Reg. No.															

B.Tech. DEGREE EXAMINATION, NOVEMBER 2019
Third to Seventh Semester

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

1. Which of the following is an example for kingdom Monera?
   (A) Yeasts (B) Molds
   (C) Bacteria (D) Birds

2. The cells were first described by _____
   (A) Wilhelm Rontgen (B) Robert Hooke
   (C) Charles Goodyear (D) Alexander Fleming

3. Which of the following nitrogenous base is NOT present in DNA?
   (A) Adenine (B) Uracil
   (C) Guanine (D) Cytosine

4. In mitosis cell division, which stage participate in spindle fibre formation?
   (A) Prophase (B) Metaphase
   (C) Anaphase (D) Telophase

5. Which of the following is an example of disaccharides?
   (A) Cellulose (B) Lactose
   (C) Fructose (D) Glucose

6. The steroid hormones are the example of _____macromolecule.
   (A) Carbohydrate (B) Lipids
   (C) Proteins (D) Nucleic acids

7. Which of the following molecule is related to clover leaf structure?
   (A) DNA (B) rRNA
   (C) tRNA (D) mRNA

8. Which of the following is called stop codon?
   (A) AUG (B) UAU
   (C) UAG (D) AAU

9. _____Coenzyme influence enzyme activity.
(A) ADP (B) ATP
(C) FAD (D) GDP

10. The xylanase enzyme widely used in _____industry.
(A) Textile (B) Paper
(C) Brewing (D) Food

11. Which of the following ion is used in carbonic anhydrase activity?
(A) Zn^{2+} (B) Mg^{2+}
(C) Mn^{2+} (D) Cu^{2+}

12. The photosynthesis occurs in the _____part of the plant.
(A) Root (B) Stem
(C) Leaf (D) Flower

13. The F_0F_1-ATPase motors are present in _____.
(A) Cytoplasm (B) Nucleus
(C) Endoplasmic reticulum (D) Mitochondria

14. _____Flagella consist of a rotary motor embedded in the cell envelope.
(A) Euglena (B) Paramecium
(C) Bacteria (D) Chlymydomonas

15. Which of the following protein present in the bacterial flagellar motor?
(A) Actin filament (B) Myosin
(C) Mot A (D) Nestin

16. _____is the example of *Ex-situ* bioremediation.
(A) Bioventing (B) Biosparging
(C) Biopiles (D) Bioaugmentation

17. _____type of glial cells remove dead neurons, neuron debris and microbes through phagocytosis.
(A) Oligodendrocytes (B) Ependymal cells
(C) Astrocytes (D) Microglia

18. Which of the following chemical is called neurotransmitter?
(A) Insulin (B) Serotonin
(C) Interleukin (D) Desmin

19. Which of the following cells are called erythrocytes?
(A) White blood cells (B) Red blood cells
(C) Platelets (D) T cells

20. G-protein coupled receptors are type _____transmembrane domain protein.
(A) Seven (B) Eight
(C) Five (D) Six

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

21. Write short note on cell theory.
22. Draw the structure and label the parts of nucleus.
23. Brief about importance of biodiversity.
24. Write short note on restriction enzymes.
25. Write short note on glucose biosensors.
26. Brief about different types of solid phase bioremediation.
27. Write a brief note on different types of cell signaling.

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

28.a. Differentiate between prokaryotic and eukaryotic cell.

(OR)

b. Explain the structure and function of eukaryotic cell with suitable diagram.

29.a. Describe the protein synthesis.

(OR)

b. Explain elaborately about sources, types and function of stem cells.

30.a. Describe the factors affecting enzyme activity.

(OR)

b. Write an essay on photosynthesis with suitable illustration.

31.a. Explain elaborately about structure and function of F_0F_1-ATP synthase motors.

(OR)

b. Write an assay on different types of biosensors.

32.a. Explain the structure and function of neurons with neat diagram.

(OR)

b. Describe innate and acquired immunity.

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