20 Marks)
Answer ANY FIVE Questions

21. Define prokaryotes and eukaryotes and mention their differences.
22. Write about synapsis and crossing over.
23. Differentiate leading strand and lagging strand.
24. Write about the pattern of DNA cutting by restriction enzymes.
25. Write about ATP synthase.
26. Write details about types of glial cells.
27. What are called synapses? Explain with neat diagram.

PART – C (5 × 12 = 60 Marks)
Answer ALL Questions

28. a. Name the organelles of cell and describe their functions.
(OR)
b. Describe on detail about the mitotic cell division.
29. a. Describe about biochemistry and human biology and the importance of bio macromolecules.
(OR)
b. Elaborate on protein synthesis.
30. a. Explain the factors affecting enzyme activity and its application.
(OR)
b. What is photosynthesis? Explain dark reaction and the significance of photosynthesis.
31. a. Write detail notes on ATP synthase.
(OR)
b. What is biosensor? Write basic concept types and applications.
32. a. Explain the different parts of a neuron with help of a figure? What happens in a synapse of the neuron?
(OR)
b. What is called cell signaling? How the cellular communication occurs in the body?

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